



Sustainability Report
2020



Highlights 2020



-19%

Average frequency of **injuries** compared with the previous year



54

MJ - energy consumption per hour worked

-18% vs 2019



62

Average Hours of training per employee



5

kgCO_{2eq} per hour worked - **Carbon footprint** (Scope 1 and 2)

-20% vs 2019



95%

of employees hired on **permanent contracts**



90,2

GWh produced by **photovoltaics**

+4% vs 2019



555

mln euro distributed to **stakeholders**



73%

Reused or recycled **waste**

+19% of total vs 2019



92%

of the order backlog in projects that contribute to the advancement of the **SDGs (Sustainable Development Goals)**.



87

L - water consumption per hour worked

-10% vs 2019

Letter to Stakeholders

We are living in a complicated era characterised by stimulating challenges. We have been catapulted into a global pandemic that has reshaped our daily lives and affected our physical and mental wellbeing. This upheaval and its unquantifiable losses have undoubtedly encouraged us to **embrace** issues such as **sustainability, inclusion** and the importance of our local **communities**.

2020 was an important year for Ghella from a sustainability viewpoint. **Our workers' safety** continues to be a priority. We recorded a 19% reduction in the injury rate and a 20% reduction in our greenhouse gas emissions due to energy consumption. We produce solar power, contributing to the transition to a carbon-neutral society.

By investing in countries that prioritise ESG issues, we enrich our expertise, sharing technologies and know-how to the benefit of our clients all around the world. **Tunnels** are **fundamental infrastructure** for the future of mobility and low-environmental-impact services.

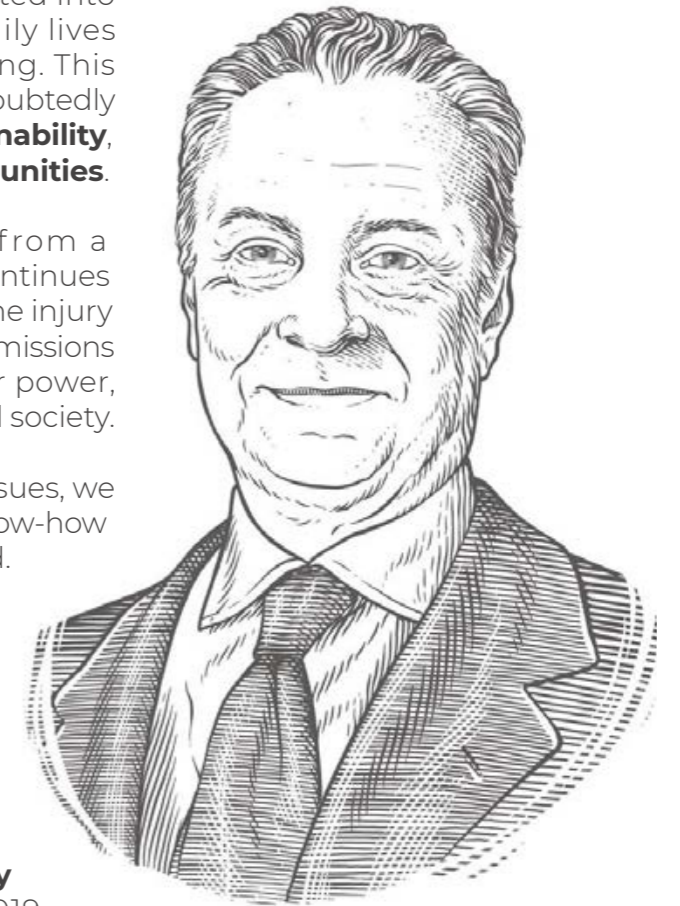
Projects that contribute to progress towards the United Nations' **Sustainable Development Goals** make up 92% of our order backlog.

We have **increased our sustainable mobility projects** from 62% of our order backlog in 2019 to 68% thanks to the acquisition of works such as the Broadway Subway in Vancouver, Canada, and the Telese - Vitulano lot of the high speed Naples - Bari railway section. This is in line with the EU post-pandemic development plans hinging on sustainable infrastructure as the driver of the economic relaunch.

This is our second Sustainability Report and our positive results encourage us to continue in this direction, matching our **ambitions and future actions** to our stakeholders' expectations in an ongoing process of **virtuous improvement**.

Our road ahead is paved with good intentions, we just have to make them happen.

Enrico Ghella
Chairman and CEO



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Company

Profile

COUNTRIES

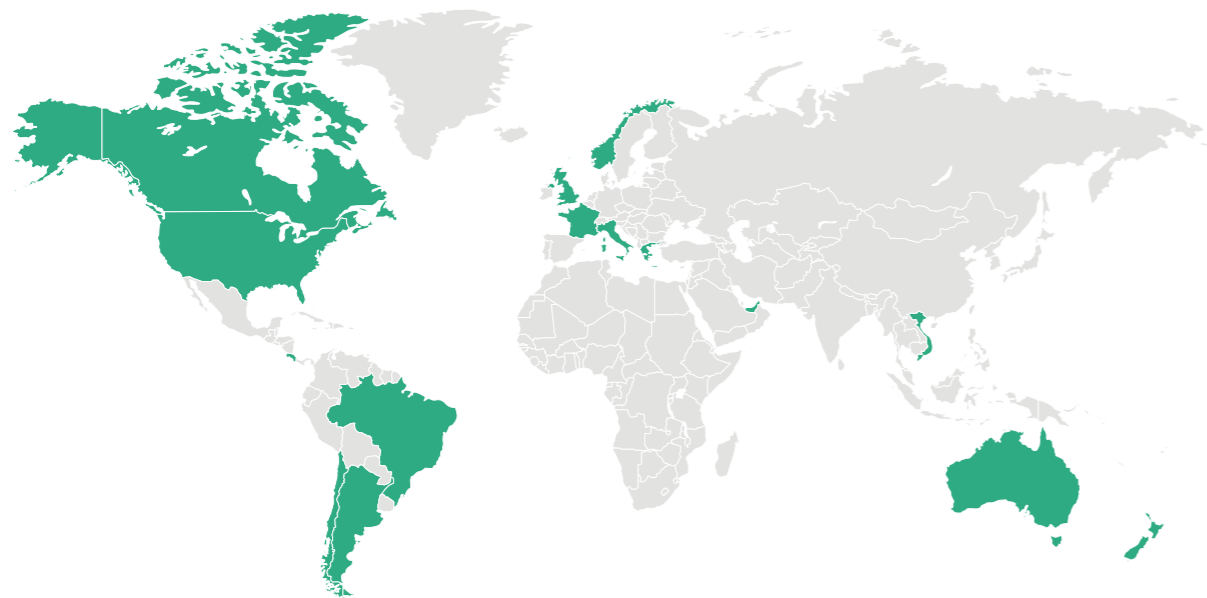
15

LANGUAGES

24

ONGOING PROJECTS

21



Our presence in the world (offices, branches, subsidiaries and production units)


ROADS AND MOTORWAYS

 **16**
Motorways

RAILWAYS & METRO

 **35**
Railway lines

WATER

 **24**
Hydraulic works

 **>300**
km of roads

 **16**
Metro Lines

 **11**
Hydroelectric plants



Vietnam, Hanoi
Photo by Francesco Neri from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

Founded in 1894, **Ghella** is a major international player in the large public works construction market.

Specialised in underground works, we build infrastructure projects such as metros, railways, motorways and hydraulic works.

Ghella is headquartered in Rome but carries out most of its activities abroad, mainly in **Oceania**, the **Americas** and **Europe**.

Thanks to the use of **cutting-edge technologies**, the continuous training of our people, the development of **innovative construction methods** as well as our focus on **safety** and the **environment**, we can complete complex engineering works, ensuring the company's ongoing dynamic growth and the economic and social development of our local communities.

As well as working in the large public infrastructure sector, we are active in the **renewable energy sector**. We develop, build and operate mainly photovoltaic and hydroelectric renewable energy power plants in Italy, Central America and the Middle East.

PRODUCTION km excavated

~240 km using TBMs

~230 km using traditional methods

~13 km using pipe jacking

PHOTOVOLTAIC

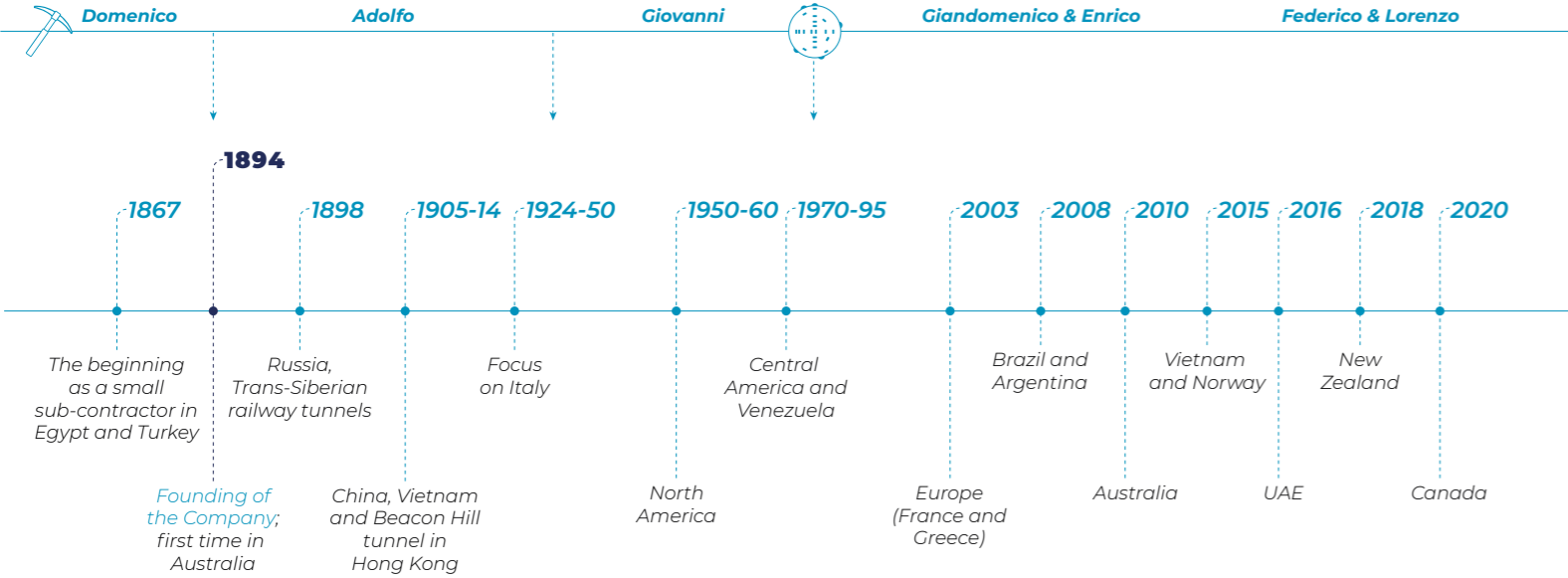
 **1.125**
MW in operation

Production data as of May 2021



Cina
Beacon Hill Tunnel

History and Tradition



Since its inception more than 125 years ago, Ghella has lived through five generations of recent history, passing down knowledge, expertise, ingenuity and spirit of enquiry, with each generation resolving difficult challenges and leaving its mark on today's company.

The company was founded in 1894, but the forefather of the family, **Domenico Ghella**, was already active on a worksite in 1867.



Russia,
Transcaucasian railway

RELATED LINK



Ghella.com
History



Corporate Governance

Ghella is an unlisted company limited by shares (S.p.A.), whose indirect owners are Ghella Group S.r.l. (70%) and Geo 2007 S.r.l. (30%).

CORPORATE STRUCTURE

While remaining a family-run business, Ghella's governance model has developed over time in tune with its sustained expansion into new foreign markets.

Ghella's governance structure consists of a board of directors and a board of statutory auditors, both appointed by the shareholders, independent auditors and a supervisory body as per Legislative decree no. 231/01, appointed by the board of directors.

BOARD OF DIRECTORS

Enrico Ghella	Chairman & CEO
Federico Ghella	Deputy Chairman
Lorenzo Ghella	Deputy Chairman
Giulio Grimaldi	Director
Alberto Nigro	Director
Marco Tummarello	Director

BOARD OF STATUTORY AUDITORS

Riccardo Gabrielli	Chairman
Alberto Santi	Auditor
Francesco Farina	Auditor



Australia, Sydney
Photo by Alessandro Imbriaco from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

Ghella's **board of directors** has six members, not all of whom are shareholders, aged between 40 and 70. Its chairman and chief executive officer is Enrico Ghella and its two deputy chairmen are Federico Ghella and Lorenzo Ghella. As an administrative body, the board of directors has the broadest ordinary and extraordinary administration powers over the company. It also has the right to perform all the actions it deems appropriate to achieve the business object, excluding only those that the law strictly reserves to the Shareholders' Meeting.

The **board of statutory auditors** is the internal control body that

supervises compliance with the principles of correct administration, as required by Ghella's articles of association. It has three standing members and two alternate members, appointed and effective pursuant to the Italian Civil Code.

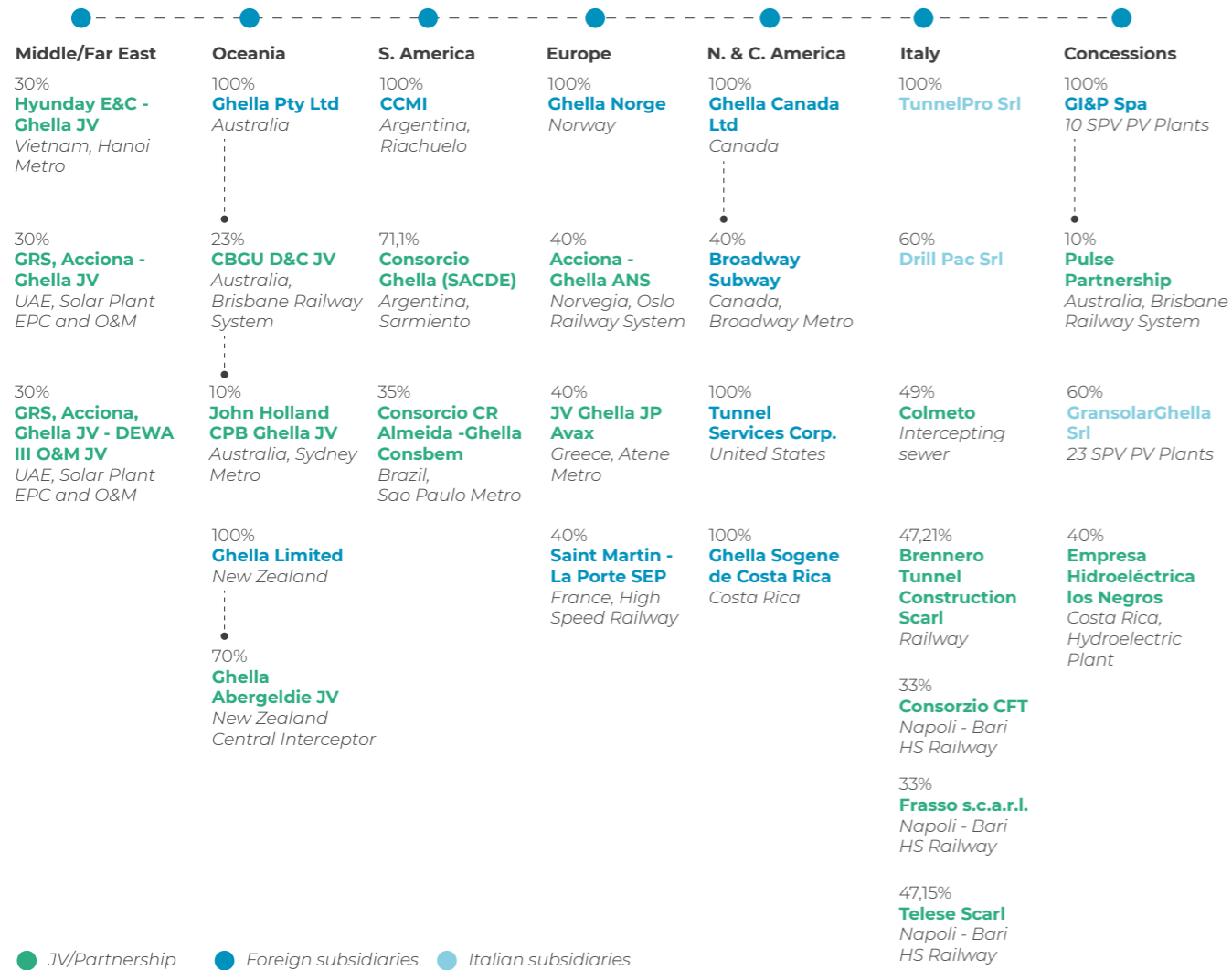
As required by the regulations in force, the statutory audit is performed by an **independent audit company** included in the special register, appointed by the board of directors.

In accordance with Legislative decree no. 231/2001, the board of directors has also set up a **supervisory body** comprising three independent members who have a three-year term.

The **compliance and sustainability function reports to the corporate strategy manager** (who is a member of the board of directors) and is tasked with coordinating the sustainability activities integrated into the various internal processes, supporting senior management in identifying areas for improvement, producing the annual sustainability report and guaranteeing alignment with international best practices.



Ghella Spa



Ghella's Corporate Structure

Management System

Given our footprint in many culturally different countries, we have a multi-site **integrated management system** for quality, the environment and occupational health and safety as part of our organisational model. This system reflects Ghella's standardised organisational and operational approach while giving the individual local units the organisational independence necessary to comply with local legislation and clients' requirements.

Company principles and guidelines are communicated to internal and external stakeholders through our website, while procedures are shared

internally with each worksite via the company intranet.

The system is certified in accordance with the international standards **ISO 9001: 2015**, **ISO 14001: 2015** and **ISO 45001: 2018**, which ensures our management and oversight of internal processes in line with the quality, environment and safety frameworks and their ongoing improvement.

The system applies to all the company's activities carried out in 100% of our worksites. In the case of contracts where we operate as part of a joint venture, the worksite's

management system is designed ad hoc considering each partner's management system. In this case, Ghella participates in the design of the shared system to ensure that our principles and rules are fully integrated in the joint venture's system.

RELATED LINK



Ghella.com Ethics & Compliance



Ghella.com Our Way

Profile



MARCO TUMMARELLO
Chief Financial Officer (CFO)

Tell us about your professional experience and what led you to Ghella

In 1993, after completing my studies in Economics and Law and a brief work experience at the Ministry of Finance, I was hired as an assistant to the CFO of a large Italian construction company. After seven years, when I was 34, I became manager and two years later, in 2002, I was appointed deputy CFO. After this intense personal and professional educational and training period, I decided I would like a change of career. I had the privilege of meeting Giandomenico Ghella in that period and he offered me a great opportunity showing his confidence in me right from the start. I started my career in Ghella initially in the project financing area but I was able to draw on my experience gained earlier to rapidly move on and I became Ghella's CFO in 2013. I was appointed member of the Board of Directors in 2018, an achievement that I consider the crowning glory of my professional life and that makes me feel part of the history of the Ghella family.

How do you think the job of a CFO is changing in a world where sustainability is an increasingly integrated part of a company's processes?

A CFO's job has a more technical side, which I have delegated to my excellent colleagues more and more over the years, and a more strategic and communication side, mostly involving the management of relations with

the banks and other stakeholders. For years now, one of the requirements most requested by these stakeholders, alongside technical expertise, capital strength, economic efficiency and internationalisation, is the level of ambition with which entities incorporate ESG criteria into their business. As we want to be considered by our economic and financial stakeholders as a partner and not just a client, we have to share the values of our corporate mission. The financial sector is showing preference for entities that operate sustainably and are aware that we must do our best to leave our children with a world that is at least the same as ours, even though it seems that the opportunities for young people are no longer the same. I am proud of how we pre-empted the trend by adopting a sustainability strategy, presented in a dedicated report, and obtaining excellent external sustainability performance assessments. This has given me greater credibility in my dealings with our financial stakeholders and even a competitive edge.

Can you give us some examples of sustainability requirements requested by banks of the construction industry?

Ghella's sustainability path has made it easier for us to access subsidised financing. In 2020, we obtained a green loan from BNL Gruppo BNP Paribas, after presenting our five-year investment plan which had to be approved by the bank's committee and SACE, the state guarantor, to ensure we were eligible in ESG terms. The loan has incremental environmental covenants to ensure we improve our environmental performance constantly over time. Non-compliance with just one of these two covenants does not trigger repayment of the loan but increases its cost: this concept seems to me to be absolutely balanced and acceptable.

What are the most stimulating aspects of your job?

One of the very interesting parts of my job is preparing the group's consolidated financial statements which reflect Ghella's operations around the world. Each set of financial statements summarises a year's work, sacrifices, ideas, problems and

solutions and marks another step in an Italian success story that started back in 1894. Another part of my job that I like is the awareness that I have the trust of our shareholders and owners and can act with full authority in all the negotiations I undertake. This makes my position very stimulating and allows me to capitalise on my experience and knowledge. Moreover, I work with technically impeccable colleagues which means I have a global vision of all the aspects that I follow. Finally, I am happy to work in an environment where the key corporate value is to maintain a high professional, ethical and moral standard in everything we do and to operate for the common good and for the group as a whole. This internal culture encourages a serene and constructive work environment where everyone is able to give their best.



Our Sustainability Journey

VISION Leave a better world to the next generations

MISSION Build excellence in a sustainable and innovative way

Our sustainability journey starts with our **vision** of the future that we want to build by sharing our business choices: a better world for the **next generations**.

We are aware that achievement of this vision is only possible through the collaboration of multiple players:

governments, organisations, companies and civil society. This is why we base our daily activities on our corporate **mission**, aimed at preserving and continuing our history as “constructors of **excellence**” pursuing **innovation** and **sustainability**, and our clear set of **values** which guide our behaviour.

Our vision and mission both encompass sustainability because our intention is to **integrate** its principles in all facets of our business: from **selecting** targeted projects to the way we **carry out** our works, in corporate as well as site processes.

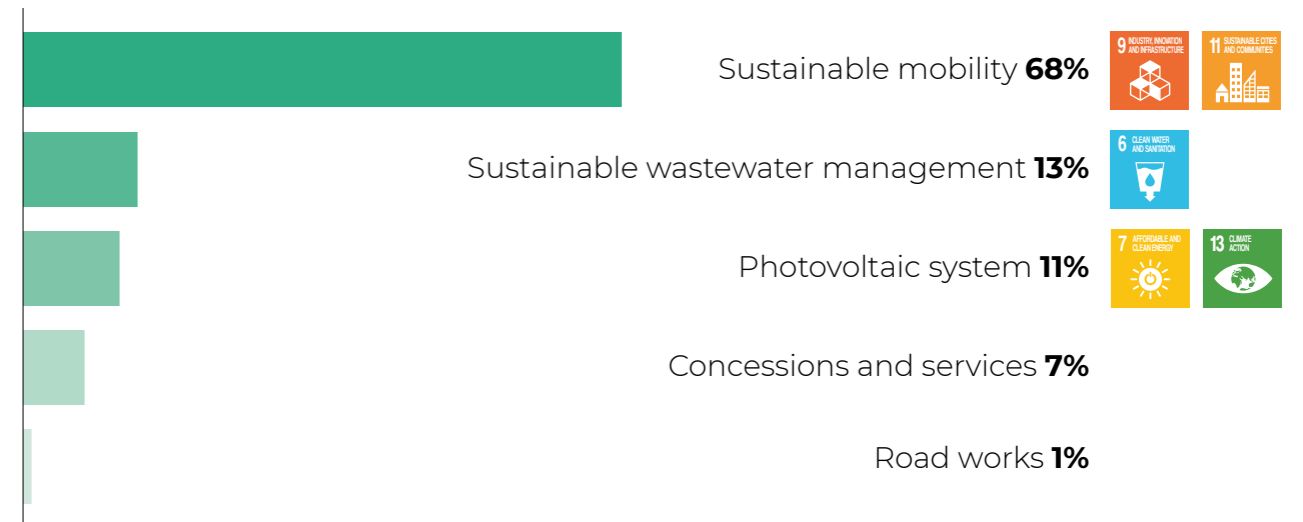
“We must change mentality, placing sustainability at the heart of planning the entire life cycle of the works: from their design to their construction and operation as well as their end of life”

Federico Ghella
Deputy Chairman, Ghella SpA

*Projects:
long-term benefits for
people and the environment*

Our work is an important part of the construction of complex **infrastructural works** that contribute to the **development** and **progress** of the countries where we operate.

ORDER BACKLOG BY ACTIVITY



Our works, mainly in the railway, subway and hydraulic works sectors, are designed to bestow a **lasting legacy** on the residents of the cities and areas in which we work, facilitating their transition to increasingly sustainable lifestyles. We contribute to progress towards the Sustainable Development Goals (SDGs) of the United Nations' 2030 Agenda for Sustainable Development, with **sustainable mobility** contracts accounting for 68% of our **2020 order backlog**, **wastewater sustainable management** contracts making up another 13% and **photovoltaic systems** contracts 11%. The remaining 8% of our order backlog includes sustainable mobility and renewable energy generation concessions

(7%) and road works (1%). In 2020, sustainable mobility works increased by 6% as a percentage of our backlog from 62% to 68%, thanks to the roll-out of important projects such as the Broadway Subway in Canada and the Telesse-Vitulano lot of the high speed Naples-Bari railway line in Italy.

Our infrastructure projects are increasingly relevant within the economic rebound after the current pandemic and in particular Italy's commitments with the EU as set out in the **Next Generation EU** package. The content and guiding principles set by the European Commission for the Recovery Plan hinge on the requirement that the projects, investments and reforms proposed by

the member states contribute to their green and digital transitions, resilience and social sustainability as well as innovation and competitiveness. Italy has taken up this challenge with its **National Recovery and Resilience Plan**, based on **six missions**, one of which is “**Infrastructure for sustainable mobility**”. This implies that, at the heart of Italy's plan to kick-start its economic relaunch, is the construction industry, Ghella's core business, and that sustainability, already an integral part of its operations, is even more indispensable.



