Press kit

The Bouygues Construction Climate Strategy

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BOUYGUES CONSTRUCTION

Shared **innovation**

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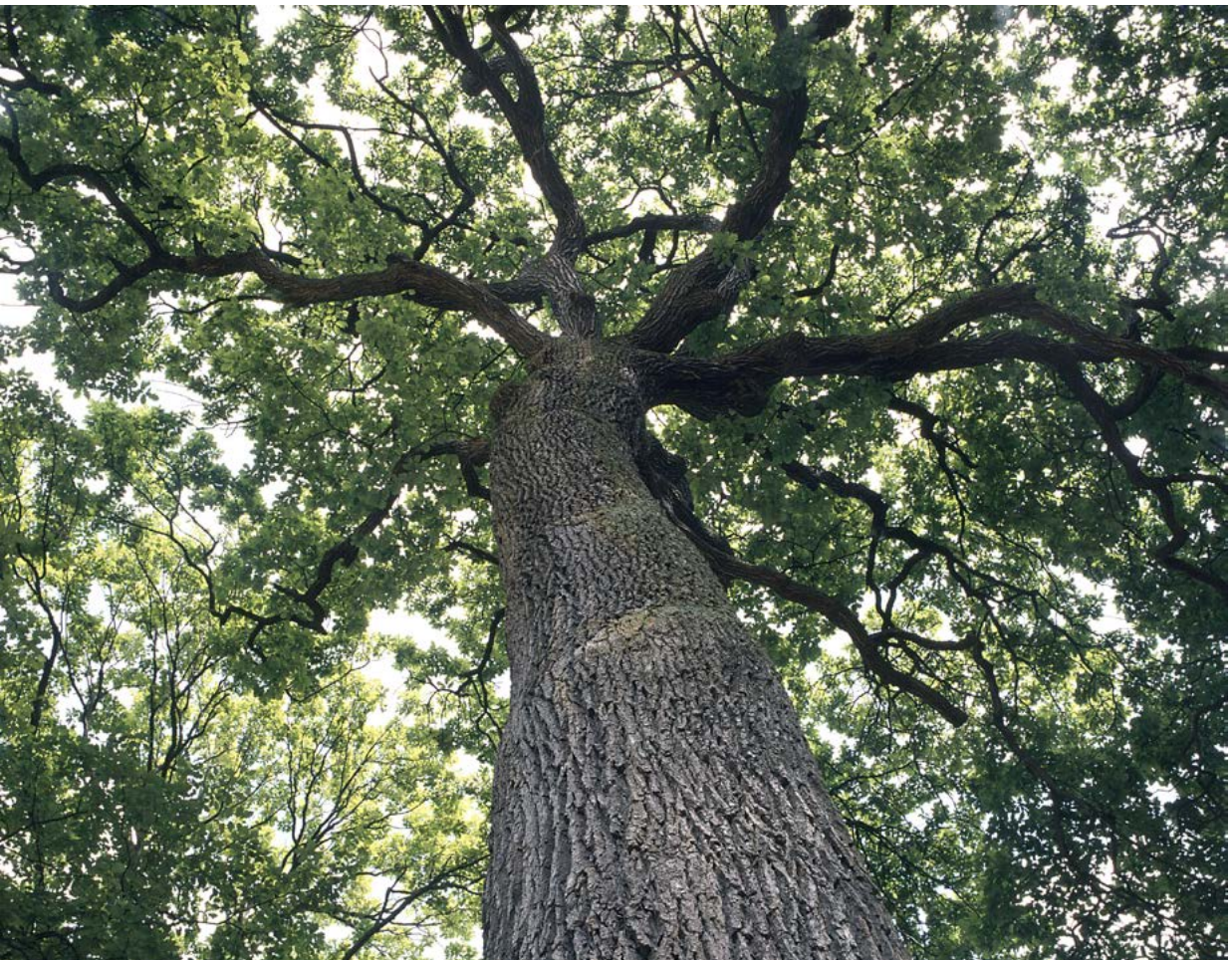

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BOUYGUES CONSTRUCTION IS STRENGTHENING ITS CLIMATE STRATEGY TO REDUCE THE CARBON FOOTPRINT OF ITS BUSINESSES AND PROMOTE ENERGY-EFFICIENT SOLUTIONS

As a responsible and committed company, Bouygues Construction has for many years been innovating and developing sustainable solutions and projects that encourage the energy transition. The ambitious climate strategy that the Group is now introducing will reduce its carbon footprint across its entire value chain, in line with the ambition of the Paris Climate Agreement.