Australia, Brisbane
Cross River Rail



Project sustainability benefits

Italy

BRENNER BASE TUNNEL

High Speed
2016 - Today

- **55 minutes** reduction in journey times
- Annual reduction of approximately **200,000t** of CO_{2eq}

NAPOLI - BARI

High Speed
2019 - Today

- Reduction of the travel time between Naples and Bari of **1 hour and 40 min**
- First **Platinum Envision** certification in Europe obtained for the design of our project by our client RFI

Norway

FOLLO LINE

High Speed
2015 - Today

- **Halving of the travel time** between Oslo and Ski

France

SAINT MARTIN LA PORTE (TURIN - LYON)

High Speed
2015 - Today

- Annual reduction of approximately **3 million t** of CO_{2eq}

Greece

ATHENS METRO

Metro
2012 - Today

- **132 thousand passengers** served per day
- **45 min** journey between Athens Airport and the Piraeus
- Average reduction of **23 thousand vehicles** per day
- Daily reduction of approximately **120 tons of Co_{2eq}**

Australia

SYDNEY METRO CITY AND SOUTHWEST

Metro
2017 - Today

- **71% increase** in the number of **morning peak** hour trips
- Travel modal shift from car to metro of **20,000 rush hour trips** by 2036

CROSS RIVER RAIL

Metro
2019 - Today

- Peak of **24 trains** per hour in both directions
- Increase of **9 thousand passengers** per day by **2026** and **23 thousand** by **2036**

Canada

BROADWAY SUBWAY PROJECT

Metro
2020 - Today

- Up to **163 thousand passengers per day** by 2030.
- **30 min** journey time reduction

Argentina

MATANZA RIACHUELO

Hydraulic Tunnel
2020 - Today

- **7 million local residents** (of which 10% below the national poverty line) beneficiaries of the infrastructure

UAE

DEWA PHASE III

Renewable Energy
2016 - Today

- **1,066 MW** power plant

Vietnam

PILOT LIGHT LINE 3 - HANOI METRO

Metro
2017 - Today

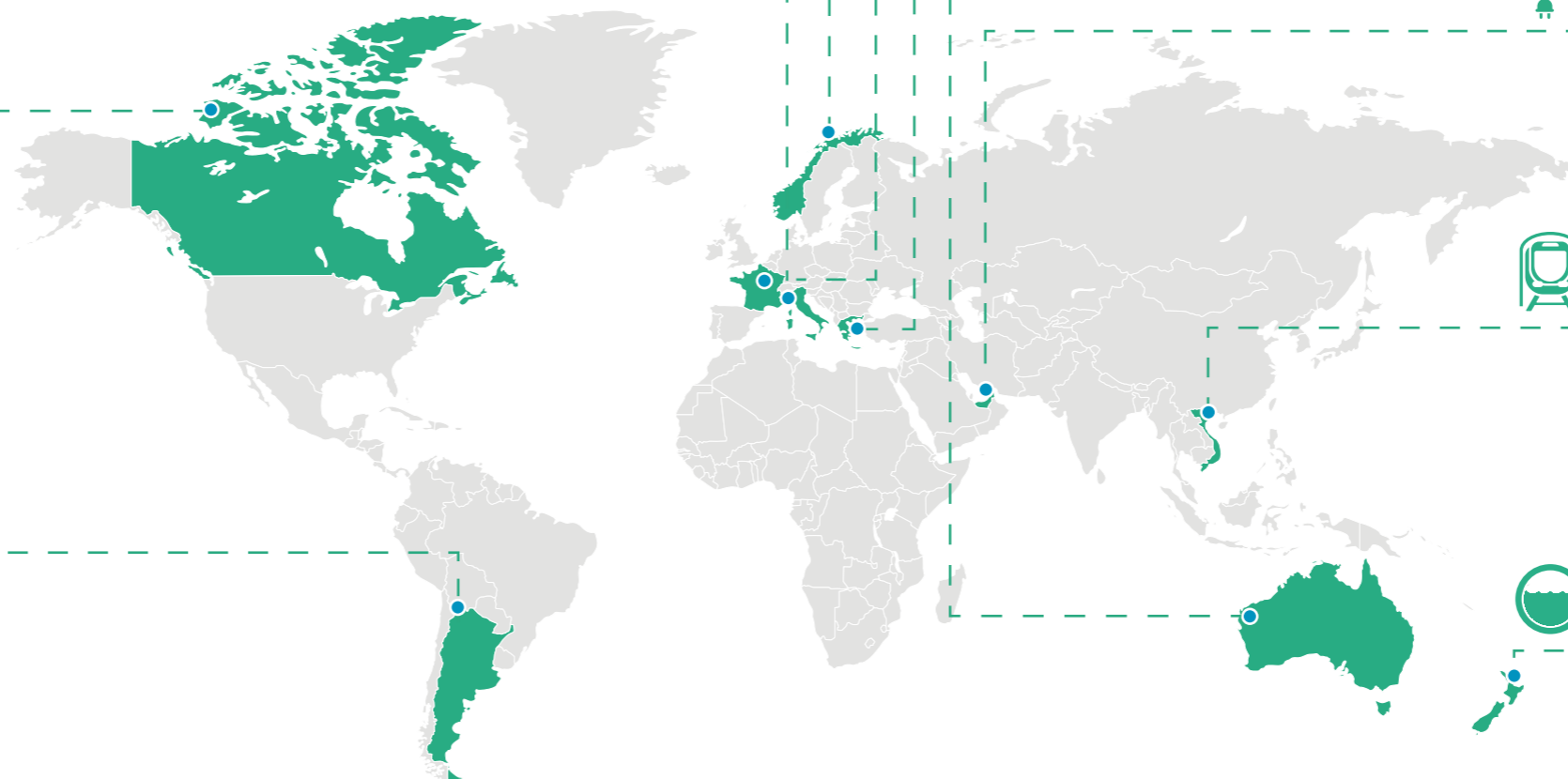
- **200 thousand passengers** per day

New Zealand

CENTRAL INTERCEPTOR

Hydraulic Tunnel
2019 - Today

- **80% reduction** in Auckland's **wastewater** overflows due to stormwater



SUSTAINABLE MOBILITY RAILWAYS

Our railway works facilitate the transition from **road to rail**. We work on strategic national and international transport corridors, improving the **mobility** of people and goods and making positive contributions to local air quality, climate change and resource consumption, due to the reduction of emissions and fossil fuel consumption associated with transport.

All our European projects in the railway sector are part of the **Trans-European Transport Network (TEN-T)**: a set of integrated transport infrastructures envisaged by the European Community to support the single market, guarantee the free movement of goods and people, decrease the use of road transport and strengthen the growth, employment rate and competitiveness of the European Union. Our **Follo Line** project, the **Brenner Base Tunnel** and the high speed **Naples-Bari** railway are part of the Scandinavian - Mediterranean Corridor while the high speed **Turin-Lyon** railway is included in the Mediterranean Corridor project as part of the Trans-European rail network.

The 22-km double-track **Follo Line** will halve the travel time between Oslo and the satellite city Ski and develop the existing railway transport system, making it more competitive in terms of journey times and travel quality and therefore reducing city traffic due to commuting. The ramifications

of this project extend also to the urban planning sphere, and the decongestion of the Norwegian capital, thanks to the improved connection with nearby Ski and the possibility offered to the inhabitants of Oslo to reside outside the city while being able to commute with a pleasant travel experience. At the end of 2020, the Follo Line project was roughly 95% completed.

Once finished, with its 55-km track between Innsbruck and Fortezza, the **Brenner Base Tunnel** will be the longest underground railway connection in the world. In addition to offering an alternative to the road transport mainly used for the north-south connections between Austria and Italy, the new line will reduce travel time by 55 minutes compared to the existing railway connection. This will be achieved by eliminating the steep slopes of the current line and allowing the use of longer trains with increased freight load capacity, which will require less power and energy. Our client BBT has estimated the reduction in CO_{2eq} emissions associated with the new transport option offered by the construction of the tunnel. It analysed traffic scenarios and included an estimate of the amount of CO_{2eq} associated with the construction phase, therefore considering the so-called "zero project hypothesis". A time of about 14 years has been estimated² to offset the CO_{2eq} emissions associated with the

construction of the Base Tunnel, with a subsequent CO_{2eq} saving of about 200,000 tonnes every year of the infrastructure's life cycle. Work on the Brenner Base Tunnel commenced as contractually provided for in September 2016 and is slated to take around seven years. At the end of 2020, the contract was approximately 58% completed.

We are involved in three lots of the **high speed/high capacity Naples-Bari railway line**, which has been identified as a priority in the list of structural investments set out in the "Sblocca Italia" law of 2014 and recently included in the National Recovery and Resilience Plan presented to the European Commission for the purposes of the Next Generation EU package. These lots are the **Cancello-Frasso Telesino**, **Frasso Telesino-Telese** and **Telese-San Lorenzo-Vitulano** sections. The project is of vital importance to southern Italy's development and will increase train service accessibility in the two areas that together account for more than 40% of the entire market output of southern Italy, covering a macro area of 15 million residents which include areas at risk of depopulation. Upon completion, the travel time between the cities of Naples and Bari will be one hour forty minutes shorter, taking just two hours, while the time required to travel between Rome and Bari will decrease by one hour to three hours. The new line will take on part of the freight currently transported by road and will allow a reduction in CO_{2eq} emissions, contributing to achievement of the goals set in the EU's transport white paper, i.e., shift 30% of road freight over 300 km to rail transport by 2030 and 50% by 2050³. In addition, our client RFI was awarded the Envision Platinum certification, the first project in Europe to achieve this certification, for its design for the Frasso Telesino-San Lorenzo section (which incorporates two of the lots awarded to Ghella). The Envision protocol is a rating system of sustainable infrastructure, originally introduced in the US and subsequently adopted in other countries, and assesses a project's performance in terms of improvements to the community's quality of life, stakeholder

engagement, the responsible use of natural resources, protection of the environment and flora and fauna, CO₂ emissions and infrastructure resilience. At the end of 2020, production on the Cancello-Frasso Telesino lot was roughly 13% complete. Work to set up the worksite and remediation activities for the Frasso Telesino-Telese lot started early in 2021 while design activities have commenced for the Telese-Vitulano lot.

Our project at **Saint Martin La Porte** for the **Turin-Lyon** railway line represents another example that generates benefits associated with the reduction of road transport.

The railway link is located at the intersection of two major European transport axes, north-south and east-west, therefore playing a particularly crucial role for the transport of goods and people. The cost-benefit analysis⁴ conducted by our client TELT on the Turin-Lyon line estimates that the construction of the new line will lead to an **annual reduction in greenhouse gas emissions** of around 3 million tCO_{2eq}, equal to those produced by a city of 300,000 inhabitants. This achievement will be accomplished by the shift of the equivalent of about 1 million heavy vehicles from road transport to railway. Excavation work for the Saint Martin La Porte project began

in January 2015. At the end of 2020, production had reached about 80% and the project's completion is slated for the first half of 2022.

RELATED LINK

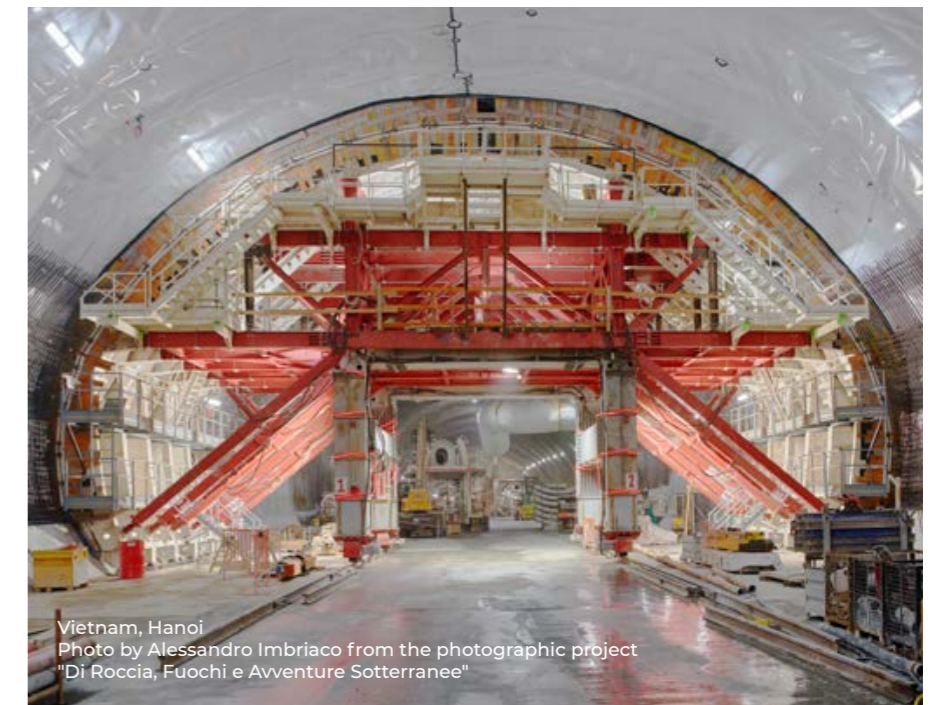


Ghella.com
Projects

METRO AND LIGHT RAIL

Our projects in the **metro and light rail** sector are designed to improve mobility infrastructure in highly populated cities like Sydney, Brisbane, Hanoi, Athens and Vancouver, hence contributing to reducing direct and indirect emissions related to the use of cars and improving the quality of life of the cities' residents.

The **Sydney Metro City & Southwest** project consists of 15.5 km of new underground twin tunnels, 40 metres below the seabed, and the construction of six stations for the new metro line, some of which in the City Business District, the beating heart of the economy of the Australian capital. Our client Sydney Metro has estimated that the work will bring a 71% increase in the number of journeys made in the morning rush-hour and a travel modal shift from car to subway of 20,000⁵ trips during rush hour by 2036, thus significantly reducing city congestion. Other benefits include the reduced overcrowding of trains and the quality of commuting offered to passengers. The project received several sustainability awards including the Environment and Sustainability Initiative of the Year at the New Civil Engineer (NCE) Tunnelling Festival 2019 for its sustainable management of uncontaminated excavation material, transported by barge rather



Vietnam, Hanoi
Photo by Alessandro Imbriaco from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

than by road and fully re-used in construction projects in the Sydney area. In 2020, the project obtained two important awards confirming its high quality and innovation levels: the Major Project of the Year at the International Tunnelling Association (ITA) Awards and the Tunnelling Project of the Year at the NCE Tunnelling Festival 2020. At the end of 2020, the Sydney Metro City and Southwest project was over 90% complete, as all the tunnels had been finished, some of the stations had been delivered to the client while

work was continuing on the other two sites, ahead of schedule.

Commenced in the second half of 2019, the **Cross River Rail** project is a light rail project in Brisbane, Australia. It includes the boring of 5.9 km of tunnels under the Brisbane River and the City Business District, the city's financial centre, the construction of four new stations and the upgrade of two existing stations. It is of fundamental importance to the city's transport system as it will build a second river underground



I nostri progetti della Trans European Network (TEN-T)



crossing, unblocking the current bottleneck for urban railway traffic. It will allow the running of 24 trains an hour in both directions with an estimated increase of nine thousand passengers a day by 2026 and 23 thousand passengers a day by 2036, for a reduction in private vehicles of 526,000 km in average daily distances. With respect to travel quality for the rail passengers, peak waiting times are expected to decrease by 24% and up to 29% by 2036⁶. The Cross River Rail worksite is fully operational. The two tunnel boring machines (TBMs) are in use and the boring stage should be completed by the end of 2021. At the end of 2020, the project was roughly 20% completed.

The **Pilot Light Line 3** of the **Hanoi Metro** is part of an important project funded by the Asian Development Bank (ADB) to encourage the country's economic growth and decongest the Vietnamese capital's traffic by creating a new integrated public transport system with eight metro lines to be completed by 2050. The new metro system has been designed to meet the need to align the city's transport infrastructure with its huge demographic growth of the last decades (the capital has a population of nearly eight million residents with an average age of 27). At present, around 90% of the transport modal share⁷ is held by private vehicles, mostly motorcycles, which will presumably be replaced by cars thanks to the steady growth in per capita income. Once it is fully operational, the metro will have a capacity of 200 thousand passengers a day and Line 3, also known as Vãn Mieu Line (Temple of Literature Line), will be the city's most used underground network. The project will contribute significantly

to reducing GHG emissions and ensuring better air quality, to the benefit of the residents' health and safety. In addition to the numerous environmental and economic advantages of this important infrastructure, the contractors will pool their technologies and technical expertise during the project's performance, involving local resources in the workforce. At the end of 2020, the project was around 25% complete (for the four stations). The tunnel boring activities using the TBMs are scheduled to start in 2021.

Once completed, the extension of the **Athens Metro** to Piraeus Harbour will serve an average of 132 thousand passengers per day. The new line will make it possible to travel directly from Athens International Airport to the harbour in 45 minutes. Our client Attiko Metro has estimated⁸ that there will be an average reduction of 23 thousand vehicles per day in that area for a daily reduction of about 120 tonnes of CO_{2eq}. In addition to the technical challenges posed by the different geological formations encountered during the excavations, significant archaeological finds were made during the works, allowing us to contribute to the discovery of important artefacts now preserved in the state archives. Some of these will be exhibited in the metro stations, making these into open subway museums for passers-by. Three of the six stations were opened to the public in July 2020 and are now in use. At the end of the year, more than 90% of the project had been completed.

In August 2020, the **Broadway Subway Project** in Vancouver, Canada, was started. This new line is an extension of the Millennium Line, which is part of the SkyTrain system,

and will cover 5.7 km running under and above ground through six new stations. The Broadway Corridor is the most densely populated area in British Columbia not yet served by a rapid transit system while its population continues to rise (expected increase of 57% by 2040). At present, 59% of the local transport is by road, creating bottlenecks for the freight transport which uses the same corridor. The Broadway Subway will serve between 143 thousand and 163 thousand passengers a day by 2030 and between 167 thousand and 191 thousand by 2045. It will make a significant contribution to reducing GHG emissions thanks to the shift from road to rail transit. Once complete, the Millennium Line will take 11 minutes, saving passengers 30 minutes a day. The new line will also replace the B-line fleet of diesel buses with the SkyTrain electric trains, generating additional reductions in greenhouse gas emissions.

WATER INFRASTRUCTURES

Our wastewater network tunnels, for the Matanza Riachuelo project in **Argentina**, the Central Interceptor project in **New Zealand** and the Median Collector project in Turin, **Italy**, are conceived to improve the living conditions of local communities and soften their environmental impact.

The **Matanza Riachuelo** Project is one of the most important water purification projects at international level. It will significantly reduce the pollution of Rio de la Plata, one of the world's most polluted rivers, and improve the quality of life of the local population. This project is part of the Matanza-Riachuelo Basin (MRB) Sustainable Development Project, funded by the World Bank, involving seven million local residents, of whom 10% live under the national poverty line⁹. The area where the worksite is located is mainly residential with very varying socio-demographic characteristics and also includes businesses, warehouses and commercial areas. As a result, the local communities' needs have been given priority in a strategy designed to manage all stakeholders' expectations. Work continued on the project in 2020 despite the Covid-19 pandemic as it is considered to be essential as per the Argentine Ministerial decree. The project is fundamental to improve the quality of life and environment of Buenos Aires. The two TBMs are currently being dismantled and the finishings of the main tunnels are underway before their delivery. At the end of 2020, the project was roughly 90% complete.

The **Central Interceptor** project was commenced in New Zealand in 2019 to bore the longest tunnel in this country with a length of

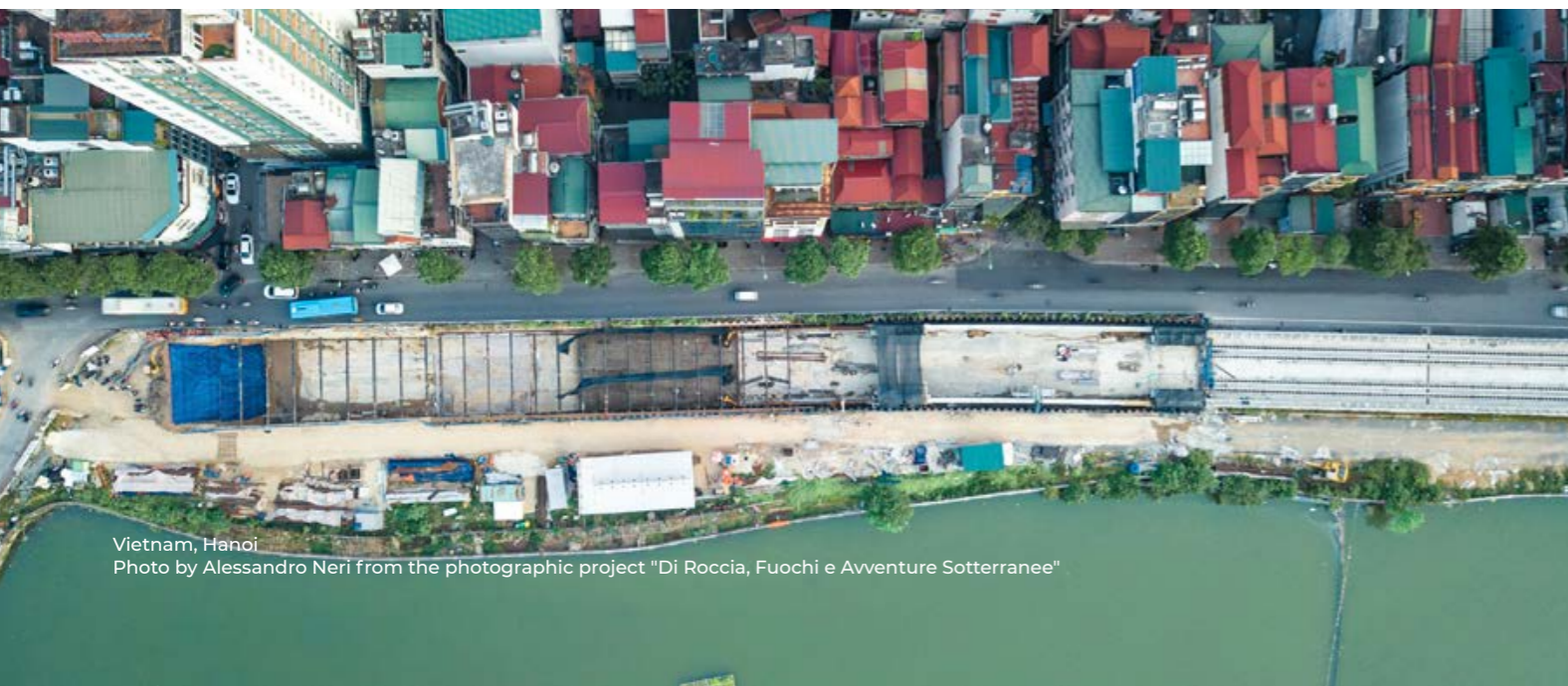
14.7 km. The tunnel will reduce Auckland's wastewater overflows due to stormwater into Waitematā Harbour and Manukau Harbour by 80% with the consequent significant improvement in the bay's environmental conditions and biodiversity. The new wastewater system will be sized to serve the city's fast growth over the next 30 years (its residents are expected to increase by one million). The project's completion is slated for the end of 2025. At 31 December 2020, approximately 15% of the works had been carried out.

Work on the **Turin Median Collector**, awarded in April 2019, comprises the design and development of the median wastewater network in the south-western area of Turin (Italy) and the rehabilitation of the existing southern system. The collector will become the new backbone, parallel to the current collector and necessary to avoid the overloading of Turin's wastewater

system. It will collect and store the first stormwater, i.e., those waters which, at the beginning of rainfall, are full of pollutants such as hydrocarbons and mineral oils. The new 14-km underground tunnel will benefit 50 municipalities in the northern area and 30 in the southern area by reducing the level of pollutants in the wastewater and overflows in the entire area served. The collector's executive designs are being finalised and the works are expected to take around five years.



New Zealand, Auckland
Central Interceptor



Vietnam, Hanoi
Photo by Alessandro Neri from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

Rating Infrastructure Sustainability (IS)

All our projects in Australia (Sydney Metro City and Southwest and Cross River Rail) and New Zealand (Central Interceptor) are rated using the Infrastructure Sustainability (IS) system of the **ISCA (Infrastructure Sustainability Council of Australia)**, a non-profit body focused on the sustainability of infrastructure projects. IS grades the sustainability of infrastructure projects during the work's planning, design, construction and operation. For example, the Central Interceptor contract has an As-Built target rating of Excellent, which it should achieve by the end of the project. The rating includes the definition of a base case, which comprises a calculation of the design's carbon footprint, that has to be improved to reach the score required by the client. The Sydney Metro

City and Southwest project currently has the highest IS score: in 2019, it obtained a 100.05/110 score, the highest ever assigned by the IS rating, with the "Leading" rating awarded to the John Holland CPB Ghella (GHCPBG) JV for the design of the TSE (Tunnel and Station Excavation) works.

The experience gained during these projects is an invaluable asset for Ghella, in a global context where the sustainability of works throughout their life cycle (including their development) is of increasing importance.





Australia, Brisbane
Cross River Rail

RENEWABLE ENERGIES

As well as working in the large public infrastructure sector, we are active in the **renewable energy** sector. We develop, build and operate mainly photovoltaic and hydroelectric renewable energy power plants in Italy, Central America and the Middle East.

In Italy, we have installed total power of 60 MW in proprietary **photovoltaic** power plants, producing about 88 GWh on average per year. In the United Arab Emirates, with the DEWA Phase III PV Solar Power Project, we have contributed to the construction of a 1,066 MW power plant with a construction, operation and maintenance contract

(EPC and O&M), for an average annual output of 2,000 GWh. The project included the installation of three million photovoltaic panels over about 20 square kilometres of desert areas.

The DEWA Phase III plant has been operational since July 2020 and we continue to provide O&M services.

We have built **hydroelectric** plants with total power of 186 MW, of which 141 MW in construction-only contracts in Costa Rica, Guatemala and the Dominican Republic and 45 MW in EPC and O&M contracts in Costa Rica.

Creation of shared value

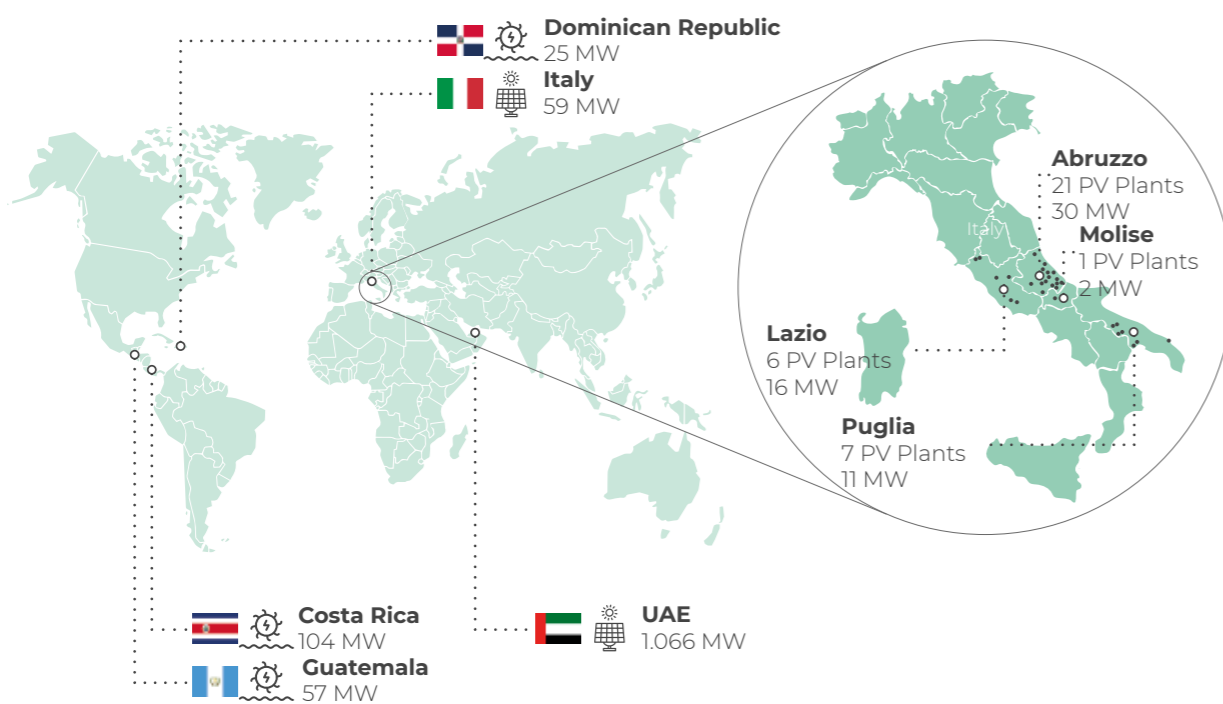
Our projects are designed to leave a **lasting legacy** to the population of the cities and areas where we operate, facilitating their transition to increasingly sustainable lifestyles.

As the company executing these works, we focus on the **quality** of their development, through technical

excellence and **innovation**, and on the reduction of the environmental and social impacts associated with the construction phase, in a context of value creation for the territory and local communities.

Our value chain is at the centre of a virtuous circle in which essential resources, such as personnel, raw materials or supplies contribute to the creation of **shared value**¹⁰, for the company and society through our processes. Hence, the creation of **economic value** for the company becomes a driver for social **well-**

being through the construction of durable infrastructures, the promotion of sustainable mobility, as well as the training of personnel and the positive impacts that we can indirectly generate for the social and environmental performance of our supply chain. Community engagement activities, the professional growth of the local workforce and the technology transfer between the different countries where we operate help to leave a lasting mark that outlives the construction phase of the work.



Renewables projects

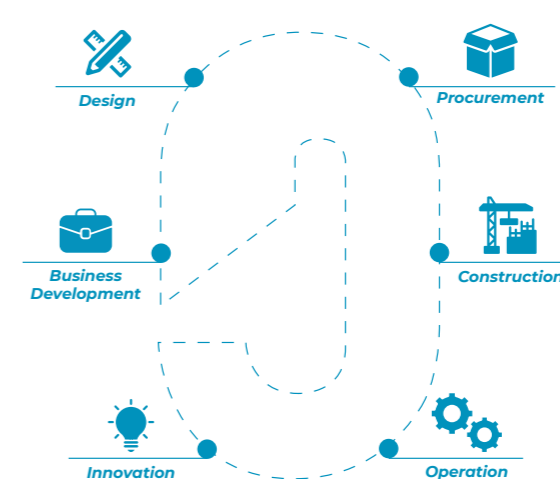


WHAT WE DEPEND ON

- Motivated staff
- Raw materials and Energy
- Lenders
- Suppliers and sub-contractors
- Clients
- Partners

Creating shared value

OUR "VALUE CHAIN"



THE VALUE WE CREATE

- Lasting and sustainable assets
- Sustainable mobility
- Renewable energies
- Skills and technology transfer
- Benefit for local communities
- Income creation



Stakeholder engagement and the materiality matrix

Decisions about the topics to be disclosed in our sustainability reports are the result of a **consultation** process, carried out in 2019, to understand how our corporate strategy, in terms of sustainability, responds to the **priorities** of key **stakeholders** and to take any potential

remedial actions. In line with the AA1000 Stakeholder Engagement Standard, we **mapped** the key players who engage with us, based on their ability to affect Ghella's objectives, impacts and performance, or be affected by them.

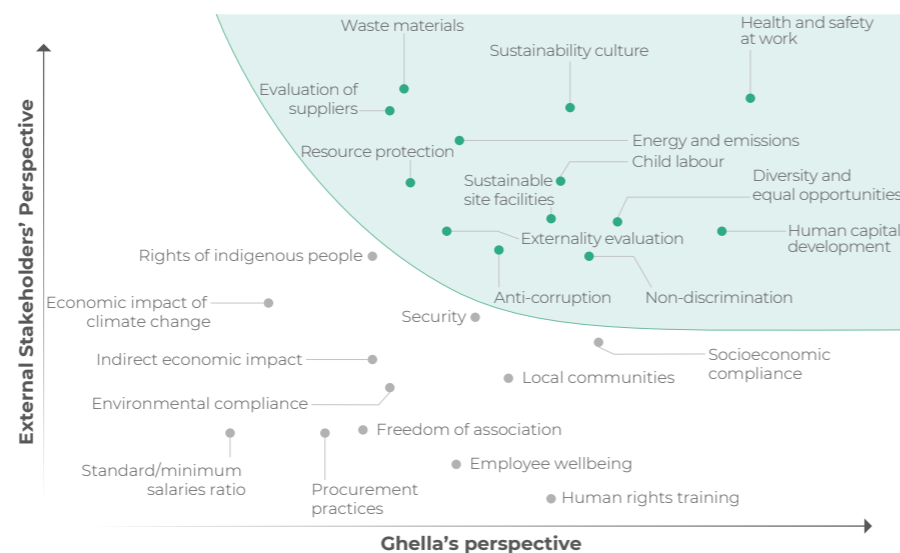


Representatives of the different groups of internal and external stakeholders were interviewed to define a set of material topics, i.e., those topics deemed particularly important for Ghella over a three-year period by the stakeholders, starting from a base of 29 proposed topics.

We will focus on these material topics in the coming years, and prioritise them in our sustainability plan, to satisfy the expectations and interests of our stakeholders. The "Occupational health and safety" topic was already the most material before the Covid-19

pandemic and continues to be an absolute priority for us in all aspects of our business.

We used the results to obtain our first **materiality matrix**, showing the material topics that, from both viewpoints, reflect the significant economic, environmental and social impacts for Ghella and substantially affect stakeholders' assessments and decisions.



Our objectives

With a view to stimulating the **continuous improvement** of our sustainability performance, we have defined a **sustainability strategy** with a related multi-year plan, aimed at structuring and harmonising

existing initiatives and best practices and planning future initiatives within a framework of measurable and monitored objectives. We intend to contribute to the achievement of the goals set by the United Nations 2030

Agenda for Sustainable Development (**SDGs**), embraced by governments, organisations and companies at a global scale, with specific actions aligned with such goals.

SUSTAINABLE DEVELOPMENT GOALS



The United Nations have approved the **Global Agenda for Sustainable Development** in 2015 and the related (Sustainable Development Goals - SDGs)

SUSTAINABILITY PLAN

Our "**Building a better World' corporate sustainability plan**"¹¹ for the 2019-2022 period provides a unique framework for the definition of our sustainability objectives and represents a tool to facilitate continuous improvement through the analysis and **monitoring of our performance**. The plan represents our systematic approach to the integration of sustainability objectives into business processes by increasing the sense of shared responsibility and motivation of the functions involved. Since it is shared externally, it communicates the company's strategic direction to our stakeholders, increasing our competitive edge in national and international calls for tenders.

to the environment, we consider the impacts of our works, generated both locally and at global level, such as direct and indirect GHG emissions.

Our commitments in the **three spheres - social, economic and environmental** - were in turn translated into **actions** aimed at achieving **eight macro-objectives**. The topics embraced in the objectives were defined through an analysis and integration of internationally recognised standards, such as ISO 26000 "Guide to social responsibility" and the SDGs, and reflect the values and guidelines expressed in company policies while being aligned to our stakeholders' expectations.

The sustainability plan translates our corporate vision into specific social, economic and environmental **commitments** to our people (in terms of their safety and well-being) and our communities. Our focus on value creation is expressed through our commitment to quality, innovation and local economic growth, while with respect

We are **revisiting** our sustainability plan to define **quantitative targets** for the material topics to be achieved by 2030. We intend to improve internal accountability at corporate and worksite level and to ensure the implementation and oversight of the related activities.



PEOPLE

«Contribute to a fair and inclusive society by operating at the highest standards of **Integrity** and guaranteeing the **Safety** and **Wellbeing** of all our Stakeholders, including the communities who benefit from the infrastructure we help to create.»



VALUE

«Contribute to the economic growth of the areas where we operate by generating **Value** and creating opportunities, thanks to the high levels of **Quality** and **Innovation** that we bring into our projects.»



ENVIRONMENT

«Strive to integrate our built projects in the existing **Local Ecosystem** and to be active participants in the global effort to mitigate **Climate Change**»

RELATED LINK



Sustainability Plan



OBJECTIVES



1. Consolidate a compliance and sustainability **Governance** at the corporate level

SDGS



2. Promote the development of **Human Capital** and people **Well-being**



3. Ensure continuous improvement of occupational **Health and Safety** performance



4. Reduce local **Environment Impacts**



5. Increase **Energy Efficiency** and reduce **Greenhouse Gas** emissions



6. Promote a **Sustainable Supply Chain** and the efficient use of resources



7. Encourage **Local Development** and dialogue with **Communities**



8. Promote **Excellence and Innovation** in our reference market



External performance assessment

We have taken on the challenge of increasingly integrating sustainability into our business processes and our commitment was recognised in 2020 by international rating systems applied at corporate level.

CSR standards, including the United Nations Global Compact, the Global Reporting Initiative (GRI) and ISO 26000. The results of the EcoVadis assessment are used by over 65,000 companies.

creation" chapter describes the details of this transaction.

In 2019, we obtained the **highest score** (100/100) in the external audit performed by **Achilles**, a global platform that certifies supplier performances and risk levels. We confirmed this score during the **update** performed at the start of 2021. The Achilles certification covers 18 sustainability topics across the following four areas:

- Health and Safety
- Environment
- Quality
- Corporate Social Responsibility (CSR)



We have achieved the **Platinum rating level** of the **EcoVadis** platform, an independent global rating provider on corporate social responsibility (CSR), which places the company at the top of the ranking compared to the industry average. This recognition represents considerable progress from the Gold rating achieved in 2019 and the Bronze rating assigned in 2018 and puts Ghella in the top 1% of all the companies assessed for their corporate social responsibility. Ecovadis assesses suppliers operating in 160 countries and 190 purchasing categories based on 21 CSR criteria, grouped into four main themes (environment, labour and human rights, ethics and sustainable procurement) using a methodology that incorporates various international

The Ecovadis rating was selected as one of the covenants in 2020 to monitor Ghella's sustainability performance for the purposes of its green loan from BNL Gruppo BNP Paribas guaranteed by SACE. A dedicated section in the "Value

Profile



LUCA PAOLETTI
Country Manager Norway

Tell us about your professional experience and what led you to Ghella

I grew up with my grandfather, a kiln man who worked local clay and produced bricks by hand in the kilns of my village in Umbria, and my father, a surveyor who designed buildings. I think that is why I chose civil engineering at university and then went on to work as a consultant for a few engineering firms before moving on to the large public works sector.

About fifteen years ago, I joined Ghella working in its technical office on a worksite in Haiti to then move around the world gaining greater responsibility.

Can you briefly describe your role?

I am currently the country manager for Norway. I am involved in commercial development adapting Ghella's philosophy and interests

to the local social and cultural context. This involves considering differences in legislation (contracts, authorisations and permits), which continues to evolve, and to incorporate sustainability issues, language barriers and other issues. I am also responsible for identifying new opportunities and potential partners (using guidance from headquarters) for both the Follo Line contract and ongoing calls for tenders. My job is to include sustainability solutions in decision-making processes, starting from a project's design to the worksite activities, in line with the company's sustainability plan and the project plans.

What do clients ask for in sustainability terms, taking for example contracts that you have managed?

Clients' sustainability requests depend on their local context. For example, in the Dominican Republic or Vietnam, this might relate to the most important local issues such as the reduction of drinking water consumption or the introduction of measures to combat discrimination and promote equal opportunities. In countries like Norway where sustainability is a more integral part of its culture and local legislative framework, a client's expectations about a project's environmental and social performance are more challenging and extensive. For example, we were asked to obtain EPDs (Environmental Product Declarations) from the suppliers of the main construction materials for our Follo Line worksite as confirmation that our environmental responsibility commitment extends to our supply

chain. This is a certification based on the study of a product's impacts over its life cycle.

What do you understand by "being sustainable"?

To me, it means making an active contribution to the development of an area's economic well-being and a community's growth. We can achieve this by including sustainable actions in all the worksite's various processes and roles and by involving the local community, which may include the universities and schools, to communicate our best practices applied at all our worksites around the world. For example, on 1 March 2018, I took part in a conference on sustainable design organised by the Department of Italian Studies of the Hanoi University in Vietnam, where I worked for around four years on the metro worksite. I presented our sustainability policies, best practices and innovative construction techniques that we deploy on our projects.

What is the most stimulating aspect of your job?

Definitely the awareness that I am part of a community focused on developing a better world for future generations in economic, social and environmental terms. Each new country and worksite also offer me the possibility to embrace new cultures and meet new people and this is another very positive aspect.



Vietnam, Hanoi
Photo by Francesco Neri from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

Ethics and integrity

Code of Ethics

Our **code of ethics** defines the values, commitments and ethical-social responsibilities that all those who work in the name and on behalf of Ghella are required to assume when carrying out their business activities. It expresses the ethical and conduct principles that represent us and that all those who work to achieve the company's objectives are required to comply with.

We made significant changes to our code in 2020 to standardise it for the entire group and reflect

the international and multi-cultural environment in which we operate. It embodies our business model hinging on shared values, which underpin our sustainability plan, and the most recent legislation.

The new code of ethics, which can be consulted on our website Ghella.com, is adopted by all group companies and all employees are periodically provided with multi-language e-learning **training courses** on its content.

Organisational and management model

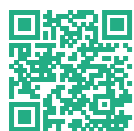
PURSUANT TO ITALIAN LEGISLATIVE DECREE 231/01

Ghella has an **organisational, management and control model** aimed at preventing the risk that the predicate crimes pursuant to Legislative decree no. 231/2001 could be committed. The latter provides for the administrative responsibility of companies for criminal offences committed in pursuing their interests, punishable with fines and bans. These crimes include corruption, environmental and occupational safety crimes, crimes against industry and trade and anti-

competitive practices, crimes against the individual (human rights and work practices), crimes of terrorism financing and transnational crimes.

The supervisory body, which is an independent control body, supervises the working of, and compliance with the model and makes proposals for its updating. It also promotes suitable communication and training initiatives aimed at raising awareness of the model with all employees.

RELATED LINK



Ghella.com
Code of Ethics



Ghella.com
Ethics and Compliance

Anti-corruption



To cope with the potential risks that corruption may have on the group's business, in 2019, Ghella and its subsidiaries adopted **anti-corruption guidelines** with a system of rules and checks to be applied in their relations with stakeholders. These guidelines set out the measures to be taken, in compliance with the principles expressed by Transparency International and with the main international standards and best practices, and the checks to be carried out, including the performance of due

diligences on third parties to assess their integrity and reputation.

The compliance and sustainability function provides specialist support to ensure the implementation of the anti-corruption guidelines, which can be found on our website Ghella.com. All the group companies have adopted these guidelines and provide their employees with regular multi-lingual e-learning **training courses** on their content.

Whistleblowing

We have a **whistleblowing** policy that has been adopted by all group companies. It establishes the methods for making confidential reports about violations or suspected violations of the code of ethics, policies, company guidelines, crimes envisaged by the Model 231 or other irregularities in the application of internal procedures using the channels made available to the employees and external stakeholders. We also set up a guided portal in 2020 as the preferred

conduit to be used to make reports, guaranteeing the confidentiality of the whistleblower's identity.

Our **whistleblowing** policy can be consulted on our website Ghella.com. We are also preparing a multi-lingual e-learning **training course** on the policy's content and the use of the portal to be provided regularly to all employees.

No reports were received in 2020.

Human rights



Dignity and respect for people are pillars of our corporate culture: we are committed to operating in accordance with international best practices¹² in all our activities around the world, in order to prevent any human rights violations. This requires not only a code of ethics shared by all employees and collaborators, but also a set of rules, principles and controls aimed at ensuring integrity, transparency and strict adherence to the laws. Many of our corporate policies include principles relating

to the protection of human rights. These are applied to both internal stakeholders and the supply chain, through the qualification of suppliers and the sharing of company policies and contractual clauses, and are available on our website Ghella.com.

In particular, the human rights guidelines provide our employees, suppliers and partners with a tool to identify and prevent potential human rights violations.



People

We believe in our **people** and we **value** them. We are committed to providing the best opportunities for individual **development** and to protecting the rights and needs of our employees. We are constantly working to ensure the best occupational **health and safety** standards for our employees and the subcontractors working on our worksites. We monitor our **supply chain** to ensure that **human rights** principles are respected, and suitable **working conditions** are guaranteed.

We follow the highest ethical and behavioural standards in our work. We offer proactive **leadership** and promote trust, transparency and collaboration to develop **teamwork**. We favour the creation of an optimal work environment to achieve excellent results.

Our focus on social inclusiveness is not limited to the group companies: we listen to the expectations of the **local communities** that will benefit from the public works we help to create.

We are committed to leaving a positive legacy with our projects and to protecting and promoting the well-being, human capital and environmental, historical and cultural heritage of the territories where we work.

We have stepped up our focus on people and their health as a result of the global pandemic which broke out in early 2020. As a company and as parents and responsible people united by our work, we have contributed with dedicated measures to curbing the Covid-19 emergency.

Health and Safety



The health and safety of our staff is of utmost importance to us: no deadline is more important than ensuring that our people work in a safe manner and that their health in the workplace is guaranteed.

The correct management of these issues has always been at the centre of our modus operandi and we formalised this approach in 2010 by adopting an **integrated management system** whose component relating to **occupational health and safety** is certified in accordance with the international standard **ISO 45001: 2018**. We apply the **risk-based thinking** approach to identify and assess all risks present in the workplace and that could impact our stakeholders. This approach allows us to **continuously improve** our performance, by taking into account the context and the requirements of our stakeholders, including our partners, and identifying the **risks and opportunities** that need to be managed to ensure the highest occupational health and safety standards.

When developing our projects, we manage potential health and safety risks with competence and experience, mitigating them through profitable collaborations with specialised partners.

Our operations expose workers to risks that could have serious impacts on their health and safety, in terms of injuries and occupational diseases. We have defined the tools necessary to identify all the dangers present in the workplace and assess the risks associated with them, and

have defined the prevention and protection measures to eliminate or minimise them. To this end, we use the **know-how** developed in our many years of activity, taking into account **lessons learned**. **Knowledge-sharing** is pursued within the company as a tool to analyse incidents, by researching their root causes and defining corrective and improvement actions. Through risk assessment activities, we identify **education** and training requirements and **health surveillance** measures for all workers exposed to health risks.

The **engagement** of our stakeholders, such as subcontractors, clients or third parties, in the risk assessment process is of utmost importance: everyone can and must report inappropriate/illegal behaviour, dangerous situations or violations of the health and safety principles, or suggest improvement actions. For this reason, we have activated dedicated **communication** channels, including through employee representatives and observation cards, so that people can report events without risk of repercussions, in line with our whistleblowing policy. Worker representatives are also involved in the analysis of incidents and are informed on the progress of injuries and health surveillance, as well as on health and safety information and training programmes.

Riachuelo's response to Covid-19: a risk analysis to protect employee health

The Riachuelo worksite rolled out measures to prevent, mitigate and contain the Covid-19 infection risk. These measures were of an **organisational** nature, with the introduction of emergency management plans, questionnaires, protocols and instructions to transpose local regulations, and **physical** nature, such as the reduction of the number of people on each shift, social distancing, the provision of specific personal protective equipment, the measurement of body temperatures at the start and end of each working day, sanitisation of the work stations, the availability of company vehicles in place of public transport, the set-up of sanitisation points, training and serological tests.

In order to act even more incisively in minimising the spread of the virus within the worksite, a **mathematical model** was developed for the **early identification** of potential positive cases to avoid outbreaks. The model assesses each worker's **personal risk level** of becoming infected considering certain variables (tied to the

work place, travelling to and from the work place and leisure time) which are assigned a factor expressed as the worker's exposure to the risk in minutes. Workers with a potential **high personal risk level** are included in a **monitoring group** for weekly or twice-weekly serological tests depending on the pandemic's evolution. They also receive additional training on preventive measures.

The test results are monitored to calculate the infection rate at the worksite which is compared to that of Greater Buenos Aires. Analyses performed in 2020 show that the worksite's infection rate (the ratio of confirmed positive cases to the number of workers) was always **near zero**, which shows a much better epidemiological situation than that of Greater Buenos Aires.

This result demonstrated the mathematical model's effectiveness and the importance of assessing the risk to the health of the worksite's resources.



New Zealand, Auckland
Central Interceptor

Our **organisation** includes specialised and trained people who work to guarantee the best health and safety conditions for all workers involved in our activities, be they Ghella employees or those of our partners. In particular, our technical staff have the necessary expertise to design the safety features of our worksites in accordance with the relevant European and international regulations and so ensure the most suitable and innovative safety measures are implemented. Our system allows for ongoing oversight of operations, thanks to a **hierarchy of controls** defined and implemented through a waterfall mechanism by all the parties involved in the activities, starting from senior management down to the operational personnel.

Training is a fundamental tool for us to ensure the development of expertise and increase awareness of individual responsibilities in relation to health and safety. It also encourages the workers' engagement in safety issues. Training is carried out in different forms (such as induction, on-the-job training, internships, e-learning,

daily or weekly toolbox talks, job safety analysis, etc.) depending on the needs and objectives set and taking into account the context and local legislation. Due to the Covid-19 emergency, we stepped up health and safety training, information and awareness-raising initiatives during 2020, using video conferences, e-learning, notices and infographics published on the intranet. We also affixed special posters on the correct measures to be adopted to combat Covid-19.

We identified training requirements by analysing risk assessments and monitoring each employee individually to identify their specific needs. Training provided to each employee in 2020 mostly focused on the following topics:

-  Covid-19 risk management and related prevention measures;

 Reference legislation;
-  Mandatory training required by laws in force in each location;

 Emergency management;
-  The health and safety and emergency organisational structure;

 First aid and fire-fighting
-  Company management system;

 Other training required by current legislation in the specific location;
-  Assessment of health and safety risks associated with business activities and in particular those connected with individual worker tasks;



Italy, Brenner
Photo by Andrea Bortto from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

In addition to defining and implementing a health protocol, we rolled out awareness campaigns on the importance of looking after yourself by adopting a correct lifestyle to promote the health of our workers.

Issues related to healthcare gained importance in 2020 due to the pandemic. The emergency made it necessary to promptly adopt restrictive measures to curb the spread of the virus. We set up a crisis committee to be in charge of identifying and promoting the most effective containment strategies, which were included in the internal Covid-19 risk management plan. The committee updated these strategies regularly in line with the alarm levels communicated by the government and scientific research bodies. The measures activated to date include:

- an initial stage where we closed our offices, transitioning to remote working, and temporarily shuttered production activities in the countries worst affected by Covid-19, like Italy;
- a second stage of partial co-existence with the virus, characterised by an action plan comprising prevention and protection measures, organisational measures and specific measures to prevent outbreaks both at the head office and production units.

Ghella took out a special insurance policy (#andràtuttobene) for its Rome office personnel as Italy has

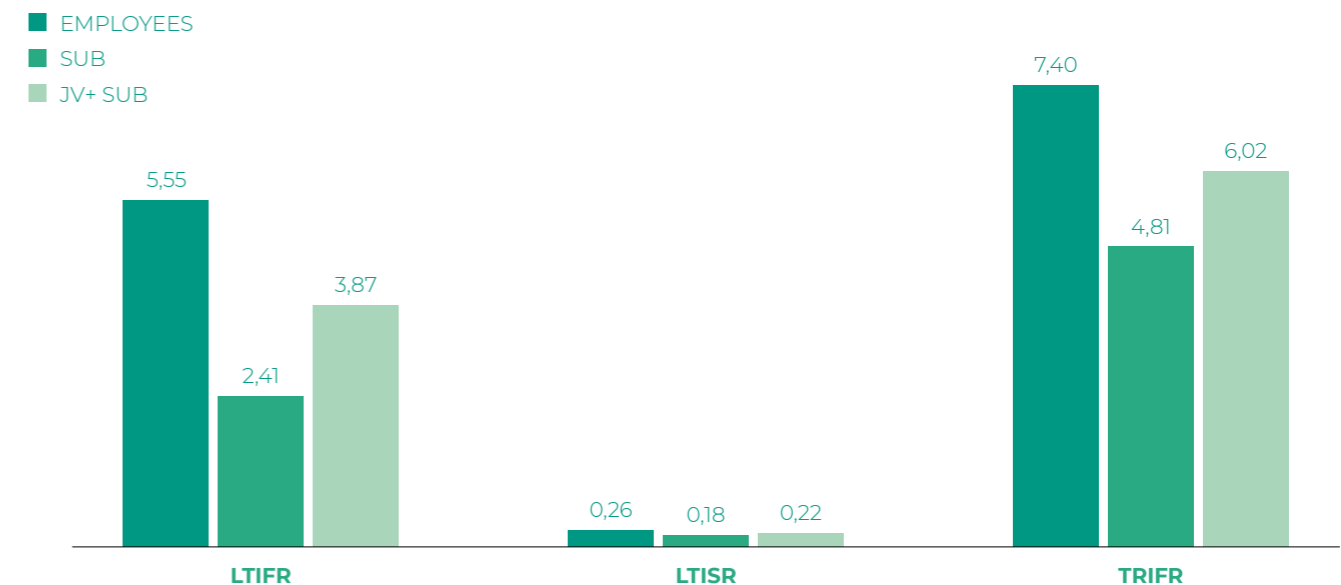
been one of the countries most affected by the pandemic. The insurance policy provides employees who contract Covid-19 with a daily hospitalisation allowance, 24-hour assistance during hospitalisation and post-hospitalisation assistance.

We have also contributed to the general well-being by making two donations to the Lazzaro Spallanzani National Institute for Infectious Diseases for scientific research. This Rome-based hospital was the first to isolate the virus and has hosted and treated hundreds of patients affected by Covid-19.

We monitor injuries by analysing them, in order to identify improvement actions aimed at preventing future occurrences and to spread a culture of **health and safety** among our people and all the stakeholders involved in our activities.

We are committed to achieving our primary health and safety objective of **zero harm** through training and engagement initiatives, aimed at encouraging the **active participation** of everyone.

The injury indices (frequency rate - LTIFR¹³, severity rate - LTISR¹⁴ and total frequency rate - TRIFR¹⁵) for 2020 for the production units included in this report's scope are presented below.