In the 60 countries in which the Group operates, this strategy depends heavily on a high capacity for innovation and on the strength of its network of partner companies (suppliers and subcontractors).

Bouygues Construction is taking action across the entire value chain of its operations (design, purchase of materials, execution of projects and operation of buildings and structures), and also wants to support the development of a responsible use of the buildings and structures it constructs.

With this strategy, the Group is stepping up the measures it takes and the innovations it employs to ensure that **it is building and renovating responsibly** and supporting its customers through a wide range of solutions designed to have an effect on the **energy performance of buildings, neighbourhoods, and towns and cities**, the production and distribution of **decarbonised energy**, reduced impact of **types of use**, and the development of **low-carbon mobility**.

To act on our direct emissions (11% of our carbon footprint), the principal actions taken by Bouygues Construction will be to operate a fleet of green vehicles (90% of green vehicles in 2030), to reduce travel by employees (50% fewer international flights and 80% fewer domestic flights) and to reduce the energy consumption of all its construction sites and other locations.

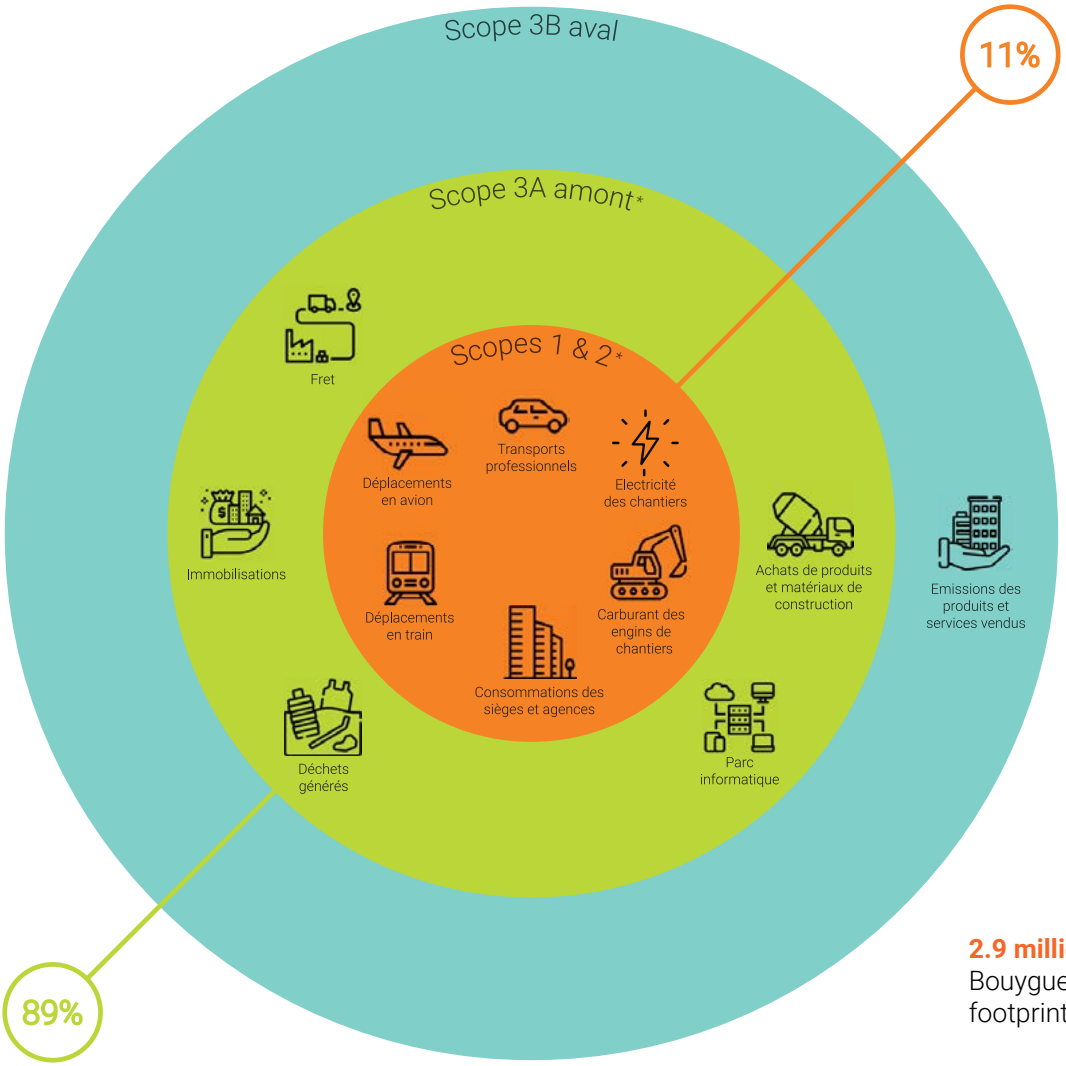
To act on emissions upstream of our value chain (89% of the carbon footprint), the Group's principal measures will include reducing the impact of materials purchased (concrete, joinery, cables, etc.), working with local suppliers to reduce freight, and reducing the carbon footprint of its IT equipment by 15% by 2025. In order to reduce the carbon intensity of the cements it employs, roadmaps have been drawn up on a country-by-country basis to achieve an overall reduction of 40% in the carbon intensity of cement (kg CO2e/m3). Timber construction will also become a priority as Bouygues Construction has undertaken to carry out 30% of its European building projects in timber by 2030.