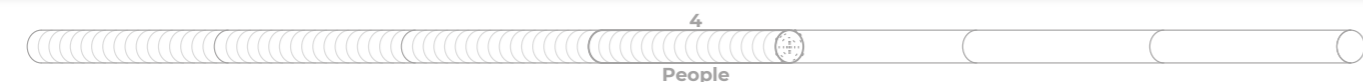


PU rate trends in 2020 by employees and subcontractors

STEPtember: moving together for a good cause

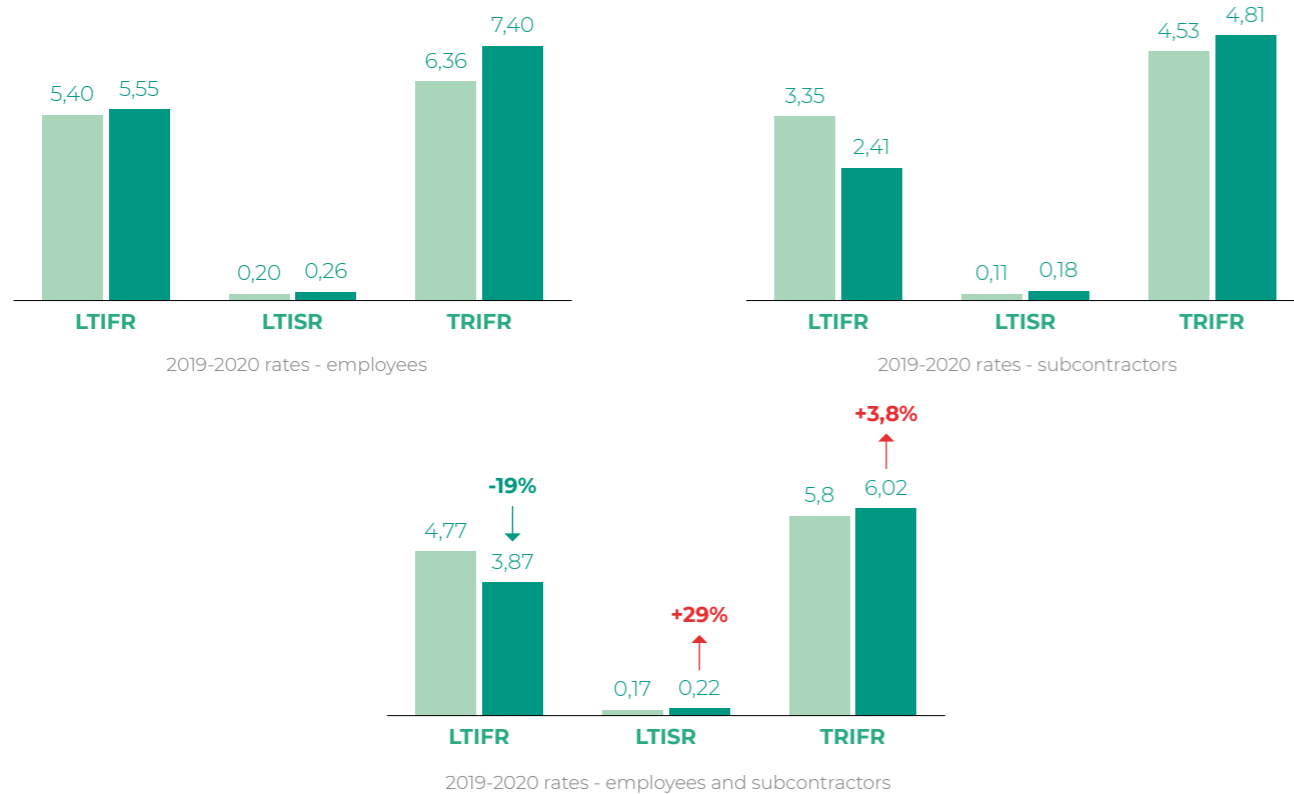
In 2020, Ghella Pty took part in the **fundraising** campaign **STEPtember**, which involves thousands of Australians every year who take on the challenge of doing 10,000 steps a day for 28 days to raise funds for **cerebral palsy**, the most frequent cause of disability in small children. The funds are used for **research, treatments** and the **services** provided to people with this disease. At the same time, the initiative fosters the **well-being** of the participants and **teamwork**: organisations that have taken part in previous events have noted an average 29% improvement in team spirit, 19% in perceived well-being and 97% satisfaction rate with the experience.

Ghella Pty's contribution was greatly appreciated by **Cerebral Palsy Alliance**. Its 39 participants did 11,665,169 steps and raised AUD8,038 (around €5,000). The Sydney Metro City and Southwest worksite also promoted and enthusiastically took on the challenge with more than 70 employees of the JHCPBG joint venture participating in the event.



A comparison of the rates calculated for the in-scope companies in 2020 and 2019 shows that all three (LTIFR, LTISR and TRIFR) increased slightly for the company's employees, while the LTISR and TRIFR rates performed

similarly for subcontractors' employees but decreased marginally for the LTIFR rate. Overall, the LTIFR decreased by 19%, the LTISR increased by 29% and the TRIFR grew an immaterial 3.8%.



Although we did not achieve our zero harm objective in 2020, our performance in this respect did not change significantly and our results were in line with the previous year.

2019	Hours worked	LTI ¹⁶	MTC ¹⁷ + RWC ¹⁸	Recordable injury rate	Severe injuries	Injury severity rate
Employees	11,478,268	62	11	73	2	0.17
Subcontractors	5,071,940	17	6	23	0	0

Data related to 2019

2020	Hours worked	LTI	MTC + RWC	Recordable injury rate	Severe injuries	Injury severity rate
Employees	6,483,709	36	12	48	0	0
Subcontractors	7,478,032	18	18	36	1	0.13

Data related to 2020

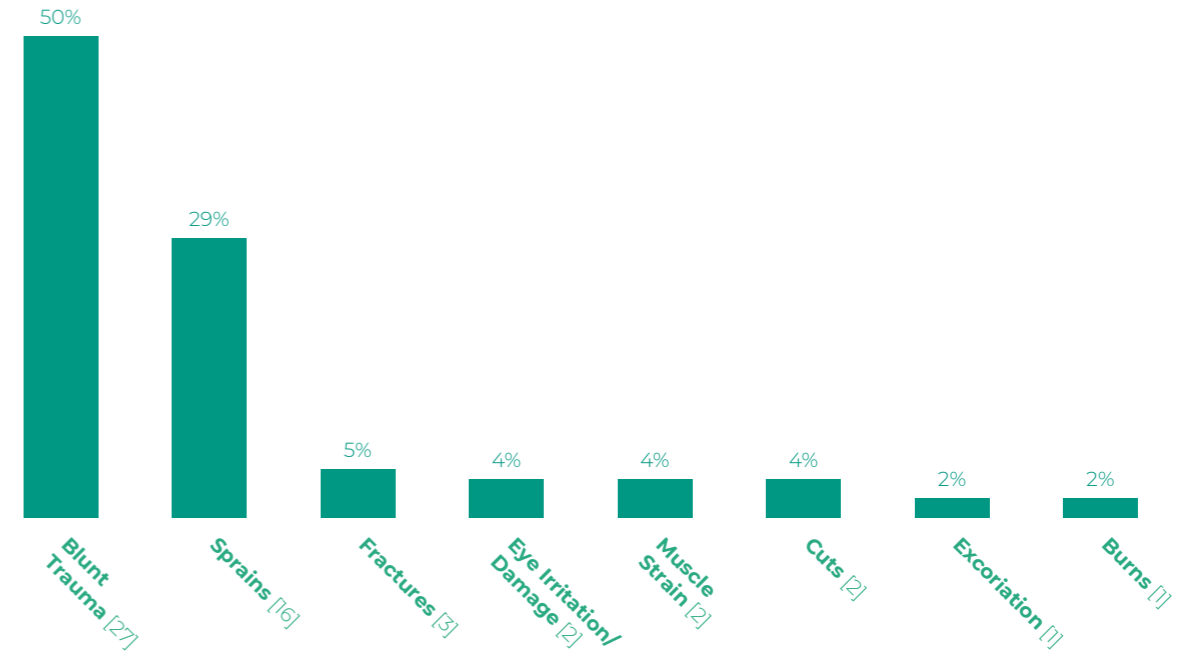
No fatal injuries were recorded in 2020. There was one severe injury for a non-employee leading to a severity rate of 0.13¹⁹. The severity rate for employees is zero. The severe injury was incurred by a worker while performing profiling activities inside a well using a pneumatic hammer. Due to a failure of a component of the hammer, the worker was hit on the face and although they were wearing all

the prescribed safety devices, the worker injured their face fracturing their nose. The investigation into the accident revealed that it was caused by inadequate control of the work equipment in use and excess confidence by the worker. All the measures necessary to avoid a repetition of this accident have been identified and implemented, including daily checks of the work equipment and

components, a new training course on the correct use of work equipment and checks and maintenance of such equipment.

Given the nature of the company's business and based on the risk assessments carried out in the various production units, the work hazards that constitute a risk of

high-consequence work-related injury are mainly physical and related to organisation of the work. The most frequent causes of injuries can be traced back to the incorrect handling of loads and use of equipment and tripping or slipping, which have mainly caused damage from sprains and blunt trauma.



Analysis of damages caused by injuries in 2020

Raising awareness about mental health at the Central Interceptor worksite

The **Central Interceptor** worksite in New Zealand focused on raising awareness about mental health throughout 2020 and renewed its commitment to preventing and supporting this worthy cause.

During **Mental Health Awareness Month** in September, the Ghella Abergeldie JV took part in the "Fly the Flag" initiative organised by **Mates in Construction NZ (MIC)**. The joint venture is one of the founding partners of this organisation which provides worksite workers with training and assistance to those in need. On **World Suicide Prevention Day**, MIC flew the association's flag showing its helpline number at the various worksites.

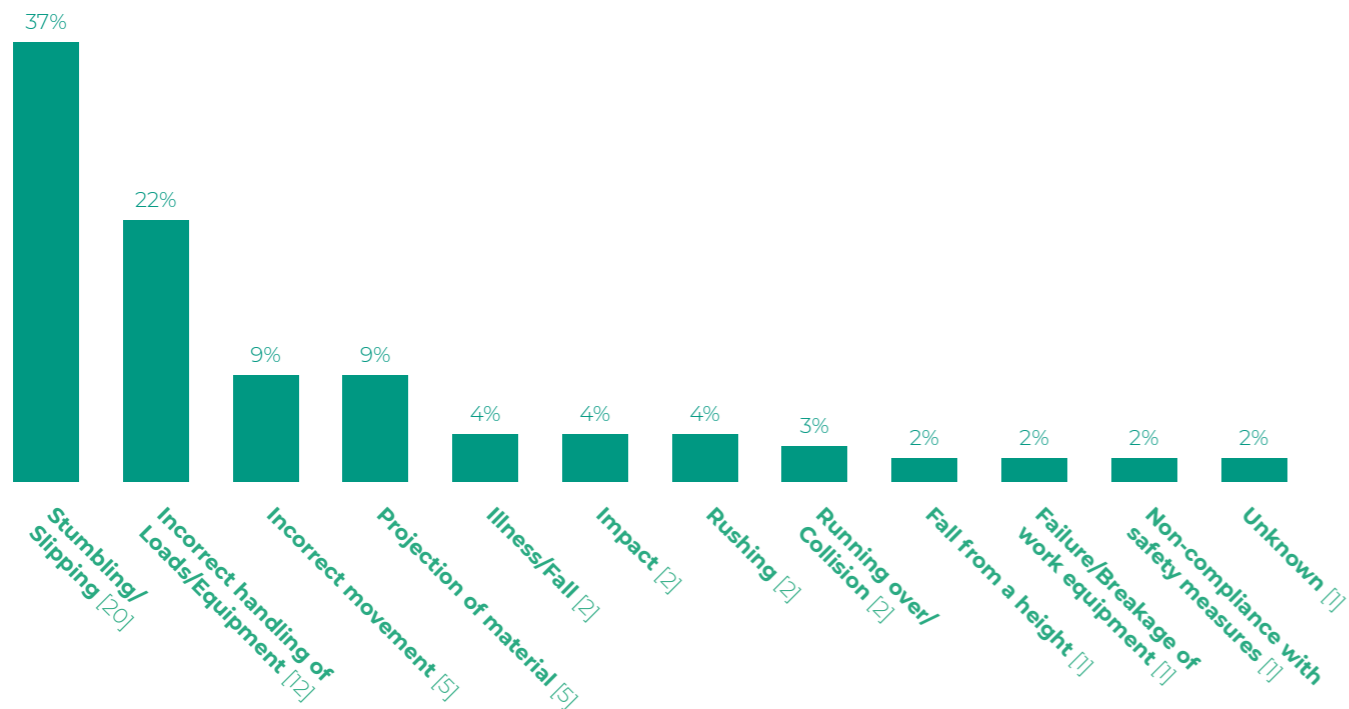
During the same week, a staff member, Francis Williams, participated in TVNZ1's popular **Breakfast television programme** with Richie Hepi of MIC to talk about mental health and the preventive measures carried out by Mates. The issue was concurrently discussed at the worksite during the **toolbox talks**, which are informal meetings held at the start of each shift. Workers were encouraged to nominate their colleagues for **Random Act of Kindness Awards**.

Finally, 50 members of the joint venture's workforce and their families took part in the **2020 Round the Bays** fun run, involving more than 34,000 people in Auckland to raise funds for the **Mental Health Foundation** and in this way show support for Kiwis with mental health problems.



New Zealand, Auckland
Central Interceptor





Analysis of injury causes in 2020

We have recorded a low number of high-consequence work-related injuries thanks to the **prevention, protection and improvement initiatives** put in place, such as continuous training and awareness campaigns to increase workers' engagement, incentives and awards, specific safety procedures, behaviour based safety programmes and fatigue management, verification and guided support on the correct behaviour to be implemented and choice of the most advanced individual and collective protective equipment. **Continuous monitoring** of the performance indicators that we have identified (i.e., accidents and

near misses, inspections, non-conformities, audits and lessons learned) and risk assessments allow us to carry out targeted controls by focusing attention on the most sensitive areas.

Our commitment to the **continuous improvement** of the company's safety performance is expressed through specific actions and targets contained in our **corporate sustainability plan**, in particular in objective 3: "Ensure continuous improvement of occupational Health and Safety performance".

Awareness raising and fundraising for oncology

During the year, several projects were dedicated to **cancer prevention** and research at both corporate and worksite level. Promoting healthy lifestyles among employees is one of the many ways in which Ghella invests in people's well-being, thus pursuing its corporate sustainability goals, especially in a year like 2020 in which resources and attention have been focused on just one aspect of health.

On World Cancer Day in February, **Ghella's head offices** organised a lecture by Professor Alessandro Vitale, a biologist and science communicator, on cancer prevention for men and women together with **Fondazione Umberto Veronesi**.

During **Breast Cancer Awareness Month** in October, the **Central Interceptor** worksite in New Zealand carried out various **awareness raising** and **fundraising** initiatives including cake sales and participation in the **Pink Ribbon Street Appeal** of the Breast Cancer Foundation of New Zealand (NZBCF). Worksite personnel took active part in the latter event, wearing pink helmets and collecting funds for breast cancer research, education, advocacy and patient support.

In November, 31 members of the Central Interceptor staff participated in the **Movember** (a combination of the words moustache and November) initiative promoted by an international organisation that encourages awareness of mental health, prostate cancer and testicle cancer. The worksite's team "**Stashes of Glory**" took on the challenge of growing a moustache to raise funds as well as to create a platform for **dialogue** about men's mental health and well-being and to encourage regular check-ups.

The CBGU joint venture of the **Cross River Rail** worksite in Brisbane began a **partnership** with the **Leukaemia Foundation of Australia** in 2020. It set itself the goal of raising AUD100,000 (around €63,000). The joint venture's staff took part in initiatives like **Shave for a Cure**, a **fundraiser** where people who do not have cancer shave their heads to "normalise" the experience for people who undergo chemotherapy. The foundation's aim is to eliminate onco-hematological cases in Australia by 2035. The team has already raised AUD20,000 (about €13,000) in just a year.

Profile



PAM COSTA
HR Manager, Ghella PTY, Australia

Tell us about your career path and what led you to Ghella

I have worked in Human Resources across multiple industries and countries for the last 15 years and I really love what I do. I moved to Australia around eight years ago, to explore a new culture, new ways of doing things and to continue growing personally. I joined Ghella two years ago after being contacted directly by an Italian recruiter. I was interested in working in the infrastructure sector and contributing to the construction of works projected for the future. I consider myself an innovator and I immediately liked the idea of working for a company whose objective is to leave a better world to the next generations. So, after interviews with managers in Australia and Italy, I accepted the job. As the saying goes, all roads lead to Rome, even from Sydney!

Can you briefly describe your role?

As the country HR manager, I oversee all the sector's activities such as, for example, ensuring the availability of qualified human capital and promoting strong interpersonal relationships across the business. I plan and direct all human resource initiatives, such as recruitment, remuneration, benefits, training, and performance management. I also manage strategic projects, for example, to develop and strengthen objectives and policies. I collaborate with other department managers and joint venture counterparts to establish and deliver human

resources objectives in accordance with organisational goals and federal, state and local legal requirements. Together we oversee staff operations in projects, training programmes, ensure compliance, and facilitate performance management.

What was the greatest challenge you faced in your job during the Covid-19 emergency?

Having to deal with the practical issues of rostering and enabling our teams to remain Covid-safe while in the office and the worksites was a big challenge at the beginning, however we found the right possible and feasible balance in this unprecedented situation. Everyone was highly collaborative, and we effectively experienced the teamwork spirit in action. I believe the ability to react quickly to future outbreaks and scale down activity within the worksites has become crucial for maintaining smooth and efficient operations. Also, with information from governments and health authorities continually changing, we needed to communicate with our staff across different locations efficiently and quickly. I am proud of our achievements in this respect at both corporate and project level. Lastly, in the last few years, the awareness raising about mental health and support provided proved their importance in this difficult period. There is a big focus in creating psychological safety so that people feel really safe coming to work, whether that is from a Covid perspective, a mental health perspective, or an inclusion perspective.

Can you describe a HR initiative undertaken by your team in 2020 that you are particularly proud of?

Companies in our sector are persistently among the most male-dominated worldwide, and we believe this should change. We are committed to achieving gender equality in the workplace and we are making progress in many ways. We are very proud to currently have a 30% female participation across our projects and corporate offices in Ghella Australia (Ghella Pty) compared to the national average of 12%. We have taken a big step forward in launching a new parental leave policy with favourable paid leave conditions

for our staff upon the birth of their child. We provide 13 weeks of full salary compared to the 18 weeks of paid leave which is paid at the national minimum wage under the current Australian Government Parental Leave Pay Scheme, the local legislative framework. This means we can support and protect our employees around the time of childbirth or adoption. Ghella also offers paid time off at full salary during "Dad Pay", the two weeks of leave granted to the partners of employees who are having or adopting children which is paid at the national minimum wage under the local legislative framework. This year, some of our female engineers and professionals from various projects participated in the "Women in Tunnelling Conference" at The Australasian Tunnelling premier industry event held in Melbourne, confirming their active involvement and success, including in worksite roles traditionally held by men.

What is the most stimulating aspect of your job?

To champion positive change through HR innovation. The implementation of new ideas, methods, and technologies to better meet the ever-evolving requirements of the company and its workforce. I also really like the variety in HR. Day in, day out, we are juggling a whole range of spinning plates, constantly trying to make sure one doesn't drop. While at the same time, doing your best to support your company's biggest asset – your people. We are learners who are after new ways to solve old problems, facilitators who make others better, and value creators who help all stakeholders win. I find this incredibly stimulating.



Our People

For Ghella, people represent an essential element of our competitiveness and growth. We believe in our resources and through careful and conscious management we promote trust, transparency and collaboration. We favour the creation of an optimal work environment to achieve excellent results.

Men



95 % Of our male employees have a permanent contract

Women



Of our female employees have a permanent contract **94 %**

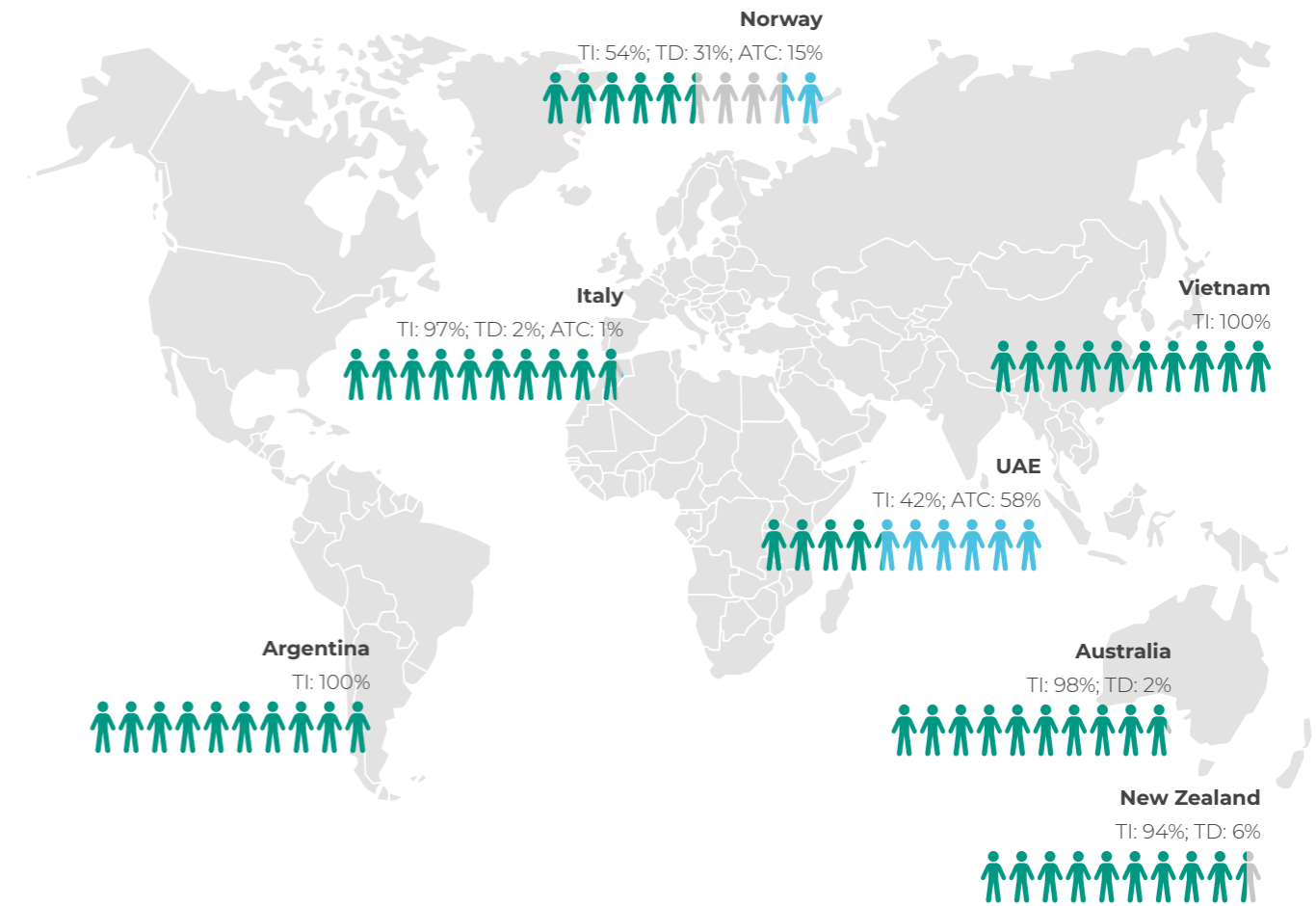
■ P ■ T ■ OCT

Employees by type of contract and gender
P=Permanent; T= Fixed term; OCT=Other contract types

The workforce included in the scope of this report includes a total of 3,822²⁰ employees, the majority of whom are hired with a permanent contract (94% of the women, +12% on 2019, and 95% of the men, +6% on 2019).

Given the nature of our business with production carried out at worksites in different locations around the world, workers are given employment contracts for the duration of the project. We promote the re-

employment of the same personnel for new contracts, when possible time-wise, to guarantee career continuity and retain our specialist know-how.



■ P ■ T ■ OCT

Employees by contract type and geographical area
P=Permanent; T= Fixed term; OCT=Other contract types

The various phases of the project may require different technical skills, therefore a degree of turnover during the life cycle of the worksite is inevitable, and this requires some limited use of fixed term or atypical contracts, as is the case for Norway and the United Arab Emirates where our worksites (Follo line and Dewa Phase III) are coming to an end. Reported data for Italy and Argentina include the offices in Rome and Buenos Aires, where employees are hired on a permanent basis. Like all elements of the company's integrated

management system, HR policies and procedures apply to all the activities of Ghella and its subsidiaries and associates, regardless of their geographic location.

During the construction phase, operational controls and monitoring of the significant aspects relating to human resources are carried out by our site HR teams, who report on them periodically to the client and headquarters.

This flow of information allows

us to **monitor the performance of human resources** at corporate level as well, both for the individual projects and at global level.

Our commitment to the **continuous improvement** of corporate performance in the HR area is expressed through specific actions and targets contained in our **corporate sustainability plan**. In particular, objective 2 of the plan is to "Promote the development of human capital and people well-being".

RELATED LINK



Ghella.com
People & Communities





Australia, Brisbane
Cross River Rail

DIVERSITY AND INCLUSION



“I don’t see myself as a woman on site, I’m an engineer. We need to get rid of the perception that women aren’t able to thrive on construction sites”

Beth Selwyn

Site Engineer, Central Interceptor

We are aware of the importance of **gender equality** in our sector, where the presence of women has been limited in the past. We work to ensure a work environment that removes all obstacles to the sector’s natural evolution towards an equitable distribution of gender among employees. For this reason, we have included principles relating to the protection of diversity and equal opportunities in our **integrated management system**, which includes the definition of specific policies and procedures, such as the “Policy for human resources management”, the “Policy for equality, diversity and inclusion (EDI)” and the “Human resources and organisation procedure”.

Our procedures ensure that employees are **hired** solely based on their merits and the applications received by the company, keeping track of the curriculum vitae analysed during the screening phase and excluding any sensitive information that could lead to discrimination from an evaluation perspective. To date, the company has workers of different nationalities, genders and ages, in a multicultural and stimulating working environment.

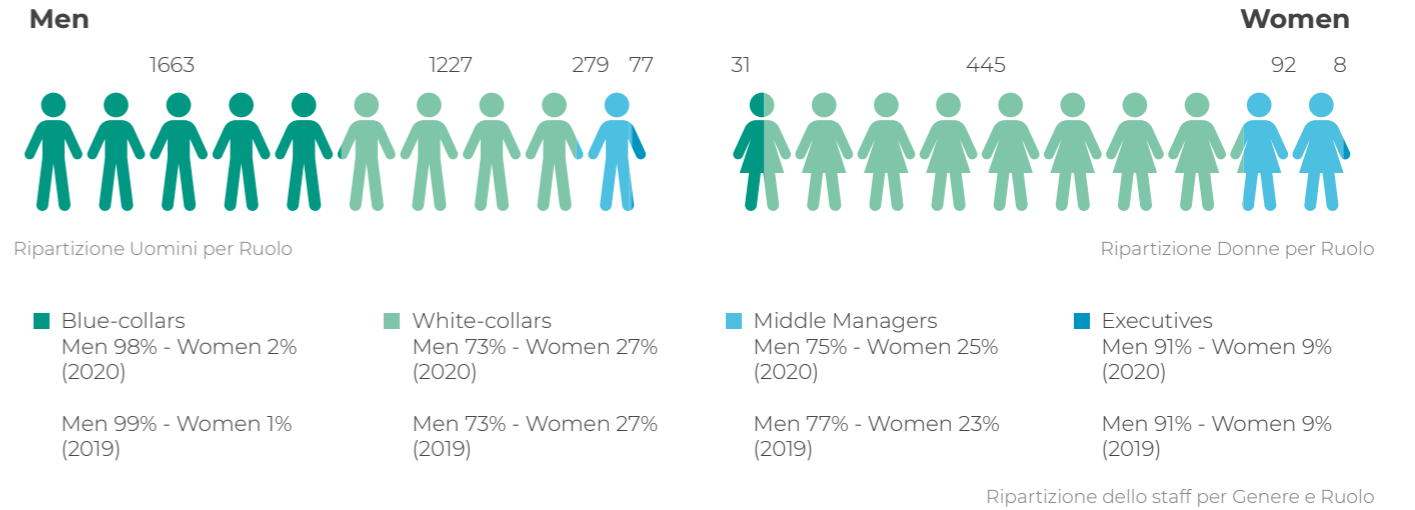
We condemn any kind of **discrimination** against our workers, guaranteeing equal opportunities to all employees, regardless of their sexual orientation, religious or cultural beliefs, political leanings or any other opinions. Our “Appropriate workplace behaviour policy” clearly defines the inappropriate attitudes condemned by the company and provides information on the reporting channels available to employees through the “Whistleblowing policy”.