Bouygues Construction also offers its customers a wide range of low-carbon and carbon-free solutions to support their efforts to reduce their carbon footprint: the production and distribution of decarbonised energy; the energy performance of buildings, neighbourhoods, and towns and cities; and the development of low-carbon mobility.

Philippe Bonnave, Chairman and Chief Executive Officer, said: "Bouygues Construction's climate strategy aims to make an active contribution to reducing the carbon impact of construction. The commitment of our teams and their ability to innovate in conjunction with our partners and listening to our customers is our main asset in meeting this challenge. The many sustainable projects already delivered by the Group show us that this is possible and we must go further."

Responsable *et engagé !*

The Bouygues Construction **climate strategy**



2.9 million tonnes in 2019
Bouygues Construction's carbon footprint in scopes 1&2 and 3A.

Our **commitments** for reducing greenhouse gas emissions

Scopes 1 & 2*	**Scope 3A***
-40%	**-30%**

Intensity calculation (kg of CO2 / K euros), target 2030, base year 2019

Scope 3B*

Innovative solutions for all our markets

Providing solutions to reduce the environmental footprint of our projects in their operational phase.

* Scopes 1&2: direct and indirect emissions relating to energy consumption
Scope 3A: other indirect emissions generated upstream of our projects
Scope 3B: other indirect emissions generated downstream of our projects

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« Confronted with the challenges of climate change, Bouygues Construction acknowledges its role as a responsible and committed player. The fight to reduce greenhouse gas emissions is a key strategic focus for us throughout our value chain. All our business lines, all our subsidiaries and all our top management are engaged in this ambitious approach, and we are working together with all our partner companies, because it's by working together that we will successfully meet this major challenge. »

Marie-Luce Godinot
Executive Vice President with responsibility for Information Systems, Digital Transformation, Innovation and Sustainable Development

Taking concrete action

Reducing travel by employees

- 90% of vehicles in the fleet to be green
- 50% fewer international flights
- 80% fewer domestic flights

Monitoring and reducing energy consumption in offices and on construction sites

- Connected site huts
- Remote management of consumption
- Photovoltaic panels
- Etc.

Reducing the carbon footprint of our purchases

Multi-strand action plans (with related reduction targets) for priority categories: steel, facades and external joinery, flooring, partitioning/insulation.

Reducing the carbon intensity of cement by 40% by 2030

Developing timber construction

Reducing the carbon footprint of our IT by 15% by 2025

Creating a reflex within the Group

- 100% of our employees given training in climate issues and on drivers for action to reduce our carbon emissions (clerical, technical and supervisory staff and managers)
- Carbon impact must be considered in vetting committees or finalisation reviews for 100% of our projects

A responsible approach to building and renovating

The construction sector combines significant exposure to climate risks with high potential for energy savings. This is why it is essential to renovate the existing building stock, construct new high-performance buildings and reduce energy demand due to uses and equipment. Many actions taken by Bouygues Construction – such as employing high-performance materials, working on design to conserve materials, studying uses to build as economically as possible, ensuring the reversibility of buildings so they can be given a second life, etc. – are reducing the carbon footprint of its activities and projects, including during the operational phase.

To find out more about responsible construction, click here
To find out more about energy renovation of buildings, click here

© Henning Larsen Architects

The Biotope project
A benchmark in low-carbon construction

The new headquarters of the Lille European Metropolis, the Biotope project was designed by Henning Larsen Architects and Keurk Architecture. It has been constructed using natural materials such as wood and stone, and incorporates extensive roof gardens.

Particularly impressive with regard to energy savings, **Biotope complies with the most stringent environmental standards. It has been awarded BREEAM certification**, which assesses the health and well-being quality for users, **the E+C- label**, which acknowledges the building's low carbon footprint and its energy performance, **the Wiredscore label**, reflecting the low impact of its connectivity, and **the BiodiverCity label**, thanks to its excellent performance in respecting and developing biodiversity.

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La Maillerie

An ambitious redevelopment programme in the heart of the Lille metropolis

Redevelopment is an essential driver for the low-carbon transition. Linkcity and Bouygues Bâtiment Nord-Est are currently carrying out a vast project to rehabilitate a former logistics platform owned by the 3 Suisses catalogue sales company in Villeneuve d'Ascq, in the heart of the Lille metropolis. It was decided to transform this logistics zone into a mixed-use district, which will eventually accommodate 3,000 inhabitants, schoolchildren and employees.

This vast rehabilitation project is based on 3 principles of low-carbon redevelopment :

1/ By restructuring a logistics platform, it is possible to reuse and remodel a source of existing material and energy.

2/ Heating will be perfectly carbon-neutral, as a result of a partnership agreement with neighbour which will provide everyone with heat collected from the city's household waste incineration plant.

3/ Urban intensity: the greatest possible use is made of every square metre of surface area. The principle is to do what is necessary and only what is necessary. For example, car parks will be shared between housing and offices.

« We have a vital role to play because the construction sector accounts for around 40% of global greenhouse gas emissions. Our climate strategy enables us to offer our customers innovative solutions. From the design to the operation of buildings and structures, every stage is designed to minimise the carbon footprint of our activities and projects. »

Claire Boilley-Forestier
CSR Manager, Bouygues Construction

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Moving towards increasingly low-impact materials

Low-carbon concrete

Industrial cement, a major constituent of concrete, accounts for 10% to 15% of the total mass of a concrete, yet it is responsible for 98% of its carbon footprint.

Low-carbon concrete is made using low-carbon cement. Cement is replaced by so-called "mineral" additives, i.e. waste or by-products from other industries such as calcined clay, fly ash and blast furnace slag. This substitution strategy results in a 70% reduction in the carbon footprint of concrete. Bouygues Construction has considerable engineering resources and a strong R&D capacity, enabling it to meet the challenges posed by low-carbon concrete. The Group's materials engineering unit runs a laboratory dedicated to R&D on concrete. In July 2019, Bouygues Construction and Hoffmann Green Cement Technologies (HGCT) signed a technical commercial collaboration contract to develop and test concrete mixes using a new cement manufactured with a new technology known as H-EVA (an ettringite technology using alkaline activated clay).

Developed by HGCT, this is a unique and innovative technology that offers a carbon footprint between 70% and 80% lower than a conventional Portland cement. Bouygues Construction is currently carrying out numerous experiments with low-carbon concrete on projects such as the A10 motorway, the Wonder Building in Bagnolet, the Pantin Conservatoire, the Arena at Porte de la Chapelle in Paris, the Orléans archives, etc.

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Timber

The timber market is growing fast, particularly in tertiary buildings and functional public structures, and the context is particularly favourable. The RE 2020 energy regulations will accelerate timber and bio-sourced construction. These new construction methods call on specific skills that Bouygues Construction has now incorporated into its teams.

A timber housing project **saves 50% of carbon emissions on the structural works** and **25% on the finishing works**. The use of wood in construction is now a credible alternative to concrete for many building owners as away of combating greenhouse gas emissions. Customers are showing more and more interest in timber and building regulations also encourage the use of wood and other bio-sourced materials. Bouygues Construction has set a target of **30% of timber building projects in Europe by 2030**.