Particular attention is given to parents of school age children, through measures aimed at facilitating work-family balance.

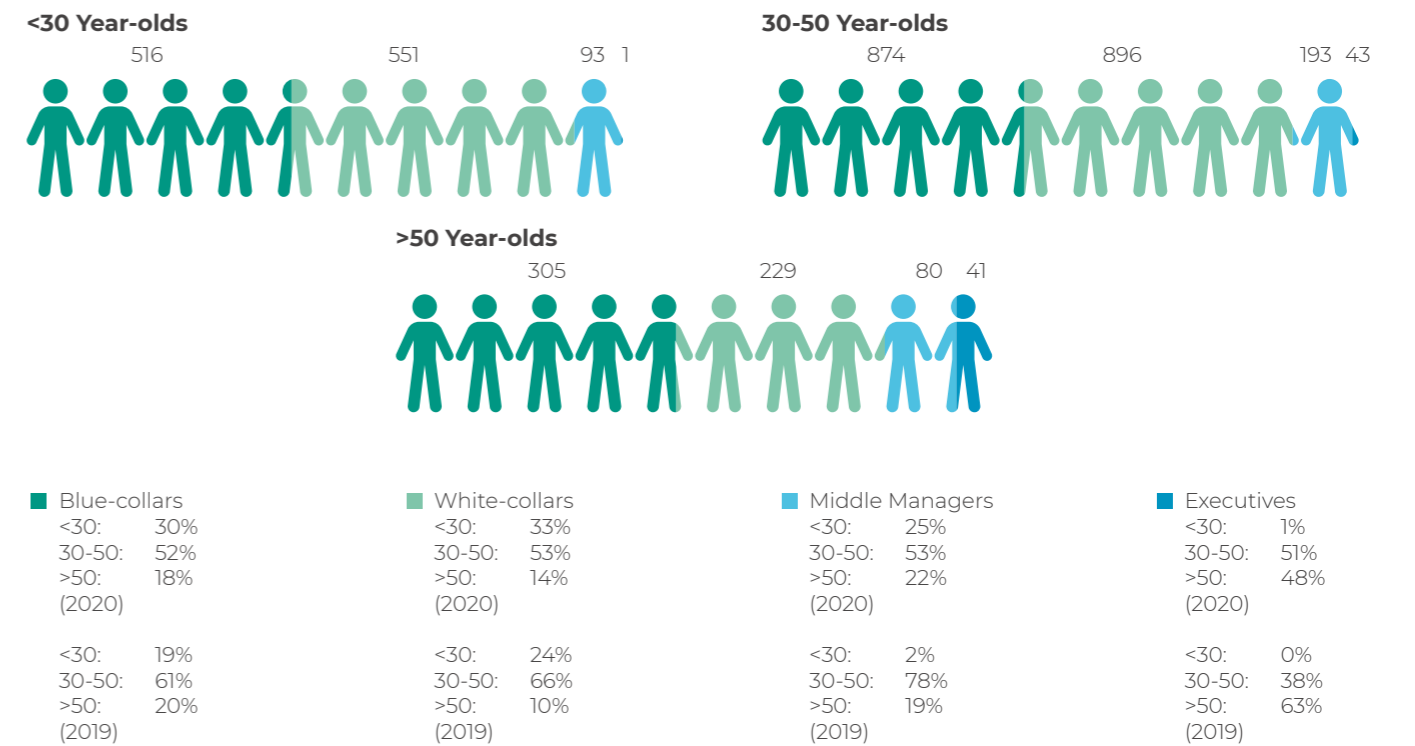
Due to the specific technical characteristics of our sector, the majority of the professionals are male. For this reason, to ensure fair treatment within the organisation, we constantly monitor data relating to the **gender pay-gap**, preparing annual review plans aimed at harmonising this condition.

Our consolidated HR **data**²¹ for **2020** are in line with those for 2019, with a similar distribution between men and women in the middle management and white-collar categories, while blue-collar workers are almost exclusively men. Women also appear slightly underrepresented in executive roles although, as a percentage of middle

management, they increased by 2% on total, compared to 2019. The percentage of women executives holding transversal roles (e.g., administration, finance and services in general) is adequate within the organisation and in line with that reported in other sectors.



A breakdown of our employees by age shows an increase in the under-30 age group to the detriment of the 30-50 age group, especially in the middle management category (+23% on total) as well as in the blue-collar and white-collar categories (+11% and +9% on total, respectively). In the Executives category, the over-50 age group has decreased while the 30-50 age group has increased, resulting in an equal distribution.



Employees by age and position in 2020 and 2019





New TBMs celebrate iconic women and shared values

In 2020, new machines joined Ghella's fleet of TBMs, which traditionally have female names. This age-old custom has taken on new and socially valid meaning over the years. The Cross River Rail project TBMs were given the names of two ground-breaking women of Queensland to remember their exceptional contribution. Like the two machines, these women paved the way for the state's better future.

The first TBM is called ELSE, honouring Else Shepherd, the first woman to graduate in electrical engineering in Queensland, paving the way for all women who wanted to enter fields that were traditionally male dominated. Professor Shepherd was astonished to have been considered a ground breaker. She has met all the female engineers and the staff working on the Cross River Rail Project stating: "By being a female engineer when there weren't many of us, I hope I've given other women the courage to do what they want to do – there's nothing stopping us."

The second TBM is called MERLE, in honour of Merle Thornton, an active feminist who has represented women's rights and social justice issues. Ms. Thornton was enthusiastic about a 1350 tonne TBM being named in her honour. She said: "I wouldn't say I've had a 'boring' life, but I have always tried to cut through on various social issues, so perhaps it is fitting to have my name on one of these massive tunnelling machines."

The new TBM for the Central Interceptor project in New Zealand was officially named Hiwa-i-te-Rangi, after one of the Matariki stars to which Māori send their dreams or aspirations for the new year. Students from schools along the Central Interceptor tunnel route were asked to vote for the star they felt best represented the goals of the project and whose characteristics resonated with them personally. Hiwa-i-te-Rangi was the winning choice by over 100 votes.

Finally, the two EPB TBMs at the Hanoi worksite have been called Than Toc and Tao Bao (literally "very fast" and "fearless").



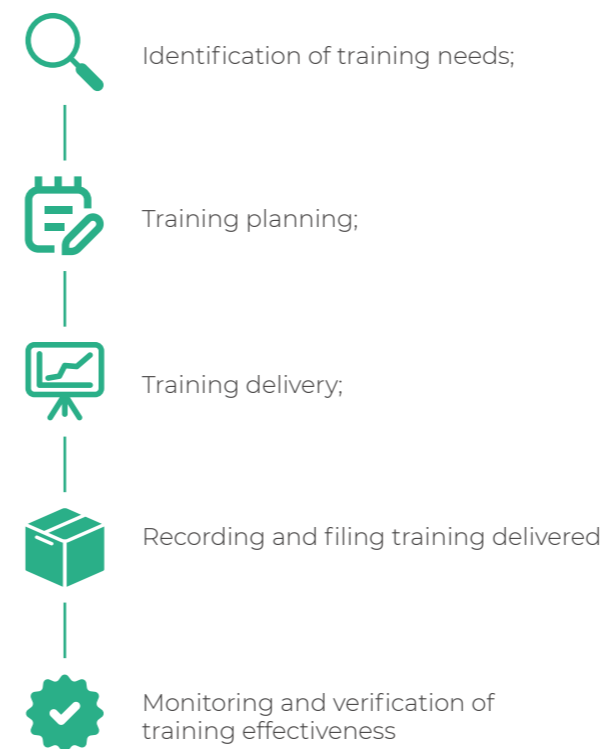
Australia, Brisbane
Cross River Rail, TBM Else

DEVELOPMENT OF HUMAN CAPITAL



Developing expertise, growing and enhancing each employee's skill-set, with no discrimination of any kind, is a key element for achieving our corporate objectives and for the creation and promotion of a culture aligned with our corporate values.

Our training process involves identifying the training needs of all Ghella staff, considering each resource individually and connecting with each employee's specific situation, in order to understand individual attitudes and provide the most appropriate tools for the development of people's potential. Training is carried out in different forms such as training on the job, internships, e-learning, etc., chosen depending on the needs and objectives set, and generally divided into the following phases:



We use inter-professional funds to co-finance non-mandatory training activities, ensuring ongoing upskilling.

In 2020, **236,598** hours of training were provided to company employees and personnel at the worksites included in the reporting scope, distributed between men and women as illustrated in the graph. The average training hours per employee are calculated by dividing the hours of training by the number of employees in each category and gender. This normalisation shows that the average hours of training provided to female employees were greater than those provided to men for the white-collar, executive and middle management categories. Overall, each employee receives an average of approximately 62 hours of training.



Average training hours by employee, gender and position (Ghella + worksites)



Training and work experience for vulnerable members of the local community

Our motto to **generate value** in the areas where we work is not limited to economic value but also encompasses social value: as part of both the Cross River Rail (Australia) and Central Interceptor (New Zealand) projects, we provide opportunities for personal, social and professional growth to local members of our workforce, focusing in particular on the more vulnerable categories.

The CBGU joint venture's training team at **Cross River Rail** worked with Construction Skills Queensland to develop the "**Training Employment Working Group**" (TEWG), whose members include public and private sector organisations of the construction industry. The TEWG mostly works with people in the **vulnerable categories** of Queensland's population to provide them with **training and employment opportunities** and give them the basic skills to be better-placed for jobs in the industry through a guided pathway.

The training programme includes **qualifying courses** on technical, safety, environmental, quality, management and leadership aspects as well as **job placement programmes**, which comprise traineeships and apprenticeships carried out directly at the schools or in the worksites.

As a member of the TEWG, **CBGU takes on** the most ambitious participants who reach and surpass the targets set in the traineeship and apprenticeship programmes as employees or subcontractors.

During the year, the Ghella Abergeldie joint venture (GAJV) set up for the **Central Interceptor** project launched the 20-week "**Dig Deep**" **literacy programme** for its employees of the **Maori and Pasifika communities**, managed with the training company Education Unlimited NZ.

The programme has reinforced the concept of respect for **diversity** within the workforce and promoted **integration** of the local populations into the worksite. Its objective is also to **break down the main linguistic barriers** to facilitate understanding and verbal and written communication.

Some of the key **milestones** achieved thanks to Dig Deep have been the greater participation of the people who attended the course in meetings and worksite toolbox talks, asking for explanations when they are not sure they have understood properly, they are able to understand written and verbal technical and **safety** instructions, they can easily fill in the forms required on site and can complete the required training courses.

During the course's graduation ceremony, each participant shared their story, describing their learning process and celebrating their personal and work achievements.

REMUNERATION AND INDUSTRIAL RELATIONS

Remuneration levels are defined in accordance with the principles of fairness and are commensurate with the experience and qualification of the resource and in no way can they be lower than the minimum wage levels established by law or collective agreements.

We value dialogue with trade union organisations as an instrument for negotiation, consultation and exchange of useful information, and we encourage the application of collective agreements, where they are in place.

Each resource is free to join a trade union of choice. The company undertakes to make special spaces available for this purpose on the company notice boards and provides places suitable for meetings between workers and their trade union representatives.

In 2020, around 80% of the total workforce was covered by collective agreements on working conditions.

CHILD LABOUR



We strongly believe that all forms of employment must be the result of free choice, therefore we **prohibit** any type of **forced labour**, prison labour, or any other modern form of slavery or human trafficking and extend these provisions to our business partners, in accordance with ILO no. 29 - Forced labour convention and ILO no. 105 - Abolition of Forced Labour Convention.

We do not allow the use of **child labour** and we recognise **education as one of the most important factors** for the mental and physical development of minors. Our human resources procedures guarantee the sole employment of people aged 18 or above, hence guaranteeing the absence of child labour incidents. The direct control we have over our resources reduces the risk of such incidents occurring. We extend our social

SUSTAINABILITY CULTURE

We believe in the potential of every organisation to contribute to the achievement of collective objectives, such as the SDGs, by creating a corporate culture in which sustainability principles are integrated into the values and conduct of people and therefore multiply their positive effects outside the work sphere as well.

We know that **at the base of all actions** aimed at improving sustainability performance, inside and outside the company, **lie the people** who perform them and, therefore, we consider raising awareness, and informing employees about sustainability issues, to be activities of fundamental importance. We carry out awareness campaigns, both centrally and on-site, on areas to which all workers can contribute, such as the correct segregation of waste or energy and water saving, or on social issues such as diversity and inclusion. We are aware that our most significant environmental impacts are connected to the production activities, such as excavations, but we believe that the creation of a solid corporate culture based

responsibility to suppliers through our qualification system and contractual clauses, which ensure alignment with our stance on child labour.

During the construction phase, the issue of child labour is managed by the human resources team at site level. They directly apply corporate policies and procedures relating to human rights and child labour in cases where we operate as part of a joint venture and our management system has been adopted. In cases of joint ventures where our management system is not applied, we make sure that procedures at site level comply with our principles and rules. We consider the risk of child labour incidents to be very low in all our sites.

on sustainability principles can be an important driver for change. This is the reason why we are committed to ensuring that our offices, branches and worksite offices are a model of responsible management of natural resources, where the work environment demonstrates its sustainability also through the daily actions of the people who work in it.

The tools used to support the spread of a corporate sustainability culture include our corporate **intranet** page, where we share news on a variety of topics such as information and updates from our worksites, short pieces on the company history, humanitarian or social causes promoted by the company, sustainability initiatives implemented at the headquarters and on worksites. Together with other tools, such as the **corporate photographic archive**, the intranet helps us keep the relationship between offices and worksites alive by encouraging curiosity through images and sharing stories.

HR management during the Covid-19 emergency

Human Resources are our most important **asset**. We benefit from the skills of individuals working together toward a common objective and we invest in their development, trying to identify the best path for them, personally and professionally.

The pandemics called for a flexible and creative management of human resources, reinforcing the **importance of people's health and safety**. We have chosen to put no employees on Covid-19 **furlough**, so to give a clear sign of **economic stability** and support families' physical and mental wellbeing. This was an effort deemed necessary to fulfil the role we want our firm to have within society.

We introduced organisational and physical **prevention and protection measures** with special protocols to prevent the occurrence of outbreaks. The challenge is to ensure our people can work in safe conditions by adopting new work methods and technologies.

We introduced rosters for **smart working** and reorganised our office space, reconfiguring their **layout** to increase distance and installing plexiglass separators. We reviewed our cleaning and

sanification procedures and also the rules regulating access to the building, to create a **sense of safety** in the workplace. **Free meals** have been delivered to individual offices, so to reduce the impact of our office activities on the local community by reducing mobility.

We strengthened our **video conferencing** tools such as Cisco and Teams so to allow people to work remotely. Technology was pivotal to ensure **business continuity**.

During the lockdown, the HR department liaised regularly with all employees, in Italy and abroad, via regular calls. Expatriate personnel who were unable to return to their families, often for several months, received a **Covid-19 bonus** and their unused travel tickets were reimbursed. Since March 2020, 90% of our **training activities** have been delivered through e-learning platforms.

Local communities



We contribute to the development of infrastructure that generates **long-term local benefits** by enhancing **services** to citizens and increasing the **productivity** and **competitiveness** of the **areas** where we operate. At the same time, the development of infrastructure can have positive effects on the **environment** at local level, as in the case of railway projects that promote a transport modal shift from road to rail and so improve air quality, or water projects that reduce spills of wastewater into water courses or the sea.

Our activities generate **downstream income** for the local area, linked to the construction phase, through the creation of **jobs** at the worksite and indirectly in the supply chain. In addition, the international nature of our company involves the **transfer of know-how** between the various regions of the world where we operate and the subsequent **professional growth** of the local workforce, especially in technical areas such as the operation of TBMs and their maintenance. These benefits go beyond the construction phase of the project, leaving a lasting **legacy** to the local population.

However, we are aware that the construction phase can cause **inconveniences and disruptions** for the communities in the immediate proximity of the worksites, such as **noise, vibrations** or the temporary closure of roads and public areas. In the case of sites in urban areas, such as projects for metro lines, there may be additional inconveniences associated with the **movement** of construction vehicles and supplies, and the transport

of excavated materials through city streets. For this reason, our worksites **engage with local stakeholders** from the earliest stages of construction with the aim of **informing** and **consulting** them, of **mitigating** negative impacts as much as possible and, where possible, offering **compensatory measures**. Information-oriented initiatives include individual visits to residents (door knocking), "Meet the contractor" events or initiatives to involve schools adjacent to our worksites. Mitigation measures include the installation of noise barriers. For example, in some worksites, conveyor belts carrying excavated materials have been equipped with an external casing in order to minimise the noise generated by the continuous movement of the belt. Compensatory measures may include direct contributions to local residents, with a view, for example, to installing special windows or doors to dampen noise, or indirect contributions, through donations and sponsorships of initiatives for the benefit of the entire community.



Australia, Brisbane
Cross River Rail

McCulloch Way

In September 2020, after a long period of planning and collaborations with various organisations, the JHCPBG JV (set up for the **Sydney Metro City and Southwest** project) contributed to the completion of the "**McCulloch Way**", a paved pathway providing wheelchair access to the beach from Bear Cottage Hospice, which hosts children with terminal illnesses and which Ghella supports.

The personnel of the joint venture and some of its subcontractors generously donated their time, resources and materials to accomplish this important project enabling families to enjoy the bushland around Manly Beach in Sydney.

With this project and its direct donations to Bear Cottage Hospital, Ghella promotes its conviction that an essential part of its mission as a builder of excellence is to contribute to the development of the areas where we operate and the well-being of the local communities.



Some stakeholder engagement initiatives are managed directly by our clients with the local support of worksite personnel, such as the establishment of **visitor centres** that can be visited by schools or private citizens. These contain displays of informative materials on the various phases of construction and excavation, often offering the possibility of organising visits to the worksite.

For example, our client BBT, at the request of the Municipality of Fortezza and the Autonomous Province of Bolzano, contributed to the establishment of the Observatory for the construction of the Brenner Base Tunnel²². The body aims to create an **interface** between the project and the District Communities of the Val d'Isarco and Alta Val d'Isarco. Representatives of the communities are part of the management body of

the Observatory and speak out for the concerns of the communities in all the various stages of construction. BBT has also created the **BBT-Infopoint** in the Habsburg fort of Fortezza, with a large exhibition area that presents the technical issues related to the excavation, but also the nature and culture aspects of the project.

Our client Bane Nor in Oslo has also created a visitor centre which uses virtual reality among other information material to allow visitors "travel" through the tunnel built by the joint venture and organises guided tours at the worksite for residents, schools and other local stakeholders.

In New Zealand, the Ghella Abergeldie JV recently opened a Discovery Centre for the local community with its client Watercare. This fully mobile seven-metre long

trailer includes virtual reality and augmented reality experiences, and touch screen games, guided by an animated character Wai Mā, a long-fin eel which is endemic to New Zealand.

Our international footprint in 15 countries and 4 continents makes the seamless **integration** of our expatriate staff in the local context very important. It is an opportunity to enhance our unique corporate culture and generate mutual enrichment through interaction, **inclusiveness** and curiosity towards others. With the same spirit, we **respect the rights and customs of indigenous peoples** and place them at the centre of activities that facilitate the integration of worksite personnel in new settings.



Vietnam, Hanoi
Photo by Francesco Neri from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

Art goes underground at the Cross River Rail worksite

The Cross River Rail joint venture joined forces with Camerata, Queensland's Chamber Orchestra, for the Brisbane Festival of International Arts. Camerata performed at the Woolloongabba Station worksite as part of the "Art goes underground" initiative. The composer John Rotar performed a piece called *Apis Australis*, inspired by the industriousness of bees, a very appropriate theme for a construction site!

Volunteering at the worksite: distribution of food in Argentina and New Zealand

Ghella's Matanza Riachuelo worksite in Buenos Aires is promoting **food distribution** to soup kitchens located along the route of its excavation project and in strategic areas near the city's poorer districts. To date, around 1 tonne of pasta and rice has been donated, together with other foods such as tomato sauce and milk.

The Matanza Riachuelo project, funded by the World Bank, affects seven million residents, of whom 10% live under the national poverty line. The current **pandemic** has aggravated the already serious economic crisis in Argentina, making this project even more important.

A similar initiative took place at the Central Interceptor worksite in New Zealand: 25 members of the project's joint venture took part in a voluntary "**Eat my lunch**" project. In just one day, they prepared more than 1,500 meals for children in low-income public schools. The project was also a team-building moment for the project's staff, who worked together to achieve this goal.



Make Give Live

The Ghella Abergeldie JV and our customer Watercare joined forces at the Central Interceptor worksite in New Zealand to sponsor the **Make Give Live** association, a local **social enterprise** which makes **knitwear** for sale and donations to the community. For every article purchased, the association gifts an article to a person in need. We committed to buying **500 articles** over the project. They will be distributed to the whanau (extended families) of the worksite's personnel and we are also working with the association to identify segments of the local Kiwi population that could benefit from the donations. The first group was the children of May Road Primary School who received 200 pairs of wool slippers.



Value

Key financial figures

REVENUE

€525_M

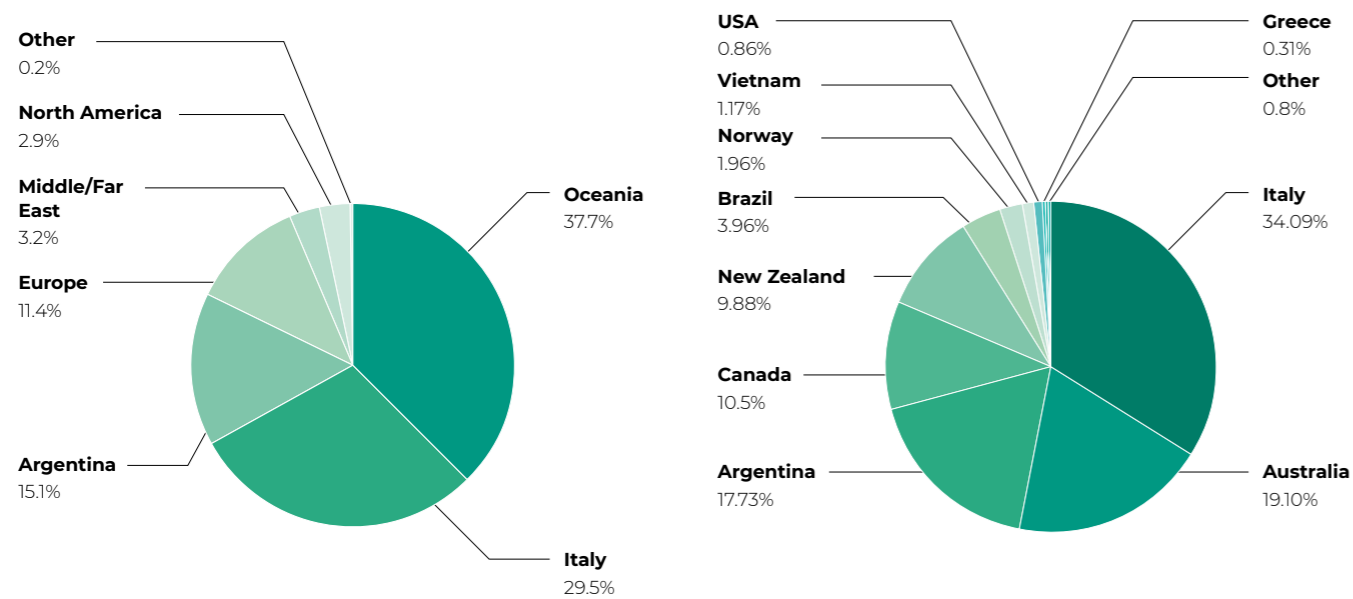
EBITDA

€58,6_M

ECONOMIC VALUE GENERATED AND DISTRIBUTED

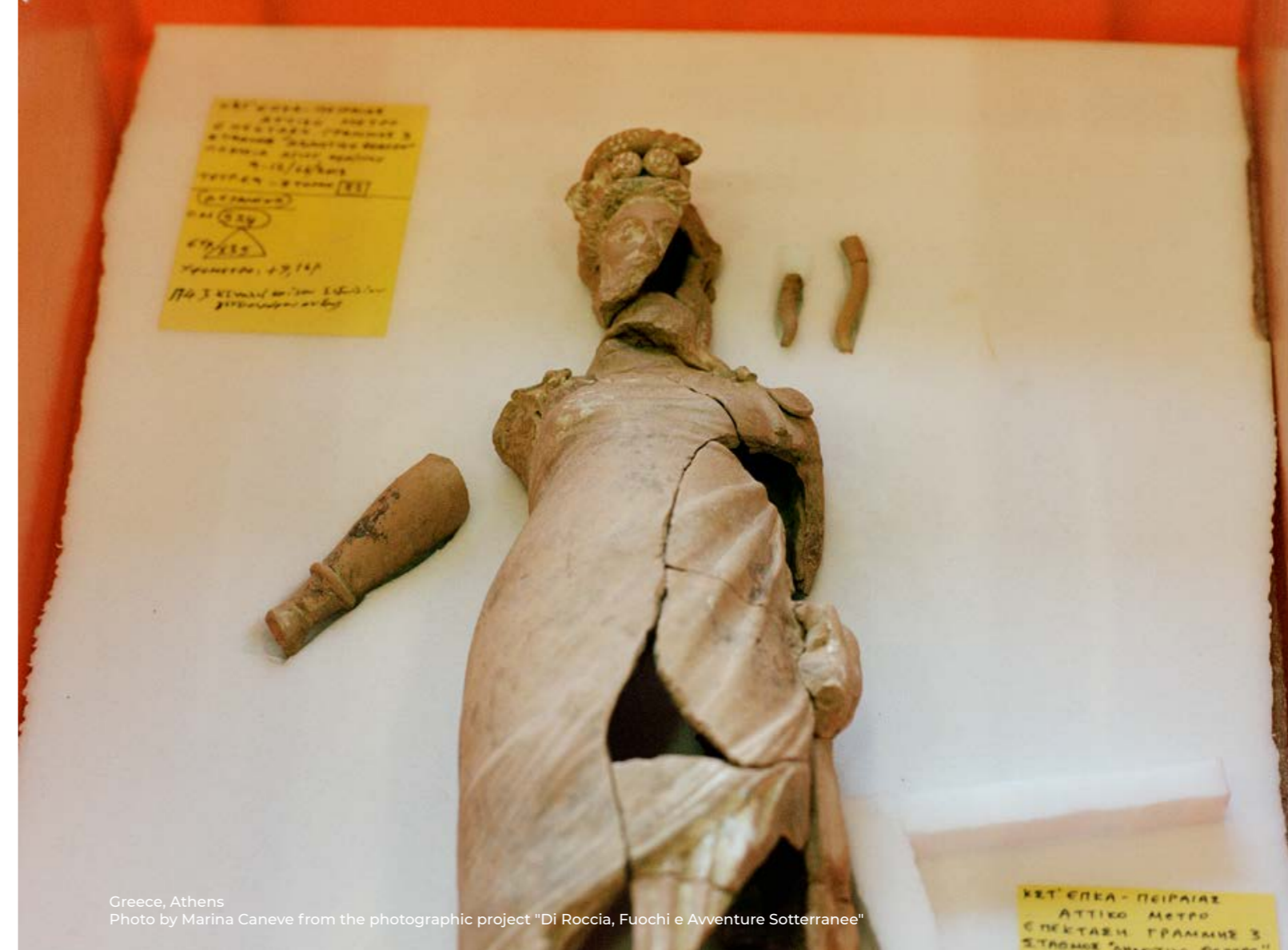
€555,6_M

A breakdown of our 2020 revenue and order backlog by geographical area shows the international scope of our business with more than 70% of revenue and roughly 66% of our order backlog developed abroad.



Revenue by geographical area

Order backlog by geographical area

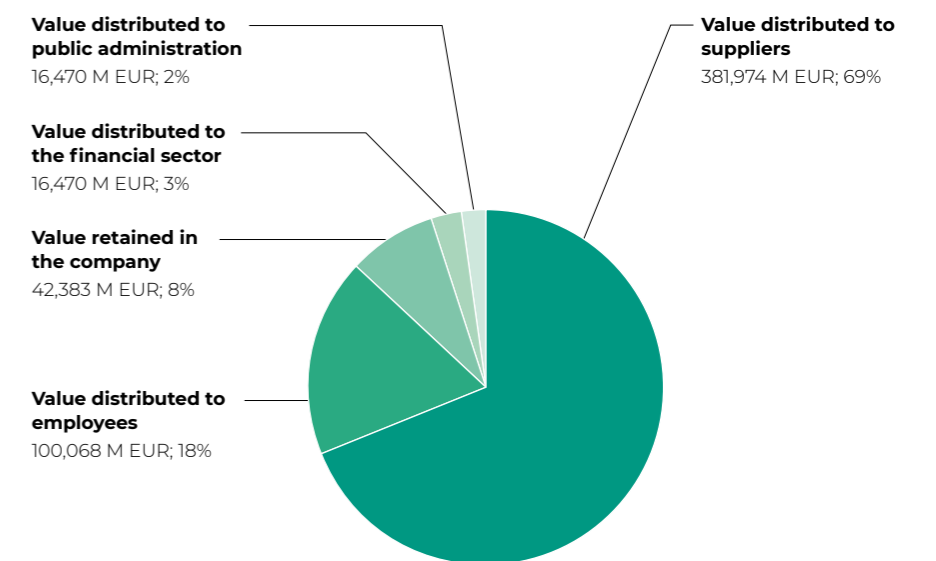


Greece, Athens
Photo by Marina Caneve from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

Economic value generated and distributed

The economic value generated and distributed is calculated by reclassifying the income statement figures of the consolidated financial statements at 31 December 2020.

In 2020, Ghella's directly generated economic value amounts to €555.611 million and includes revenue and financial income²³. Most of this value (69%) is distributed to suppliers and includes the cost of purchasing services and raw materials. Another 18% is distributed to employees. The value distributed to the financial system makes up 3% of the total and includes financial expense, exchange losses and any dividends distributed to shareholders. The public administration received 2% of the economic value generated in the form of income and other taxes and duties. The value retained by the company is equal to 8% of the total.



Distribution of economic value



SACE-BNL Green Loan

In 2020 Ghella has signed a Green Loan with BNL Gruppo BNP Paribas with a new SACE guarantee in support of the Italian Green New Deal, the European plan that promotes a Circular Europe: modern, sustainable and resilient.

The Green Loan, for a total of 40 million euros, has a duration of 5 years and is intended to support a wide plan of “green” investments for an overall value of approximately 100 million euros. The loan embraces diverse fields from urban regeneration to transportation infrastructure and the renewables sector. With this operation Ghella achieves a primacy: it is the first Green Loan, covered by SACE’s guarantees, obtained by a construction company and granted by BNL Gruppo BNP Paribas for Green Projects which have a positive impact in regard to environmental sustainability and particularly climate change.

One of the characteristic aspects of this financing transaction is an innovative pricing mechanism which, through a discount on the rate, incentivises the company to achieve specific **sustainability objectives**. The main covenant is based on the Ecovadis global sustainability rating, which we are required to keep at Gold or Platinum level throughout the loan’s six-year term. The second covenant is

tied to the circular economy and we have to guarantee the reuse of materials in specific processing phases of our contracts.

The investment plan sustained by the Green Loan includes the realisation of the Brenner Base Tunnel which, together with the existing ring road of Innsbruck, will reach an overall length of 64 km, becoming the longest underground railway connection in the world. The new line is located on the HS railway Monaco – Verona, a key infrastructure part of the Trans-European Transport Network and included in the environmental objectives of the European Green New Deal on sustainable mobility.

Alongside this transaction, we agreed with the same bank interest rate hedging derivatives with the same covenants, which also include a price penalty mechanism, with an additional interesting condition. If the covenants are not complied with, the bank is obliged to invest the entire extra income in a sustainability project such as the replanting of urban areas.

Technology supporting Sustainability: knowledge sharing during Covid-19 times in Brisbane

The Covid-19 emergency had a significant impact on the creation of **knowledge sharing** opportunities, which would previously have been in-person.

The CBGU joint venture active on the Cross River Rail (CRR) project in Brisbane responded to this situation by developing and leading a number of recorded **webinars** in order to reach a geographically displaced audience, **promote** opportunities for improving **sustainability performances** and ensure the project achieved its sustainability objectives.

These webinars also took place as “lunch and learn” occasions to

learn about the use of low-carbon concrete and recycled aggregates in the CRR project.

Another webinar was dedicated to the fibre-reinforced concrete applications in the project, emphasising in particular the use of recycled materials recently approved by the regulators.

Finally, a webinar was held for the administrative and commercial personnel to present how their roles are fundamental for the integration of sustainability into the procurement and contractual activities.

Our supply chain

Supply chain management plays a key role in the construction industry. Suppliers of works, goods and services (hereinafter “suppliers”) are **key stakeholders**, whose performance can significantly affect the efficiency, quality and sustainability of our activities and construction projects.

Ensuring the **responsible and transparent management** of the supply chain is therefore essential to promote business sustainability and the creation of sustainable value in the territories where we work.

We adopted a **sustainable procurement policy** which sets out the key principles we adopt to extend our responsibility beyond the company boundaries, such as:

- ethical procurement;
- support for the circular economy;
- assessment of the ecological footprint of construction materials;
- protection of the environment, including upstream of the boundaries of our worksites;
- promotion of local purchases;
- compliance with working conditions standards for our workforce;
- respect for diversity within our workforce;
- engagement of suppliers and

subcontractors in our sustainability journey.

These principles are also reflected in our **corporate sustainability plan**, where they are turned into defined objectives, actions and targets, specific to the supply chain.

QUALIFICATION AND MONITORING OF SUPPLIERS

The qualification of a new supplier, previously identified during a market survey, begins with the request to register on our **“Ghella vendor list”** platform, where the supplier fills in the qualification questionnaire. Successful suppliers are included in Ghella’s **list of suppliers**. In projects where the joint venture adopts the partner’s qualification system, we check that its qualification criteria are aligned with those included in our questionnaire.

In 2020, Ghella agreed contracts²⁴ with **1,454 new suppliers**, 69% of which were qualified with quality, health and safety and social criteria while **44%** also included environmental criteria. When environmental criteria were not included in the qualification process, they were introduced into the supplier monitoring process when the contract was drawn up.

A good sustainability performance is not only a requirement for accessing our supply chain, but also a condition to be maintained and improved throughout the collaboration period and beyond: our intention is to gradually engage suppliers in our sustainability journey, working as a team and following shared rules.

How do we do this?

● We include our principles and guidelines on environmental and social sustainability in purchase orders and contracts:

Quality, environment, health and safety requirements

Sustainable procurement policies

Standard clauses on compliance with the code of ethics

Anti-corruption guidelines

Guidelines on human rights

Model 231

● We periodically monitor the performance of suppliers, by assessing their focus on aspects of environmental, social and economic sustainability;

● We organise sample audits of suppliers, to check whether the qualification requirements are actually met, and of the procurement departments of our own worksites, in order to verify that the qualification and monitoring processes are

conducted in line with our corporate procedures;

● We train our buyers, both in our headquarters and on site, and keep them updated on the sustainability criteria introduced at corporate level;

● We involve suppliers in corporate sustainability projects (a sample of suppliers was included as a category of important stakeholders in a consultation conducted as part of the stakeholder engagement process that fed into our materiality matrix).



Ghella, Riachuelo Segments used for the Matanzo Riachuelo project



Our expertise is dynamic and evolves through self-assessment. We constantly test ourselves when we face engineering challenges and look for solutions that allow us to carry out work safely, monitoring technical decisions by pre-empting problems and promoting the sharing of know-how.

Excellence in the development of construction projects is a distinctive trait that positions us in our reference market for our in-depth specialisation. Through the continuous search for innovative construction solutions, our specialised expertise places us on a path of constant improvement of the quality standards of our projects, guaranteeing safer working conditions.

Most of the operational innovations are developed within the worksites, where new solutions are tested on a daily basis to achieve the best results. Over the last few years, as well as in 2020, research has been carried out in various areas, including:

- Applied research and validation of new technologies, materials and concepts, and the filing and management of patents;
- Design and development of modifications to the TBMs, jointly with the world's major TBM manufacturers, as well as to safety procedures in order to allow work in the presence of gas.

Our main **innovations** include:

- **Traffic protection shield:** this shield allows us to work on a tunnel without disrupting traffic flows to the considerable benefit of both the motorway users and operators. It separates the worksite from the motorway lanes, significantly increasing safety levels.

- **Automatic rib:** Ghella patent to install a rib in a tunnel without using personnel on the excavation face which means greater safety conditions.

Other **applications of innovative technological solutions** include:

- **New technologies for electric traction:** since 2020, the Central Interceptor and the Hanoi Metro worksites have ordered and will use electric locomotives. This innovation will reduce greenhouse gas emissions and improve the air quality inside the tunnels. It will also reduce consumption of the primary fans and the risk of fire in the tunnel, as diesel locomotives are the primary source of this risk;

- **Optical fibre:** installation of devices to check the wear and tear of steel in the tunnel segments,

monitored remotely using optical fibre, used at the Pavoncelli worksite;

- **Anchored gasket:** segment gasket anchored in the concrete to minimise the costs and use of labour and improve quality. This innovative technique is used at the Follo Line, Sydney Metro City and Southwest, Legacy Way, Riachuelo, Central Interceptor, Cross River Rail and Brenner worksites.

- **Compact launch structure:** this method allows to launch the TBM in very tight spaces, where the traditional way to assemble a few segments would reduce the manoeuvring space. In addition, avoiding the use of these segments eliminates the safety risks associated to their subsequent demolition. This method was used at the Central Interceptor and the Legacy Way worksites;

- **MSVs (multi service vehicles):** wheeled trolleys up to 50 metres long, with double cabs (one on each end), which can transport segments, people and materials in the tunnel without installing rails and improving flexibility of operation and logistics inside the tunnel.

Ghella Mask

In 2020, Ghella invented and developed a Covid-19 mask that would also protect its workers against injuries. The idea was to merge a medical device with personal protective equipment to protect individuals at the Ghella worksites. The Ghella Mask was conceived to reduce the high environmental impact of face medical masks by designing FFP2 and FFP3 filters free from elastic bands or nasal underwires, making the mask more easily disposable and cheaper. Assisted by the inventor and designer Christian Fracassi²⁵ of Isinnova, the device was designed and developed, and subsequently presented in 2021.



A story of transferred know-how: the "Palchetti method" in the Sydney Metro worksite

During the construction of the Sydney Metro City and Southwest metro, it became necessary to develop a method to build the tunnel **invert**, the half-moon shaped bottom part of the tunnel, within the client's tight timeline while maintaining our **quality** and **safety** standards.

The engineer tasked with developing this method, Francesco Anghetti, comments: "I had worked with Francesco Palchetti in directing the works to upgrade the A14 motorway between Ancona Nord and Ancona Sud. This experience meant I was constantly exposed to Palchetti's **innovative ideas**, put into practice during the project or successfully deployed on other prior projects".

They pooled their experience and found a mechanised prototype called "**catamarano**", known at Ghella as the "**Palchetti method**", to be the most suitable. This method had made it possible to achieve very high production output on previous projects thanks to the possibility of walking on the concrete that had just been poured for the tunnel floor using a platform and, therefore, without stopping the entry and exit of the concrete mixers and other operating machines.

"The idea is based on the industrialisation principle of repetitive activities as part of a production process", explains Anghetti. "These

innovations reduce manpower involvement in the more risky and critical stages of the process and, accordingly, improve its **safety levels**".

The **idea**, previously used for the motorway project, was **revisited** and fine-tuned during a number of **virtual meetings** between Australia and Italy and the fruitful discussions with Mr. Palchetti. An independent propulsion platform was developed to travel on specially-installed tracks at the top level of the invert to allow the pouring, vibration and levelling of the concrete in a single ongoing production process.

The **Sydney Metro City and Southwest** project's **senior management** enthusiastically approved the idea and provided the budget necessary to finalise and build the platform and perform the entire production cycle.

"This system," said Anghetti, "generated production peaks of almost 130 linear metres a day at the Sydney worksite, allowing us to meet the client's timeline."



Australia, Sydney
Photo by Alessandro Imbricco from the photographic project "Di Roccia, Fuochi e Aventure Sotteranee"

Donations, sponsorships and association memberships

We are aware of our social responsibility and have adopted a **sponsorship** and **donation** plan to support initiatives that reflect our values. Our commitment takes **three forms**:



DONATIONS



SPONSORSHIPS



SOCIAL INVESTMENTS

Our actions are aimed at achieving two strategic objectives: **philanthropic support** and **shared value creation**.

We have decided to focus on **six different areas**, each of which contributes to the development and growth of the communities where we operate:



Charity, i.e. support for organisations that carry out **social assistance and solidarity activities**, and associated employee awareness raising on the causes supported by the company. These include the donations to the **Lazzaro Spallanzani National Institute for Infectious Diseases** and the **Comunità di Sant'Egidio**;



Education and training, investing in **undergraduate and specialist degree courses** and master's courses, in order to transmit **our passion and expertise to future generations**; for example, we sponsored, inter alia, the Master for Business Engineers of Dirextra Business School and the level II Master in "Tunnelling and Tunnel Boring Machines" of the Turin Polytechnic;



Public relations, to promote our mission and vision through our stakeholders;



Culture, by promoting **cultural excellence** in Italy and in the world, such as through donations to the **Accademia di Santa Cecilia** in Rome and the creation of art content. "Di roccia, fuochi e avventure sotterranee" is a collection of photographic campaigns commissioned by Ghella on its worksites in Europe, the Far East and Oceania. The collection, edited by Quodlibet and curated by Alessandro Dandini de Sylva, is presented in a box set of six bilingual hardback volumes. The first five document five photographic investigations of the worksites in Athens, Oslo, Hanoi, Sydney and Brenner carried out by the same number of photographers. The sixth volume includes a selection of photographs from Ghella's historical archives. Each volume deals with a specific type of worksite at its different stages of progress and with diverse excavation techniques, combining documentation, portraiture, still life, conceptualism and abstraction. The work proposes a new and precious blend of artistic photography and the documentation of large engineering projects. The high typographic quality of the volumes expresses the richness of details of the images taken by the photographers and their extraordinary expressive ability;



Art, because at Ghella we believe that **freedom of expression** helps us to free our imaginations and avoid prejudice. After the difficult lockdown period, Ghella sponsored an important cultural project for Rome, the INSIEME exhibition of 19 contemporary artists exhibited on the Aurelian Walls and freely visible by the community. This project is organised by Sovrintendenza Capitolina ai Beni Culturali and also involved the publication of a catalogue with text by Achille Bonito Oliva, Salvatore Lacagnina, the Superintendent Maria Vittoria Marini Clarelli as well as three archaeologists who present the history of that section of the Aurelian Walls and its relationship with the contemporary works;



Environment, because we believe that **greater care is needed for the places** where we live and work: accordingly, we support FAI, the Italian Environment Fund, a foundation for the protection, safeguarding and enhancement of Italian natural and artistic heritage.





Italy, Rome
INSIEME exhibition on the Aurelian walls

Ghella for Rome, solid support to our Community .

In a difficult time for Italy, **Ghella has supported Covid-19 front line workers**. In 2020, it donated **€100,000 to the Lazzaro Spallanzani National Institute for Infectious Diseases**, the Rome-based hospital which was the first to isolate the virus and has treated thousands of Covid-19 patients since the outbreak of the pandemic.

*“The work and expertise of the INMI Lazzaro Spallanzani staff are an Italian excellence that we are proud of, but we know that a **battle like this one, against the coronavirus, cannot be won without adequate funds**”, said **Enrico Ghella, chairman and CEO during the March 2020 lockdown**. **This donation is made possible thanks to the efforts of all of our Ghella personnel and collaborators** who, by continuing to work with commitment and dedication, allows us to keep the company running despite this dramatic moment.”*

Ghella also supported Comunità di Sant’Egidio with a donation of €50,000. Sant’Egidio was set up in Rome and operates in more than 70 countries around the world **to combat poverty and hunger**. In May 2020, in Rome alone, the Community delivered 10 thousand food packages and opened 10 new distribution centres in the suburbs. To achieve our vision of leaving a better world to the next generations, it is important to **do our best to ensure that no one is alone**.



INSIEME

The **INSIEME** exhibition was conceived by Gianni Politi and achieved with Ghella’s support, promoted by Roma Capitale and the Sovrintendenza Capitolina ai Beni Culturali. After the tough lockdown, Politi wished to showcase Rome’s resilience and the strength of its cultural ferment. He decided to use the Aurelian Walls as the backdrop to exhibit the works of 19 artists, selected by him as curator, to create a link between the monument and contemporary art.

The exhibition was on display from 22 October to 30 November 2020 on the part of the Aurelian Wall on Via di Porta Labicana during one of the more restrictive periods when all the national museums were shut.

Works by **Maurizio Altieri, José Angelino, Micol Assaëi, Elisabetta Benassi, Joanne Burke, Alessandro Cicoria, Stanislaw Di Giugno, Ră di Martino, Giuseppe Gallo, Vostok Lake, Emiliano Maggi, Marta Mancini, Andrea Mauti, Nunzio, Lulù Nuti, Alessandro Piangiamore, Gianni Politi, Pietro Ruffo and Delfina Scarpa**.

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Environment

In line with our environmental policy, sustainability policy and corporate sustainability plan, we operate according to high sustainability standards with the aim of reducing the **environmental footprint** associated with the construction phase as much as possible, while preserving the richness of the local ecosystems and becoming active players in the global challenge to mitigate climate change.

Proper management of environmental issues has always been at the centre of our modus operandi and is formalised through the adoption of an **integrated management system**, whose environmental component is certified in accordance with the international standard **ISO 14001: 2015**.

The system adopts a risk-based-thinking approach and aims to ensure that, right from the planning stage, all our worksites carry out an assessment of the **significant environmental aspects**, i.e. all elements of our activities that interact with the environment and that can generate impacts on it, both in normal operating conditions and in potential emergencies.

The significant environmental aspects that we monitor at our worksites to prevent potential local direct impacts include:

-  Water management and protection
-  Management of hazardous substances
-  Management and protection of the soil and subsoil
-  Management of historical, architectural and archaeological heritage
-  Atmospheric emissions/dust
-  Waste management
-  Noise
-  Landscape protection
-  Protection of biodiversity
-  Vehicular traffic
-  Asbestos management
-  Vibrations

RELATED LINK



Environmental Policy



Sustainability Policy



Sustainability Plan

We also quantify and monitor the environmental aspects that under normal operating conditions generate indirect impacts on a global scale, such as the contribution to the depletion of resources and climate change, in order to raise awareness and reduce them over time:



Consumption of raw materials and natural resources



Energy consumption



GHG emissions (scope 1&2)

The methods for managing and monitoring environmental aspects that are significant for a specific worksite are subsequently defined within an **environmental management plan** and, in some cases, a **sustainability management plan**, in order to prevent or mitigate the related impacts.

Planning the management of environmental aspects as part of project plans takes into account, as a minimum, local **legislation, contractual requirements, and objectives and targets** set by the client for the works. In addition, we apply our sustainability policies and plan to all our projects. This confirms our commitment to exceeding local expectations, adopting the **same sustainability standards** at a global level, and to continuously improving our **corporate environmental performance** over time. During the **construction** phase, our teams manage significant environmental and sustainability aspects through operational checks and continuous monitoring. Other site activities are targeted training of the staff,

audits and periodic inspections, analysis and resolution of environmental non-conformities and reporting of project performance as part of the periodic reporting to clients and to the headquarters.

This flow of information allows us to monitor environmental performance also at corporate level, both on individual projects and as consolidated data on all our projects globally.

Consolidated **data, information and environmental performance**²⁵ for the year are described in the next paragraphs, providing a comparison with 2019 and focusing on the aspects that were identified as priorities in our materiality analysis.



Profile



FRANCESCO MAZZEO
Head of corporate QHSE

Can you briefly describe your role and the main objectives of a corporate QHSE function?

I coordinate my team that manages the quality, health, safety and environmental management systems at corporate level in accordance with the international ISO standards. My main professional objective is to design, fine-tune and operate the management system in various contexts and with different stakeholders. Ghella is an international group and finalising rules with a common thread is a stimulating challenge facing us every day.

What did you find the most challenging about the Covid-19 emergency?

The pandemic was a real challenge for management systems as well. At corporate level, in January 2020, we issued our initial unambiguous instructions and then updated the risk assessments and related safety measures. For example, at our Brenner worksite, in addition to ensuring the essential services to guarantee the safety of the workers and infrastructure during the lockdown, we worked with the local HSE team to manage the subsequent stage when work resumed. This involved integrating the access control system with an automated screening process (for example, body temperature measurement, serological tests and swabs) to manage safety as an integral part of the process.

How important is it to monitor environmental aspects to reduce impacts?

For an effective environmental management system, data monitoring and collation methods to support strategic decisions are indispensable. Some years ago, we introduced important innovations to monitor our ecological footprint, the traceability of critical materials and workers' exposure to risks using computerised systems thanks to the Internet of Things. The construction industry evolves constantly and Ghella invests in cutting-edge know-how. We ran a pilot project at the high-speed Naples-Bari railway project based on

a detection system that can monitor greenhouse gas emissions from the production and transportation of some of the main materials we use such as concrete and steel. If applied at all our worksites, this system will allow us to monitor the main Scope 3 greenhouse gas emissions²⁶. We have achieved this result both thanks to an internal improvement strategy and our suppliers' involvement.

What is the most stimulating aspect of your job?

Truly experiencing first-hand the advantages of digitalisation of production processes placed at the service of the environment, respect for life and the safety of workers and all stakeholders. Contributing to ensure the safety of people and protecting the community together with my team: this gives meaning to my job, amply repaying every effort.



Australia, Sydney
Photo by Alessandro Imbriaco from the photographic project "Di Roccia, Fuochi e Aventure Sotteranee"

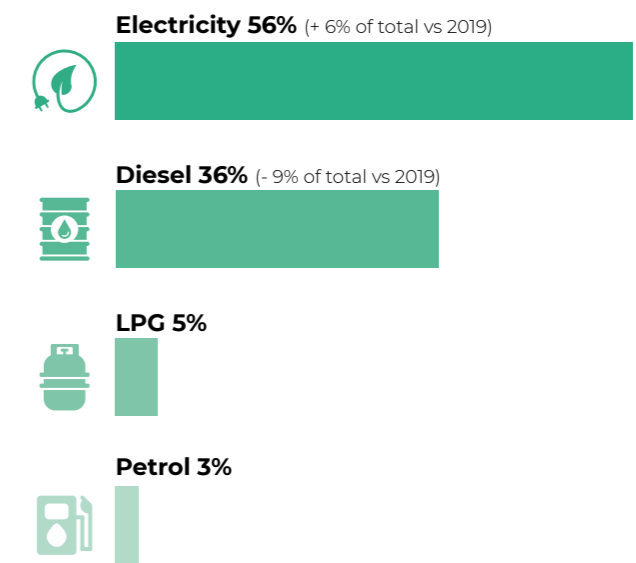
Energy consumption and greenhouse gas emissions



Consistently with our policies and our corporate sustainability plan, we are committed to increasing energy efficiency and reducing greenhouse gas emissions.

Construction work and on-site operating activities involve the consumption of energy resources that we constantly monitor. This consumption is attributable to activities carried out by both joint venture employees and subcontractors working on-site.

In 2020, we recorded overall energy consumption in our worksites of **742,778 GJ** - corresponding to an energy intensity of **54 MJ per hour worked** - broken down as follows:



Energy consumption by source (GJ)

Electricity

In 2020, 56% of our energy requirements was met by using electricity (50% in 2019). It is the main source of energy supply taking over from diesel consumption. We use electricity for our worksite systems and to power offices and base camps, in particular lighting, IT equipment and heating/cooling systems.

Diesel

It is the second source of energy supply (36% in 2020 compared to 45% in 2019) and is used for the operation of generators and construction equipment, for heating and domestic hot water in offices and base camps and for the car fleet.

LPG

It can be used to produce steam, for heating and domestic hot water in offices and base camps and for the canteen service. In 2020, it made up 5% of our total consumption, an increase of 1% on the previous year.

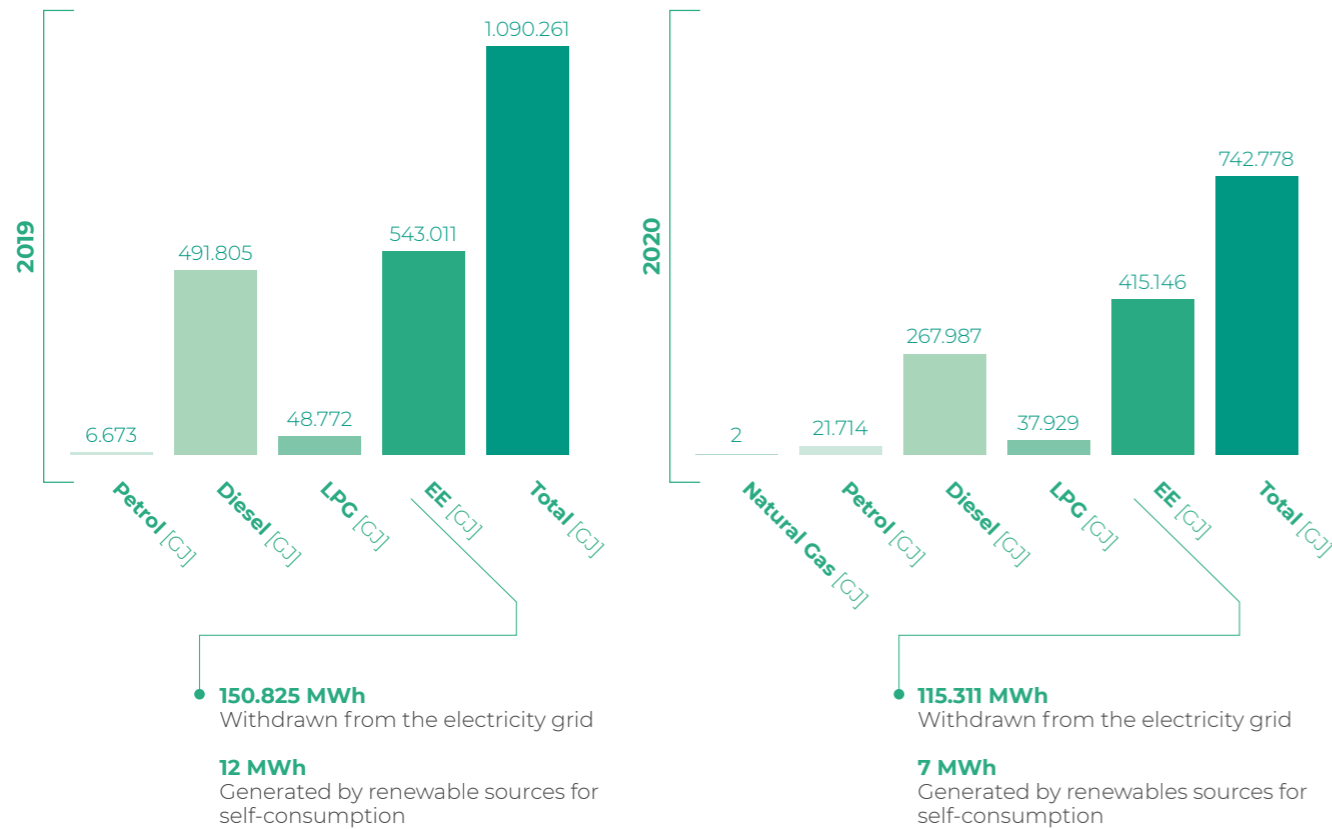
Petrol

It is used as fuel for the car fleet and for construction vehicles. We used petrol for 3% of our energy needs in 2020 compared to 1% in 2019.