The use of timber encourages co-design, the use of BIM (building information modelling), off-site construction, capitalisation and standardisation. It also improves safety and quality and reduces nuisance, costs and construction time.

Bouygues Construction has in excess of 120 timber projects either completed or in progress. These include the 50-metre-tall Commune Tower in Paris, the Weidmatt project in Liestal, Switzerland, the Unik framework contract with the French Ministry of the Armed Forces for the construction of modular timber buildings, the Epicéa housing complex in Issy-les-Moulineaux, junior high schools in Pithiviers and Dadonville and the Wonder Building project in Bagnolet.

« We have a pragmatic strategy of employing wood wherever we can and wherever it makes sense, with the support of a centre of excellence, the innovative assets of wood solutions, training and a club of partners. »

Fabrice Denis
Director of timber construction strategy
for Bouygues Bâtiment France Europe

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Producing tomorrow's energy today

Bouygues Construction is active in the construction of infrastructure for the production of carbon-free electricity: wind power, nuclear power, photovoltaic energy and green hydrogen. The Group's many references in recent years give it the capacity to provide its customers with a high degree of added value.

Carbon-free sources of energy

Nuclear power and wind power make it possible to produce electricity from available and carbon-free energy sources. Bouygues Construction has high value-added expertise and engineering and R&D capacity through partnerships with external companies. Bouygues Construction, with its subsidiary Bouygues Travaux Publics, is a major player in civil engineering for new-generation nuclear power plants (Olkiluoto in Finland, Flamanville in France, Hinkley Point C in the UK), but also offshore wind power, with two major projects: Floatgen and the Fécamp wind farm.

Floating offshore wind farms have enormous potential for producing renewable electricity in areas distant from the coast, where the aesthetic impact is reduced and where the quality of offshore winds makes it cheaper to do so. Bouygues Construction's expertise in maritime civil engineering is an essential asset in supporting this energy transition.

© Saipem

The Floatgen project

This project consists of constructing and installing a floating offshore wind farm off the cost of Le Croisic, Brittany, and testing it for a period of 2 years. The 2 MW facility was the first offshore wind farm in France. Dating back to 2013, this cooperative project combines the industrial and academic worlds. Seven European partners, the main three of which are French – Ideol, Bouygues Travaux Publics and École Centrale de Nantes – joined forces, with each contributing its particular expertise. The power generated is equivalent to the annual electricity consumption of 5,000 inhabitants.

A wind farm off the Fécamp coast

In partnership with Saipem and Boskalis, Bouygues Travaux Publics is constructing the foundations for the 71 wind turbines of the future Fécamp offshore wind farm, which will be located between 13 and 22 kilometres off the coast. With a total capacity of around 500 MW, this offshore facility should produce the equivalent of the domestic electricity consumption of around 770,000 people, i.e. more than 60% of the inhabitants of the Seine-Maritime department, where Fécamp is located. Bouygues Travaux Publics is contributing to the programme to diversify France's energy mix with carbon-free energy.

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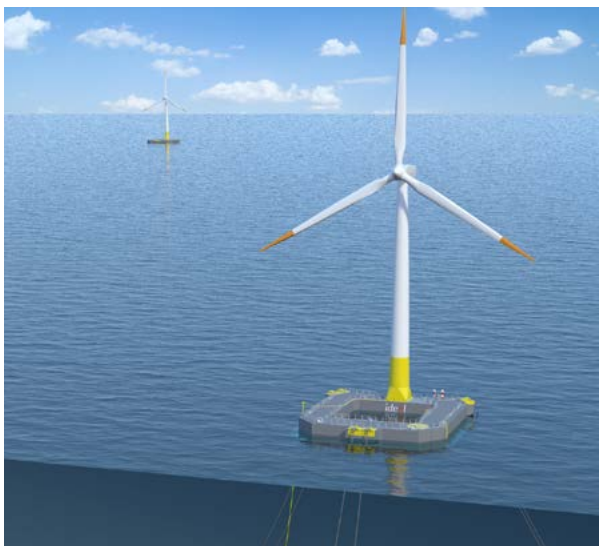

Solar energy

The solar energy market is highly developed. A number of industrial partners and investors are working alongside us on projects involving Bouygues Construction.