The reduction in diesel is in line with our intention to gradually reduce the consumption of fossil fuels at our sites. We will increasingly electrify the worksite systems and vehicles over the next few years to reduce our local emissions.

A comparison of our energy consumption in 2020 and 2019 shows a **32% reduction**, mostly due to the smaller resort to diesel and electricity. This is a result of

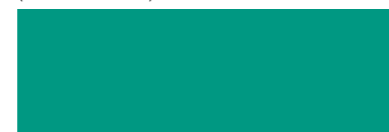
the lower energy requirements in 2020, primarily due to **commencement of the closing stages** of the Follo Line, Sydney Metro City and Southwest, Riachuelo and Dewa sites as well as to the **temporary shuttering** of works at some worksites to curb the spread of Covid-19. These factors more than offset the additional energy consumption due to the inclusion of the new Cancellò-Frasso Telesino, Cross River Rail and Hanoi Metro contracts in the reporting scope.



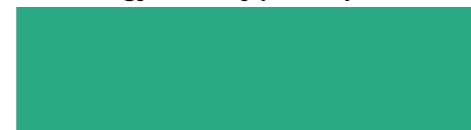
Italy, Brennero
Photo by Andrea Botto from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

The reduction in energy requirements in 2020 can also be seen from a comparison of the normalised energy consumption to hours worked (energy intensity): in one hour's work, our "average worksite" consumed 54 MJ in 2020 while it consumed 66 MJ in 2019.

2020 energy intensity | 54 MJ per hour worked
(-18% vs 2019)



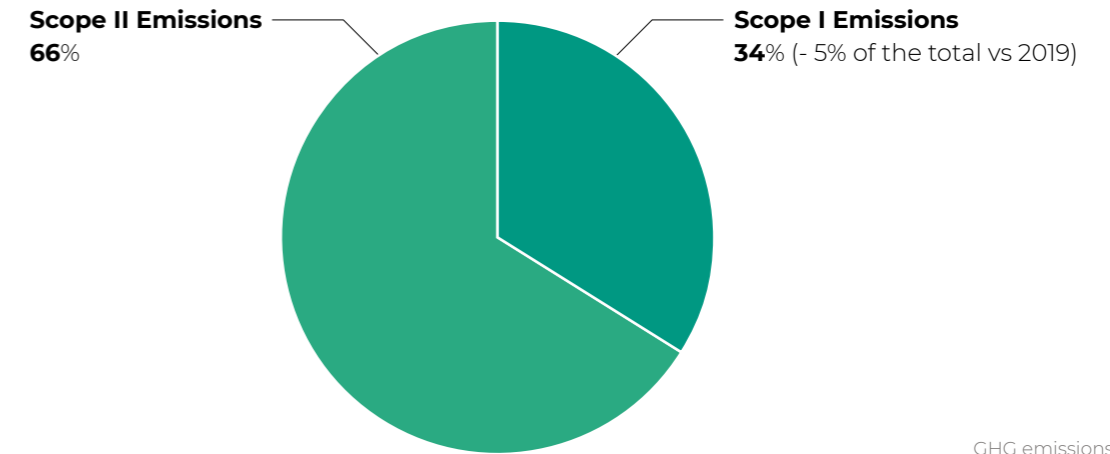
2019 energy intensity | 66 MJ per hour worked



Energy consumption in 2020 and 2019 (GJ)

We also monitor our **greenhouse gas emissions** related to energy consumption, differentiating between those generated by the on-site production of energy from the combustion of diesel, LPG and petrol (**Scope 1**) and those related to the purchase of electricity from the grid (**Scope 2**), generated upstream by the power stations and heavily dependent on the energy mix of the countries²⁷ where we operate.

In 2020, we emitted a total of **69,616 tCO_{2eq}** related to energy consumption - corresponding to a greenhouse gas emission intensity equal to **5 kgCO_{2eq}** per hour worked - broken down as follows:



GHG emissions (Scope 1&2)

66% of our greenhouse gas emissions are produced upstream. In 2020, local emissions made up 34% of the total compared to 39% in 2019 (-5% on total), mostly due to the smaller consumption of diesel.

2020 GHG emission intensity | 5 kgCO₂ per hour worked
(-20% vs 2019)



2019 GHG emission intensity | 6,3 kgCO₂ per hour worked



GHG emission intensity in 2020 and 2019 (kg CO₂ per hour worked)

Energy and CO₂ savings at the Central Interceptor worksite

Electric locomotives in the tunnel

The Central Interceptor worksite uses **electric locomotives** in the tunnel, rather than the traditional locomotives powered by diesel generators. This decision generates many benefits for the environment and workers' health and safety.

Firstly, the use of electricity, which is 70% to 80% generated from renewable sources in New Zealand, has allowed an estimated reduction in greenhouse gas emissions of **400 tCO_{2eq}**.

Exhaust gases and fumes are eliminated, improving **indoor air quality** and reducing **noise** pollution in a confined environment.

Finally, the decision to deploy electric locomotives reduces the **risk of fire** associated with the storage, handling of fuel and refueling, as the risk of fire at the battery recharging stations can be minimised by complying with the manufacturer's recommendations and isolating them from flammable environments.

Lighting towers

In 2020, Ghella installed **five solar-powered lighting towers** at the Māngere and May Road sites, instead of diesel-fueled lighting towers.

This generates **diesel savings** with a positive effect on the environment and operating costs: a concrete example that being sustainable does not necessarily cost more.

In addition, there are numerous operating advantages: the solar-powered lighting towers are mobile and can easily be reused in other sites, and they are silent, so they do not disturb the neighbouring residents.



Some examples of **energy saving** and **emission quantification** and **reduction** initiatives²⁸ implemented up to 2020 are set out below:

- Installation of LED lighting systems in tunnels and offices;
- Use of efficient machinery and ventilation systems in tunnels;
- Use of an electric conveyor belt to move the excavated material out of the tunnel, rather than by truck;
- Renewable energy production, through the installation of photovoltaic systems at sites;
- Installation of solar-powered lighting towers to replace diesel-fuelled hybrid lighting towers;
- Use of electrical locomotives in tunnels instead of locomotives powered by the TBM's diesel generators;
- Performance of LCA (life cycle assessment) studies to obtain the EPD (environmental product declarations) for some construction materials, quantifying the carbon footprint across their life cycles;
- Offsetting 25% of worksite energy consumption by purchasing green energy certificates;
- Receipt of the LEED (Leadership in Energy and Environmental Design) Platinum v4 certification from the Green Building Council for the new conference room at the Rome headquarters;
- Conversion of the car fleet of the Rome office with 34 hybrid cars and 2 electric vehicles.

Quantification and certification of the impacts of the Brenner CE ring

In November 2020, Ghella obtained the **environmental product declaration (EPD)** for the **precast concrete ring** used in the construction of the **exploratory tunnel (CE ring)** of the **Brenner Base Tunnel**.

The EPD is a **voluntary certification** used to communicate transparent, verified and comparable information on the environmental impacts of a product, including its contribution to global warming. The declaration summarises the results of a **LCA (life cycle assessment)** study, which quantifies all the flows of materials, energy and emissions associated with the various phases of the CE ring's life cycle, from the extraction and processing of the raw materials to their transport to the worksite and finally the manufacturing of the ring at the segment factory.

The CE ring is the **first concrete ring in the world** to obtain an EPD certification and to be published on the **International EDP System** platform. This exercise has also produced certified and publicly available "emission factors", helping enhance scientific information on the environmental impacts generated by the construction industry.

Besides providing objective information on the impacts of the CE ring, the study has also allowed the identification of the most significant contributions to the overall impacts (the so-called **hotspots**) and of specific measures that could potentially be implemented in order to improve performance over time.

The results of the study can be used as a **yardstick** to evaluate the impacts of the same product when manufactured in other projects, and in other countries, and could be used to support the definition of standard requirements aimed at maximizing its environmental performances in the future, in an **eco-design** perspective.



Italy, Brenner
Photo by Andrea Botto from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

Resource protection



We are aware that the materials and natural resources we use in our production activities, or with which we interact, are not unlimited and are of great value.

This section describes our approach to water, biodiversity and materials resource management.

WATER

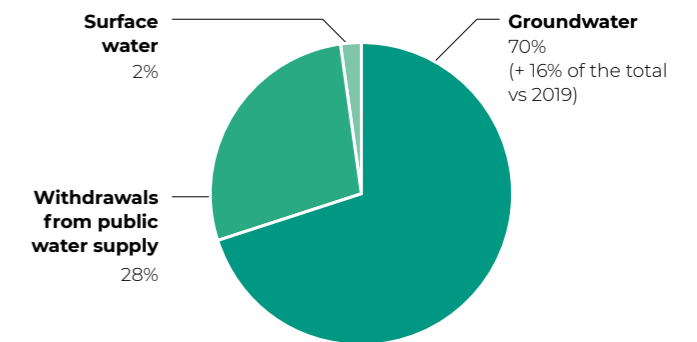
We are aware that water resources are a precious asset, hence we promote their efficient use and guarantee the protection of the quality of groundwater and surface water.

Water withdrawals at all our worksites take place in compliance with local authorisations, obtained for the extraction or the derivation of water from water bodies or public supplies. They are monitored and guided by resource saving principles, so to avoid any interference with the local water balance.

Our water **requirements** are mainly associated with dust suppression activities, consolidation of the soil, cooling of the TBMs and concrete production.

In order to limit the volumes of water obtained from external sources and reduce our water footprint, where possible, we implement ecodesign criteria aimed at **saving water** starting from the design stage.

In 2020, we sourced **1,204,188 m³** of water externally. This is equal to a water use intensity of **87.2 L** per **hour worked** and is broken down as follows:



Water use by source of supply



Reuse in tunnelling activities of water generated during the excavation phase, following treatment



Use of non-potable underground water for construction activities by storing it in on-site tanks fed by wells



Closed loop recirculation line of the TBM cooling water



Water recovery systems installed at the segment factory



Collection and recovery of rainwater through accumulation systems.

A comparison with 2019 shows that our water requirements decreased by **10%** (water use intensity), due mostly to the start of the completion phase at some worksites and, specifically, the **Sydney Metro City and Southwest** and **Dewa** sites, both of which use water from the public water supply. Conversely, the **Brenner** worksite increased its use of water drawn from wells.

Groundwater is our main supply source (**70%** in 2020 compared to **54%** in 2019). The **Brenner** area has large underground water reserves and the withdrawal of water does not cause water stress for the aquifers. This means that we can make greater use of non-potable water for our construction activities, without affecting the flow of drinking water from the local water network, destined for the local community.



Water withdrawals 2020 | 1.204.188 m³



Water withdrawals 2019 | 1.612.097 m³



Water withdrawals in 2020 and 2019 (m³)

Wastewater from our worksites consists of the water residue from site activities that has not been reused, the runoff water from the yards and the wastewater generated by offices and base camps.

In order to avoid potential alterations in water quality, we ensure compliance with the discharge requirements set out in the authorisations issued by local authorities. We do so by periodically sampling and analysing the quality parameters of the treated wastewater, according to a careful monitoring plan, through samples taken upstream of the discharge point. This may take place in the **sewer and/or in surface water bodies**, depending on local conditions (e.g., proximity to the sewer).

We pay utmost attention to preventing **potential accidental damage** to the water and soil compartments, through the selection of the products we use and the application of operating instructions and containment and waterproofing measures. Potential accidental damage in our worksites may be due to:

Once completed, our **Matanza Riachuelo** and **Central Interceptor** projects will bring water related benefits to their local areas. In particular, the projects will enhance the management of discharges, reduce spills and protect the quality of water, as explained in the **“Our Sustainability Journey”** section.

2020 water use intensity | 87,2 L per hour worked
(-10% vs 2019)



2019 water use intensity | 97,4 L per hour worked



Normalised water withdrawals in 2020 and 2019 (per hour worked)

- Pollution caused by suspended solids, generated by the excavation works; hosing down of site surfaces; washing of vehicles;
- Pollution due to the dispersion of cementitious components during concrete processing activities;
- Pollution caused by hydrocarbons and oils, due to leaks from worksite vehicles and the handling of fuels and lubricants;
- Accidental discharges of pollutants into surface waters or onto the ground.

BIODIVERSITY

We are committed to preserving the richness of **local ecosystems**, ensuring the protection of the biodiversity of the natural areas where our worksites are located, using appropriate measures for the prevention or mitigation of impacts on the flora and fauna.

Flora protection measures



Before setting up the worksite, we carry out investigations aimed at identifying any relevant plant species, for which it may be necessary to develop a specific management and monitoring plan



We limit the removal of indigenous vegetation to the amount necessary for construction purposes to lessen the impacts on land use, so as to minimise the risk of erosion and sedimentation problems



We guarantee the restoration of the vegetation at the end of the construction activities



We map and mark the vegetation to be conserved

Fauna protection measures



Before setting up the worksite, we carry out investigations aimed at identifying any relevant animal species, for which it may be necessary to develop a specific management and monitoring plan



Before removing the vegetation, we guarantee the relocation of the animals found within the site boundaries to a suitable habitat, in areas far enough from our work activities to be safe but not too far from the original location and characterised by the same vegetation



If injured animals are found during the cutting of the vegetation, we provide for their transport to and treatment at previously identified veterinary centres

Lesson learned on the treatment of hexavalent chromium in the tunnel water at the Follo Line worksite²⁹

Chromium (Cr) is a metallic element commonly found in nature as **trivalent chromium (CrIII)**, a nutrient that does not dissolve in water. In certain alkaline and/or oxidising conditions, a **hexavalent chromium (CrVI)** is obtained which forms water-soluble and highly toxic solutions.

The treatment of chromium in tunnel water is a challenge for the tunnelling industry. During the excavations with the Follo Line TBMs, higher concentrations of CrVI were found compared to those during the traditional drill & blast excavation phase.

The Acciona Ghella joint venture (AGJV) readied an **action plan** to resolve the issue, carrying out investigations, studies, tests, research, consultations with other sector companies and external consultants, laboratory trials and industrial-scale implementations while the tunnel boring activities continued and the water treatment system was working at full capacity.

The analysis of the untreated water samples taken from the tunnel, the concrete mixing plant and the grout plant showed that:

- the water soluble CrVI made up 80%-100% of the total chromium in the samples;

- the main source of CrVI pollution was the **cement-based mortar** that was mixed with **sodium silicate** during the TBM's passage through the tunnel and deposited in the space between the tunnel segments and the perforated rock. The rapid reaction time triggered the chromium's oxidation from the trivalent form to the hexavalent form, which was released into the water filtering into the tunnel from the mountain.

Other potential sources, such as the small quantities of chromium in the steel alloys of the TBM's cutters or its natural presence in certain types of rock, were excluded.

After evaluating various treatment methods, the joint venture concluded that the **best option** for this project was to **treat the water with iron sulphate**. It considered two important requirements: the treatment's effectiveness on a large scale and the adaptability of the existing treatment system at the Follo Line worksite. The treatment was successful with an **80% reduction** in the CrVI.

This experience showed that, while the presence and treatment of CrVI can be challenging for the tunnelling and cement industries, it **can be resolved**. AGJV presented the results of the case study at several industry conferences and other projects have adopted this method, which is used as a benchmark by the Oslo municipality.

Relocation of trees removed from construction site areas in Hanoi

Building a **metro line in an urban context** requires careful management of the **local flora**, in order to ensure its conservation.

The **relocation program for trees** with a trunk diameter greater than 200 mm - envisaged by the **Pilot Light Line 3** project in **Hanoi** - involved 311 plants of different tree species - including Lagerstroemia speciosa (89), Alstonia scholaris (42), Ficus benjamin (26), Senna siamea (26) and Engelhardtia roxburghiana (15) - located in the areas selected for the construction of subway stations, shafts and access ramps.

All the trees were mapped, photographed and surveyed, by recording information about species, diameter, circumference, height, location and their state of health.

In addition to recognising their naturalistic value, the residents of Hanoi believe in the **sacredness** of trees, in the belief that the

oldest ones retain traces and memories of past people and events; a common tradition is to light incense on their roots. In this case, a short prayer ceremony was held before the relocation activities started.

Removal and transport were carried out in line with best practices, ensuring the integrity of the trees during the transfer to the nearby **green area** placed in the **Vinh Ngoc** traffic island, originally characterised by uneven vegetation, consisting of wild plants, sparse shrubs and no shade trees, and with an overall unsightly effect on the surrounding urban landscape.

The surface of this area - equal to 2.2 ha - was at a lower level than the surrounding roads so levelling works were carried out before the replanting activities, in order to avoid any flooding that could compromise the success of the operation and the good health of the trees in future years.



MATERIALS

The specific nature of the activities performed at our worksites entails significant demand for materials. In line with our sustainability and sustainable procurement policies, we promote the sustainable management of materials, with the aim of limiting raw material depletion and reducing the environmental footprint associated with the supply of goods, by applying the following principles:

Manage materials sustainably



Reduce the consumption of materials and minimise waste



Give preference to materials with the highest benefits for the circular economy

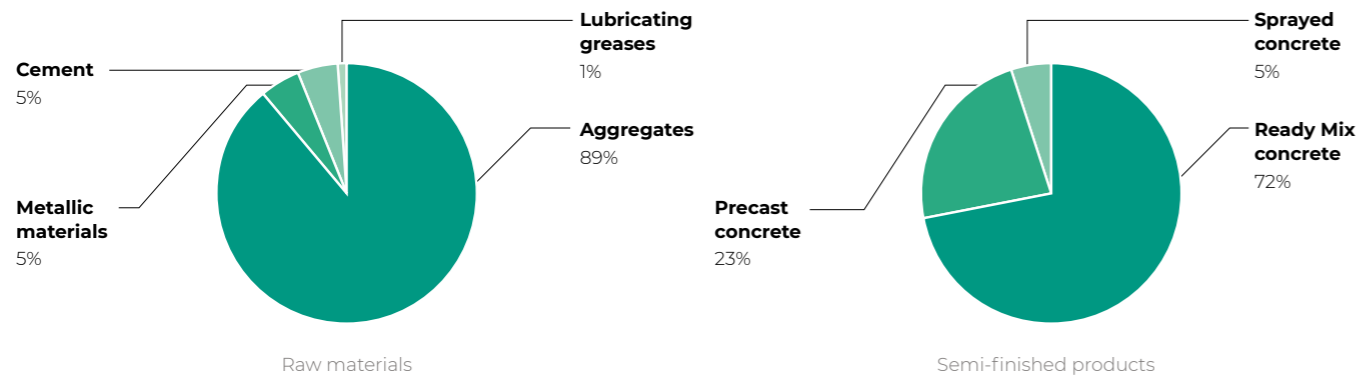


Consider their environmental footprint in the selection phase



Encourage reuse on site

In 2020, we procured **3,103,610 t** of construction materials, which corresponds to a material consumption of **0.22 t per hour worked**.



A comparison with 2019 shows our greater consumption of materials (+144% in tonnes per hour worked), mostly due to the inclusion of the new Canello-Frasso Telesino, Hanoi and Cross River Rail contracts in the reporting scope.

Materials consumption in 2020 | 3.103.610 t



Materials consumption in 2019 | 1.523.969 t



Materials consumption in 2020 and 2019 (t)

Normalised materials consumption in 2020 | 0,22 t per hour worked (+144% vs 2019)



Normalised materials consumption in 2019 | 0,09 t per hour worked



Normalised materials consumption in 2020 and 2019 (t per hour worked)

Most of the materials used come from non-renewable sources with materials from renewable sources such as wood making up 0.0002% of raw materials. The main raw material is **aggregates**, while the most significant semi-finished product is **ready mix concrete**. Where possible, we prefer on-site production with the installation of concrete batching plants and segment factories. This allows us to have direct control over production and, as a result, greater control over costs, process efficiency and related impacts (there are no impacts related to transport in this case).

Other best practices that we have implemented to date to reduce the supply of materials are:

- Identify solutions during the design phase to reduce the quantities of concrete required

- Provide recovery systems for concrete waste during production
- Reuse temporary base camp accommodation
- Maximise the reuse of on-site excavation materials instead of purchasing new aggregates from quarries
- Use recycled materials compatible with aggregates (such as crushed glass) to reduce the purchase of new aggregates from quarries
- Produce or request from suppliers EPDs of the main construction materials for information about their environmental (and carbon) footprint throughout their life cycle.

The restoration of Puketutu Island in Central Interceptor's construction site

The Central Interceptor project will contribute to the **restoration** of an important symbol of the **Maori natural and cultural heritage**.

Spoil from the Central Interceptor project sites will be transported to **Puketutu Island** for use in part of the programme of works that aim to recontour and shape the island's lost **volcanic cones** and restore it to a state that more closely represents its **history** and **cultural significance**. Te Motu a Hiaroa, also known as Puketutu Island, is **sacred** to the people of Te Kawerau ā Maki, Te Waiohū and Waikato-Tainui. Historically the island had five volcanic cones, three of which were extracted in the 1950s. One million cubic meters of scoria and basalt rock were removed to construct **Auckland Airport's runway**, leading to the disappearance of these volcanic cones. Once complete, **the island will become a public reserve** for recreational use. Throughout the reserve, signage will tell the history of the island, seizing an opportunity to inform and educate the local community and visitors, allowing them both to interact with the island's cultural and natural heritage.

Reusing the spoil on Puketutu Island will not only benefit the cultural landscape but it will also significantly reduce the distance that spoil haul trucks will have to travel, and as a result, the associated greenhouse gas emissions, as Puketutu Island is less than 5 km from Māngere, the site of the TBM launch shaft for this project. This reuse of the spoil **will avoid** the **extraction of new aggregates** from **quarries**, leading to a reduction in the consumption of raw materials and costs.



EXAMPLES OF CIRCULAR ECONOMY



Reuse of crushed glass at Cross River Rail

Cross River Rail was the first project in South East Queensland to trial the use of **crushed recycled glass** as an alternative to aggregates and natural quarry products.

An excellent example of the circular economy achieved with the Brisbane City Council, Queensland Rail, Cross River Rail Delivery Authority and Enviro Sand.

Every year in South East Queensland about 40,000 tonnes of glass end up in landfill. We have estimated that we can potentially reuse **more than 10,000 tonnes** of crushed recycled glass over the project's life cycle as an alternative to sand and other types of aggregates for **filling, draining or pipe coverings**.

This initiative allows savings of natural mineral resources and a reduction in the related environmental and social impacts. It has also created new jobs in the local supply chain.

There are plans to use this practice in the subsequent package, which includes the upgrading of two stations and work on the integrated railway control system, showing the importance of sharing best practices among projects and worksites.



Italy, Brenner
Photo by Andrea Botto from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

Waste and excavation materials



WASTE

We are committed to reducing waste production and optimising its management by applying the following hierarchy based on the so-called "3R" (Reduce, Reuse and Recycle).

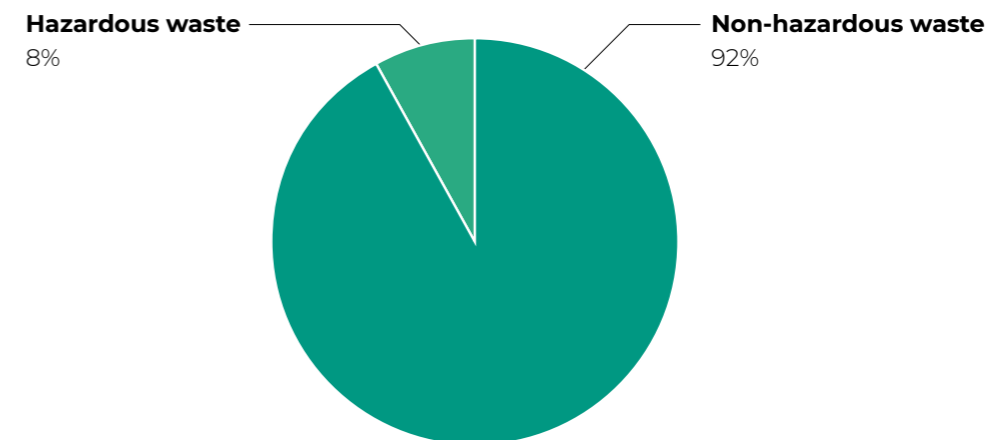
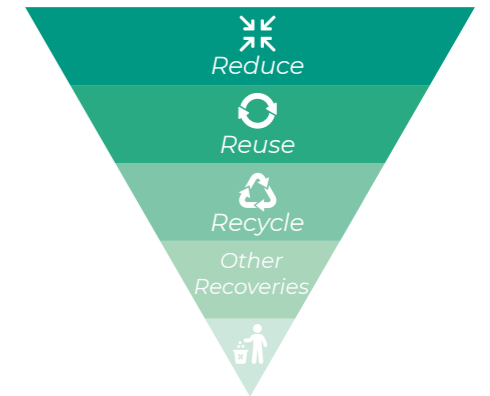
Plan for the use of less raw materials during the design stage and production. Reduce hazardous materials from the start.

Extend the use of the assets. Keep clean, maintain and repair machines and work tools. Transform waste into new resources to be used in the production process.

Recover energy from waste combustion or other types of treatment. Send waste to landfill or for incineration without energy recovery.

Our worksites mainly produce construction and demolition waste, vegetation waste/green cuttings, municipal waste from offices and base camps and waste deriving from the maintenance of vehicles and machinery.

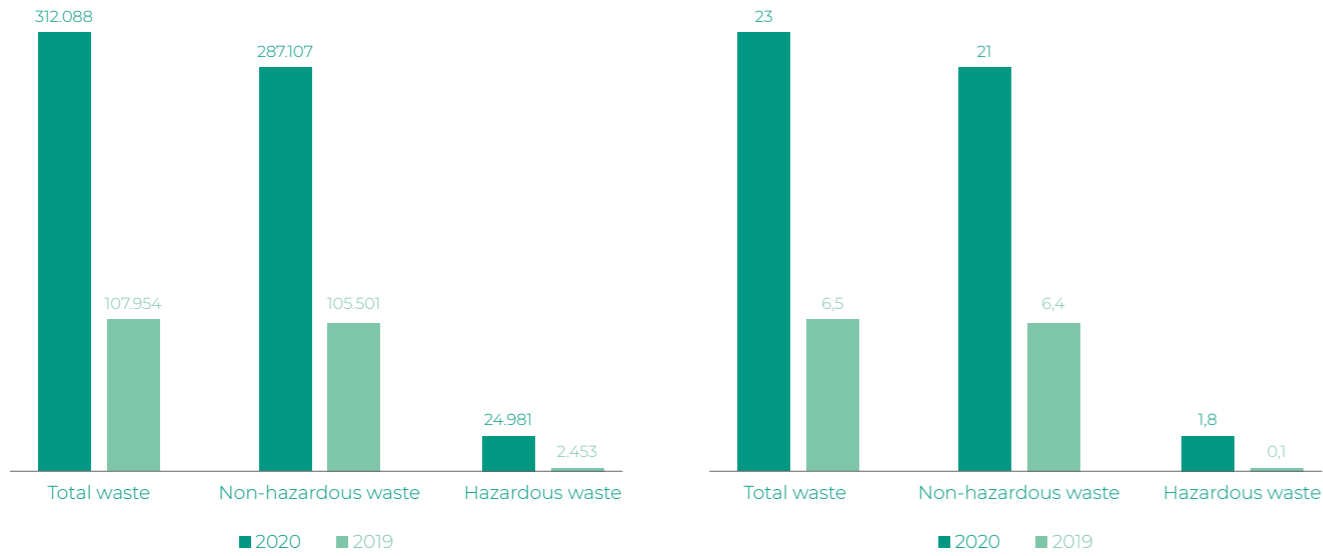
In 2020, we produced waste of **312,088 t**, equal to **23 kg** per **hour worked**, of which only **8%** classified as **hazardous**, thanks to our careful attention to the selection of the substances and products used at our worksites.



Classification of waste as hazardous and non-hazardous



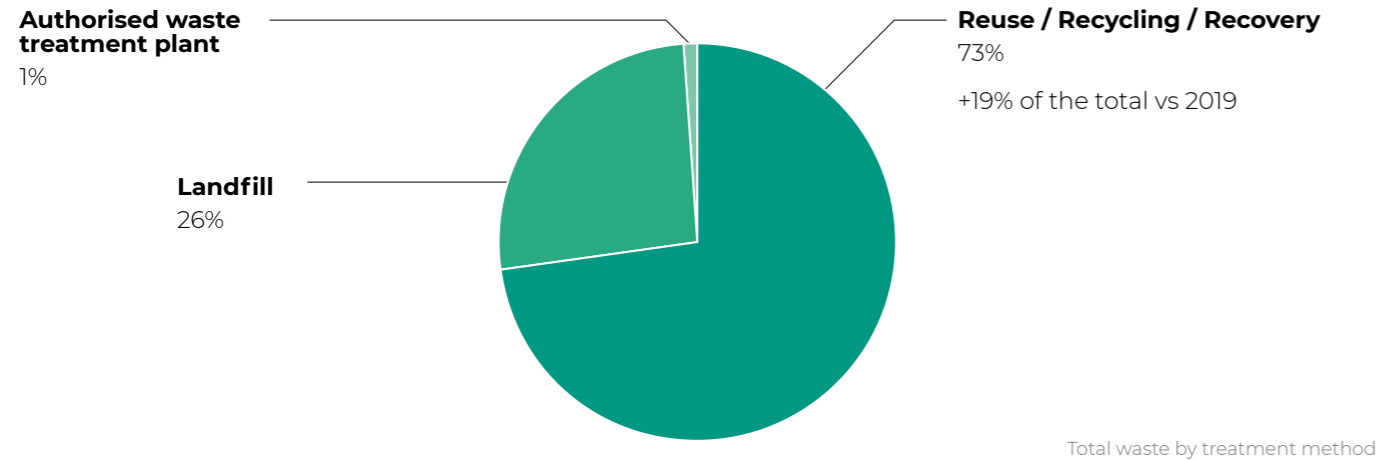
A comparison with 2019 shows an increase in waste produced (+254% in terms of kg of waste per hour worked), mostly due to the greater volume of non-hazardous waste. This result is due to the inclusion of the new Cancellò Frasso-Telesino and Cross River Rail contracts in the reporting scope as significant demolition work was necessary before the excavations could start.



Waste production in 2020 and 2019 (t)

Waste production in 2020 and 2019 (kg per hour worked)

In 2020, 73% of our waste was **reused and recycled** (+19% of total on 2019). This means that while the total volume of waste production increased, the percentage reused or recycled also increased.



Total waste by treatment method

Excavated earth and rocks



We are committed to maximising the reuse of **excavation materials** produced during our work, where suitable, in accordance with local legislation.

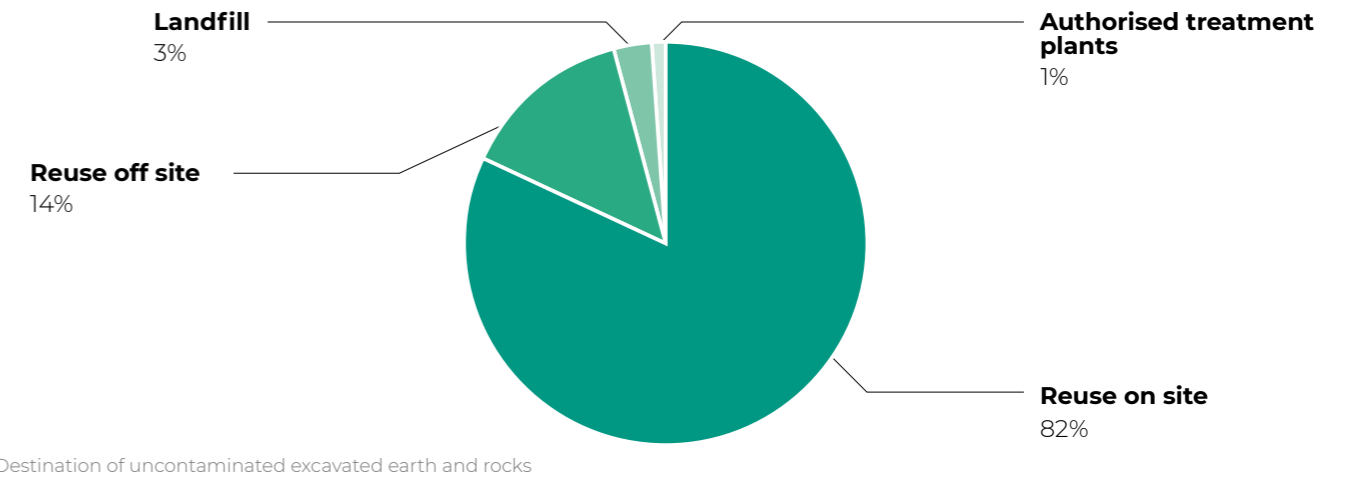
In 2020, we produced **4,634,623 tonnes of excavated materials**, of which **98%** was **uncontaminated** materials that could be reused while just **2%** was contaminated and had to be sent to recovery and treatment plants.

82% of the uncontaminated excavated material was **reused on site**, and specifically:

- **71%** sent for **environmental restoration** - i.e. transferred from the Brenner, Riachuelo and Cancellò Frasso-Telesino worksites to open-air deposits identified by the client to be reintegrated into the environment at the end of the work through replanting;

- **15%** reused in **construction activities** at the Cancellò Frasso-Telesino worksite;
- **13%** reused as aggregates for the production of the tunnel **segments** and **lining castings** at the Brenner worksite;
- **1%** reused for **back-fillings, embankments** and **tracks** at the Cancellò Frasso-Telesino worksite.

14% of the uncontaminated excavated materials from the Sydney Metro City and Southwest, Central Interceptor and Cross River Rail projects was **reused off site** as a secondary raw material in other supply chains or for other projects with significant benefits for the circular economy. Finally, **3%** of the uncontaminated excavated materials was sent to the **landfill** while **1%** was sent to **authorised treatment plants**.



Destination of uncontaminated excavated earth and rocks



The Rome Headoffice	2019	2020
<i>Electricity from the grid</i>	885.117 kWh	767.962 kWh ↓ -13%
<i>Water consumption</i>	2.637 m³	2.987 m³ ↑ +13%
<i>Natural gas consumption</i>	4.496 sm³	2.068 sm³ ↓ -54%
<i>Energy generated by a 25.8 kW_p photovoltaic system</i>	33.750 kWh	30.710 kWh ↓ -9%



9 filtered water dispensers were installed, with the possible sanitisation of the bottles supplied by the company.

The sale of **Wami** aluminium water cans provided by the vending machine contributes to water projects in Ethiopia.

Coffee pods are recycled for the construction of furniture. Headquarters interiors were painted with **Airlite**, an organic compound paint that purifies the air and reduces air pollution.

Italy, Rome
Chella's Headquarter



Appendix

METHODOLOGICAL NOTE

Ghella's 2020 sustainability report is its second such report for the group and is prepared annually and approved by the company's board of directors.

The report was prepared in accordance with the GRI Sustainability Reporting Standards (GRI Standards) published by the Global Reporting Initiative (GRI), using the "core" option (more information is available in the GRI content index).

The material topics are those identified during the materiality analysis performed in 2019. KPMG S.p.A.

performed a limited assurance engagement of the 2020 sustainability report in accordance with ISAE 2000 (revised). Its report provides information about the scope of its engagement and procedures performed.

The information provided in this report relates to the parent Ghella S.p.A. and the entities (such as special purpose entities and joint ventures) set up for the following projects:

COUNTRY	PROJECT	AREA	JV	COMPANY
Italy	Brenner Base Tunnel Lot "Mules 2-3"	Railway	Astaldi, Ghella, Cogeis, PAC JV	Brennero Tunnel Construction S.C.a R.L.
Norway	Follo Line	Railway	Acciona, Ghella JV (AGJV)	Acciona Infraestructuras and Ghella ANS
UAE	DEWA Phase III 800MW PV Solar Power Project	Energy	GranSolar, Acciona, Ghella JV	GRS - Acciona - Ghella JV
Australia	Sydney Metro City & Southwest	Metro	John Holland, CPB Contractors, Ghella JV (JHCPBG JV)	John Holland, CPB, Ghella JV (JHCPBG JV)
New Zealand	Central Interceptor	Hydraulic	Ghella Abergeldie JV	Ghella Abergeldie JV
Argentina	Matanza Riachuelo	Hydraulic	Ghella, IECSA SA JV	Consorcio CMI
Australia	Cross River Rail	Metro	CPB, BAM, Ghella UGL (CBGJV)	Pulse Partnership Pty Limited
Italy	High speed/high capacity Naples-Bari railway line, Cancellò-Frasso Telesino section	Railway	Pizzarotti, Ghella, Itinera	Consorzio CFT
Vietnam	Hanoi Pilot Light Metro Line 3	Metro	Hyundai, Ghella	JV Hyundai Engineering & Construction Co Ltd - Ghella SpA

Given the different facets of the group's business, the reporting scope was defined considering the worksite's strategic nature and its social and environmental impact. The report describes the group's main projects and

activities. Considering the nature of its business and the worksites' characteristics, the performance figures cover the 2019-2020 two-year period for this second reporting period.



Greece, Athens
Photo by Marina Caneve from the photographic project "Di Roccia, Fuochi e Aventure Sotteranee"

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102-8	Information on employees and other workers	36-37	Out of 3,822 employees, 22 men and 15 women have a part-time contract (102.8 c.)
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GRI STANDARD	DESCRIPTION	PAGE	NOTES
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103-1	Explanation of the material topic and its Boundary	9; 22; 71-73; 76	
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306-2	Waste by type and disposal method	71	
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GRI 103: Management Approach Disclosures 2016

103-1	Explanation of the material topic and its Boundary	9; 22; 51; 76	
103-2	The management approach and its components	9; 51	
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GRI 308: Supplier Environmental Assessment 2016

308-1	New suppliers that were screened using environmental criteria	51	
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GRI 414: Supplier Social Assessment 2016

414-1	New suppliers that were screened using social criteria	51	
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Energy ed emissions

GRI 103: Management Approach Disclosures 2016

103-1	Explanation of the material topic and its Boundary	9; 22; 61-64; 76	
103-2	The management approach and its components	9; 58-64	
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GRI 302: Energy 2016

302-1	Energy consumption within the organization	61	
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GRI STANDARD	DESCRIPTION	PAGE	NOTES
GRI 305: Emissioni			
305-1	Direct (Scope 1) GHG emissions	61 - 63	<p>a) Direct (Scope 1) GHG emissions are equivalent to 23,966 t CO_{2eq}.</p> <p>b) Gases included in the definition of Greenhouse Gases are CO₂, CH₄, N₂O, however CH₄ and N₂O % is negligible compared to that of the CO₂.</p> <p>d) The base year for calculation is 2020.</p> <p>e) The source of emissions factors is DEFRA 2019 (UK Government GHG Conversion Factors for Company Reporting).</p> <p>f) Data relating to JVs are reported as total JV values, without considering Ghella's percentage of participation in the JV.</p> <p>g) To classify emissions references are made to "The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised edition)" which defines Scope 1 Direct GHG emissions: Direct GHG emissions occurring from sources that are owned or controlled by the company, such as emissions from combustion in plants, boilers, vehicles, etc. (e.g. diesel, petrol, LPG consumption etc.).</p>

GRI STANDARD	DESCRIPTION	PAGE	NOTES																																				
305-2	Energy indirect (Scope 2) GHG emissions	61 - 63	<p>a) Indirect (Scope 2) GHG emissions are equivalent to 45,650 t CO_{2eq}.</p> <p>b) For the calculation of CO₂ emissions, the "Location-based" method has been applied, which uses average GHG emission factors specific to each national energy generation mix.</p> <p>c) Gases included in the definition of Greenhouse Gases are CO₂, CH₄, N₂O, however CH₄ and N₂O % is negligible compared to that of the CO₂.</p> <p>d) The base year for calculation is 2020.</p> <p>e.) The source of emissions are the following:</p> <table border="1"> <thead> <tr> <th>Nation</th> <th>F.E. 2019</th> <th>F.E. 2020</th> <th>Source</th> </tr> </thead> <tbody> <tr> <td>Australia - Queensland</td> <td>0.79 kgCO_{2e}/kWh</td> <td>0.81 kgCO_{2e}/kWh</td> <td>Australian Government 2018 Published in August 2019</td> </tr> <tr> <td>Australia - New South Wales</td> <td>0.79 kgCO_{2e}/kWh</td> <td>0.81 kgCO_{2e}/kWh</td> <td></td> </tr> <tr> <td>Nuova Zelanda</td> <td>0.0074 kgCO_{2e}/kWh</td> <td>0.0977 kgCO_{2e}/kWh</td> <td>Ministry for the Environment 2019 (based on 2016)</td> </tr> <tr> <td>Emirati Arabi</td> <td>0.4333 kgCO_{2e}/kWh</td> <td>0.4258 kgCO_{2e}/kWh</td> <td>Dubai Electricity & Water Authority (sustainability report 2018)</td> </tr> <tr> <td>Argentina</td> <td>0.3583 kgCO_{2e}/kWh</td> <td>0.313 kgCO_{2e}/kWh</td> <td>Climate Transparency (2019 Report) - Emissions intensity of the power sector</td> </tr> <tr> <td>Italia</td> <td>0.296 kgCO_{2e}/kWh</td> <td>0.33854 kgCO_{2e}/kWh</td> <td>Association of Issuing Bodies (AIB) Production mix factor 2019</td> </tr> <tr> <td>Norvegia</td> <td>0.011 kgCO_{2e}/kWh</td> <td>0.01118 kgCO_{2e}/kWh</td> <td>Association of Issuing Bodies (AIB) Production mix factor 2019</td> </tr> <tr> <td>Vietnam</td> <td>0.4336 kgCO_{2e}/kWh</td> <td>0.4336 kgCO_{2e}/kWh</td> <td>CDM Baseline Construction for Vietnam National Electricity Grid (E.F. 2010)</td> </tr> </tbody> </table> <p>f) Data relating to JVs are reported as total JV values, without considering Ghella's percentage of participation in the JV.</p> <p>g) To classify emissions references are made to "The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised edition)" which defines: Scope 2 - Indirect GHG emissions (electricity): emissions generated by the production of the electricity consumed by the company; Scope 3 - Other indirect GHG emissions: all other GHG emissions associated to activities of the company, but not owned or controlled by the company (e.g. emissions due to activities of third parties operating within the Group worksites).</p>	Nation	F.E. 2019	F.E. 2020	Source	Australia - Queensland	0.79 kgCO _{2e} /kWh	0.81 kgCO _{2e} /kWh	Australian Government 2018 Published in August 2019	Australia - New South Wales	0.79 kgCO _{2e} /kWh	0.81 kgCO _{2e} /kWh		Nuova Zelanda	0.0074 kgCO _{2e} /kWh	0.0977 kgCO _{2e} /kWh	Ministry for the Environment 2019 (based on 2016)	Emirati Arabi	0.4333 kgCO _{2e} /kWh	0.4258 kgCO _{2e} /kWh	Dubai Electricity & Water Authority (sustainability report 2018)	Argentina	0.3583 kgCO _{2e} /kWh	0.313 kgCO _{2e} /kWh	Climate Transparency (2019 Report) - Emissions intensity of the power sector	Italia	0.296 kgCO _{2e} /kWh	0.33854 kgCO _{2e} /kWh	Association of Issuing Bodies (AIB) Production mix factor 2019	Norvegia	0.011 kgCO _{2e} /kWh	0.01118 kgCO _{2e} /kWh	Association of Issuing Bodies (AIB) Production mix factor 2019	Vietnam	0.4336 kgCO _{2e} /kWh	0.4336 kgCO _{2e} /kWh	CDM Baseline Construction for Vietnam National Electricity Grid (E.F. 2010)
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GRI STANDARD	DESCRIPTION	PAGES	NOTES
Resource protection			
GRI 103: Management approach disclosures 2016			
103-1	Explanation of the material topic and its Boundary	9; 22; 65; 76	
103-2	The management approach and its components	9; 58-59; 65	
103-3	Evaluation of the management approach	58-59; 65	
GRI 303: Water and Effluents 2018			
303-1	Interactions with water as a shared resource	65	
303-2	Management of water discharge-related impacts	65	
303-3	Water withdrawal	65	<p>b) In construction sites where groundwater withdrawal is used, we respect the limits imposed by local legislation on extraction limits aimed at avoiding water stress in the area.</p> <p>c) All supplied waters fall into the freshwater category ($\leq 1,000$ mg/l total solid content)</p>
GRI 301: Materials 2016			
301-1	Materials used by weight or volume	68-69	
GRI 304: Biodiversity 2016			
304-2	Significant impacts of activities, products, and services on biodiversity	67	
Anti-corruption			
GRI 103: Management Approach Disclosures 2016			
103-1	Explanation of the material topic and its Boundary	9; 22; 27; 76	
103-2	The management approach and its components	9; 27	
103-3	Evaluation of the management approach	27	
GRI 205: Anticorruption 2016			
205-3	Confirmed incidents of corruption and actions taken	27	During 2020 no incidents of corruption were reported and no legal cases were brought against Ghella or its representatives/employees.



Greece, Athens
Photo by Marina Caneve from the photographic project "Di Roccia, Fuochi e Avventure Sotterranee"

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(Translation from the Italian original which remains the definitive version)

Independent auditors' report on the sustainability report

To the board of directors of
Ghella S.p.A.

We have been engaged to perform a limited assurance engagement on the 2020 Sustainability report (the "sustainability report") of the Ghella Group (the "group").

Directors' responsibility for the sustainability report

The directors of Ghella S.p.A. (the "parent") are responsible for the preparation of a sustainability report in accordance with the "Global Reporting Initiative Sustainability Reporting Standards" issued by GRI - Global Reporting Initiative (the "GRI Standards"), as described in the "Methodological note" section of the sustainability report.

The directors are also responsible for such internal control as they determine is necessary to enable the preparation of a sustainability report that is free from material misstatement, whether due to fraud or error.

They are also responsible for defining the group's objectives regarding its sustainability performance and the identification of the stakeholders and the significant aspects to report.

Auditors' independence and quality control

We are independent in compliance with the independence and all other ethical requirements of the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants (the IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our company applies International Standard on Quality Control 1 (ISQC Italia 1) and, accordingly, maintains a system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

KPMG S.p.A. è una società per azioni di diritto italiano e fa parte del network KPMG di entità indipendenti affiliate a KPMG International Limited, società di diritto inglese.

Ancona Bari Bergamo
Bologna Bolzano Brescia
Catania Como Firenze Genova
Lecce Milano Napoli Novara
Padova Palermo Parma Perugia
Pescara Roma Torino Treviso
Trieste Varese Verona

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20124 Milano MI ITALIA

Auditors' responsibility

Our responsibility is to express a conclusion, based on the procedures performed, about the compliance of the sustainability report with the requirements of the GRI Standards. We carried out our work in accordance with the criteria established by "International Standard on Assurance Engagements 3000 (Revised) - Assurance Engagements other than Audits or Reviews of Historical Financial Information" ("ISAE 3000 revised"), issued by the International Auditing and Assurance Standards Board applicable to limited assurance engagements. This standard requires that we plan and perform the engagement to obtain limited assurance about whether the sustainability report is free from material misstatement.

A limited assurance engagement is less in scope than a reasonable assurance engagement carried out in accordance with ISAE 3000 revised, and consequently does not enable us to obtain assurance that we would become aware of all significant matters and events that might be identified in a reasonable assurance engagement.

The procedures we performed on the sustainability report are based on our professional judgement and include inquiries, primarily of the parent's personnel responsible for the preparation of the information presented in the sustainability report, documental analyses, recalculations and other evidence gathering procedures, as appropriate.

Specifically, we carried out the following procedures:

- 1) analysing the reporting of material aspects process, specifically how these aspects are identified and prioritised for each stakeholder category and how the process outcome is validated internally;
- 2) comparing the financial disclosures presented in the "Key financial figures" and "Economic value generated and distributed" sections of the sustainability report with those included in the group's consolidated financial statements;
- 3) understanding the processes underlying the generation, recording and management of the significant qualitative and quantitative information disclosed in the sustainability report.

Specifically, we held interviews and discussions with the parent's management personnel and personnel of Consorcio CMI. We also performed limited procedures on documentation to gather information on the processes and procedures used to gather, combine, process and transmit non-financial data and information to the office that prepares the sustainability report.

Furthermore, with respect to significant information, considering the group's business and characteristics:

- at parent level
 - a) we held interviews and obtained supporting documentation to check the qualitative information presented in the sustainability report;
 - b) we carried out analytical and limited procedures to check, on a sample basis, the correct aggregation of data in the quantitative information.
- We held videoconferences with the management of Consorcio CMI, which we have selected on the basis of its business, contribution to the key performance indicators at consolidated level and location, to obtain documentary evidence, on a sample basis, supporting the correct application of the procedures and methods used to calculate the indicators.

Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the 2020 Sustainability report of the Ghella Group has not been prepared, in all material respects, in accordance with the requirements of the GRI Standards, as described in the "Methodological note" section of the sustainability report.

Rome, 23 July 2021

KPMG S.p.A.

(signed on the original)

Marco Maffei
Director of Audit

Note

- 1 <https://ghella.com/en/ethics-and-compliance>
- 2 <https://www.bbtinfo.eu/it/bilancio-della-co2/>
- 3 <https://www.napolibari.it/content/fsinapolibari/it/il-progetto.html>
- 4 <https://cloud.telt-sas.com/index.php/s/MWLBhuOJQMTtppA>
- 5 Sydney Metro CSW Business Case Summary
- 6 Cross River Rail business case, Building Queensland, August 2017
- 7 <https://www.adb.org/projects/40080-013/main#project-pds>
- 8 <https://www.ametro.gr/?p=8313&lang=en>
- 9 <https://www.worldbank.org/en/news/feature/2014/07/29/avances-matanza-riachuelo>
- 10 PORTER M. E., KRAMER M. R., Creating Shared Value, in "Harvard Business Review", January/February 2011, pp.64-77
- 11 https://ghellacomufkkymmy8.devcloud.acquia-sites.com/sites/default/files/2021-05/Ghella_Sustainability%20Plan%202019-2022-new.pdf
- 12 UN - International Charter of Human Rights (Universal Declaration of Human Rights; International Convention on Civil and Political Rights; International Convention on Economic, Social and Cultural Rights); ILO - Conventions of the International Labour Organisation; UN - Convention on the Rights of Children and Adolescents; European Convention for the Protection of Human Rights; ILO - Declaration on Fundamental Principles and Rights at Work; UNICEF - Children's Rights and Business Principles.
- 13 The frequency index (LTIFR) expresses the average frequency of injuries lasting more than three days as required by Eurostat and is calculated according to the UNI 7249 standard considering the ratio between the number of injuries and the total hours worked, multiplied by 1,000,000
- 14 The severity index (LTISR) makes it possible to identify the average severity of accidents lasting more than three days as required by Eurostat and is calculated according to the UNI 7249 standard considering the ratio between the number of days of absence from work and the total hours worked, multiplied by 1,000.
- 15 The total frequency index (TRIFR) takes into account all the accidents that have occurred (recordable accidents at work: accidents at work - lost-time injury "LTI"; injuries with medication only - medical treatment case "MTC"; injury which did not generate an absence from work - restricted work case "RWC"; death). The index is calculated considering the ratio between the number of recordable occupational injuries and the total hours worked, multiplied by 1,000,000.
- 16 Work related injuries - lost-time injury "LTI"
- 17 Medical treatment case "MTC"
- 18 Restricted work case "RWC"
- 19 The reported rate was calculated considering the ratio between the number of high-consequence injuries and the total hours worked, multiplied by 1,000,000
- 20 The data refers to the reporting scope, defined in the Methodological Note
- 21 The reporting scope is defined in the Methodological Note
- 22 <https://www.bbtinfo.eu/it/osservatorio/>
- 23 The item "use of funds" was subtracted from the total revenues reported in the income statement and the item "financial income from re-expression" was subtracted from the the financial income figure.
- 24 The reporting scope is defined in the Methodological Note
- 25 The reporting scope is defined in the Methodological Note
- 26 Greenhouse gas emissions that are not under direct business control, but that are indirectly due to business activities.
- 27 The CO₂ emission factors for the production of electricity in the countries where our sites are located are described in the Methodological Note
- 28 The list shows some examples of initiatives implemented in some of our construction sites
- 29 Chromium in tunnel water D&B vs TBM, Jostein Kjørstad, Environmental manager, Acciona Ghella Joint Venture -Fjellsprengningsteknikk bergmekanikk/ Geoteknikk 2019; Chromium VI in tunnel water - Jostein Kjørstad, NFF temakveld YM 2019.





Elemental Chlorine Free



Acid-Free



Carte di Lunga Durata



Carta da fonti gestite in
maniera sostenibile