Photovoltaic solar farms and concentrated solar power plants

The sun represents an inexhaustible source of energy. To harness this source, Bouygues Construction designs, builds and operates solar farm projects for its customers, with a commitment to long-term energy performance. Bouygues Energies & Services, a subsidiary of Bouygues Construction, possesses acknowledged expertise in building and operating onshore and floating photovoltaic power plants. Among its many references are O'MEGA1, a mega power plant in the Philippines, and a floating solar farm in Piolenc, in the South of France.

© Julien Cresp

The photovoltaic market **in figures**

- **500 GW of installed photovoltaic power worldwide, equivalent to 2.1% of global power consumption.**
- **In France: 9 GW installed capacity producing the equivalent of 2.6% of electricity consumed in France.**
- **1.5 GW installed by Bouygues Energies & Services in France since 2008.**

© Didier Cocatrix

« Renewable energy markets offer wonderful opportunities for our Energies & Services businesses. To address the needs of our partners, in Europe as well as in Asia for more than 10 years, we have opted for innovation and industrialisation. An industrial approach is key to the performance of large and complex solar farm projects. Meanwhile, innovation enables us to develop these renewable energies in local settings without the need to occupy new surfaces: floating solar panels, agrivoltaics, solar canopies, etc. These solutions are available right now, and other innovations devised by our teams will make it possible to produce low-cost energy and provide access to green hydrogen, which is the energy of tomorrow. We have created a virtuous circle from solar energy to hydrogen. »

Pierre Vanstoflegatte
CEO of Bouygues Construction's Energies & Services division

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Photovoltaic shelters

Structures intended to provide shade while allowing the production of solar energy, photovoltaic shelters can make positive use of the storage of vehicles, for instance. Bouygues Construction offers its customers turnkey construction, operation and maintenance projects for photovoltaic shades to shelter their vehicles while generating solar electricity.

Green hydrogen

95% of hydrogen is produced from fossil energy. It is therefore a source of pollution, unless it is manufactured from renewable energies. This is known as green hydrogen. It opens up a number of promising prospects, including the replacement of fossil hydrogen in industry, the development of zero carbon mobility, energy storage, energy self-sufficient buildings, etc.). As a partner in the energy and digital transformation of regions, industries and buildings, Bouygues Energies & Services has developed a turnkey solution for producing and distributing green hydrogen. In this context, Bouygues Construction has invested in PowiDian, a specialist in “green” hydrogen solutions for regional energy self-sufficiency. Operating in the energy transition sector, PowiDian develops 100% renewable power generation solutions for isolated sites that are not connected to the power grid.

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« Green hydrogen is an innovation totally consistent with the principle of the circular economy since it allows the use of locally produced renewable energy to produce alternative carbon-free energy to be used for mobility or for industry. »

Caroline Mazzoleni
Smart Energy manager, Products and New Technologies department,
Bouygues Energies & Services

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Reducing impact when **buildings are in use**

Bouygues Construction is convinced that acting directly on how buildings are put to use can increase the number of levers for reducing the carbon footprint. The solutions developed by the group combine sustainable construction, energy efficiency, functional mix, soft mobility, biodiversity and new technologies adapted to people's lifestyles. The aim is to optimise the environmental performance of buildings and services with the aim of lessening the impact of their use on the environment.

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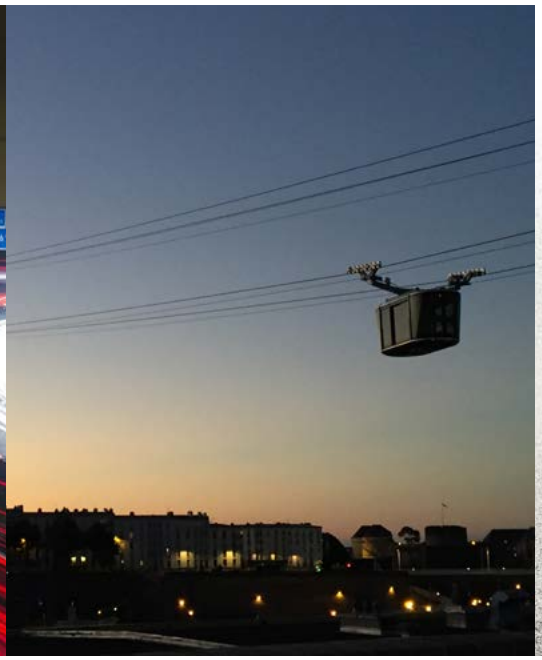

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Reducing the impact of mobility

Urban cable cars

Bouygues Travaux Publics is an expert in the construction of new modes of mobility, such as urban cable cars. This new mode of transport reduces traffic and lowers the carbon footprint of towns and cities.

Smart motorways

Au Royaume-Uni, Bouygues Energies & Services transforme les autoroutes en smart motorway, des autoroutes intelligentes qui utilisent des techniques de gestion active du trafic pour fluidifier la circulation, fiabiliser les temps de trajets, réduire les collisions routières et diminuer le bruit ainsi que les émissions nocives des véhicules.

Electric vehicle charging infrastructures (EVCIs)

Bouygues Energies & Services installs electric vehicle charging infrastructures in buildings and incorporates them into existing street lighting networks. It has created CityCharge, a new-generation charge point which will help revitalise the sustainable mobility sector thanks to its low cost and ease of installation.

Self-sufficient housing

ABC (Autonomous Building for Citizens) is the first concept of autonomous housing in France. Entirely designed by Bouygues Construction R&D teams along with architects Valode & Pistre, it was developed and constructed by teams from Linkcity (the Group's property development arm) and Bouygues Bâtiment Sud-Est for the city of Grenoble. It was handed over in September 2020. Residents are given support in reducing their consumptions in this new type of housing.

The building's self-sufficiency is based on three principles :

- **Frugal energy consumption (the envelope of the building is passive)**
- **Energy efficiency (domestic appliances rated A+++ are supplied and all lighting is LED)**
- **All energy and water consumed is locally produced and distributed.**

The ABC building aims to achieve **70% self-sufficiency in electricity**, a reduction of 2/3 of water consumption compared to a conventional apartment building, and a 40% reduction in household waste.

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« Teams from Losinger Marazzi, the Swiss subsidiary of Bouygues Construction, have been working on the concept the 2,000 W society for several years. This is a new way of constructing eco-neighbourhoods, with a target of 2,000 watts of electricity consumption per inhabitant per year, which amounts to a third of the current level of consumption in Europe. This is equivalent to achieving the comfort of the 21st century with the consumption levels of the 1960s. »

Pascal Baertschi
CEO of Losinger Marazzi

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Tackling our direct emissions

A commitment to sustainable development is at the heart of our priorities and those of our employees. There is no such thing as small actions, so we are constantly working to improve our working methods so that we can reduce our carbon footprint.

Our direct emissions account for 11% of our carbon footprint. We can reduce them through our daily actions.

Some very **clear goals :**

- **Reduce the carbon footprint of employee travel**
  - 90% of vehicles in the fleet to be green
  - 50% fewer international flights
  - 80% fewer domestic flights

- **Reduce the carbon footprint of our IT by 15% by 2025**

  Only replace smartphones when they no longer work, extend the life of technical computers, promote the use of audio-conferences instead of videoconferences, rationalise the pool of servers, delete dormant data, etc.

Practical measures on construction sites

- Building sustainably also means changing how we do things.
  - From 2021, we are committed to monitoring our energy consumption throughout our entire perimeter. A variety of solutions such as connected electrical cabinets or devices such as SmartImpulse are being rolled out across the group to achieve this. In particular, the analysis of electricity consumption will make it possible to identify potential savings such as abnormal consumption.
  - We install premium site huts with presence detectors, automatic heating control and better insulation.
  - We are launching experiments on electric and hydrogen-powered site machines..
  - We are studying alternatives to generators, such as batteries combined with solar panels.
  - We are training our employees in eco-driving techniques for construction site machinery in order to reduce fuel consumption
  - Thanks to geo-management, we are able to optimise travel.
  - We are increasing the number of power supply contracts guaranteeing decarbonised energy.

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About Bouygues Construction

Bouygues Construction is a global player in construction, with operations ` in more than 60 countries. It designs, builds and operates projects in the sectors of building, infrastructure and industry. As a responsible and committed leader in sustainable construction, Bouygues Construction sees innovation as its primary source of added value: this is “shared innovation” that benefits its customers at the same time as improving its productivity and the working conditions of its 56,980 employees. In 2019, Bouygues Construction generated sales of €13.4 billion.

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