



2020
Environmental, Social
and Governance Report

Antea Group

Understanding today.
Improving tomorrow.

www.anteagroup.fr





This is our **Communication on Progress** in implementing the Ten Principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

Environmental, Social and Governance Report

Antea Group France - July 2021

Thank you to the many employees who participated in the drafting of this new edition of our Communication on Progress, which also becomes Antea Group France's ESG report.

Comments and suggestions are welcome and can be sent to RSE@anteagroup.fr



2020 Environmental, Social and Governance Report

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our activities to the
Sustainable Development
Goals (SDGs)**



Pascal VOYEAU
*Managing Director
Antea Group France*

ESG... Sometimes the acronym does not quite do the subject justice. Every word in 'Environmental, Social and Governance' counts and reflects an aspect of the commitment. In 2020, companies have been extraordinarily responsible. Their social and societal commitment has often been decisive in the face of the crisis, and when it was still possible, they made the effort to control and reduce their environmental impact. As in so many other companies, the women and men of Antea Group France mobilized, took the lead, and took action to Improve Tomorrow. It is this daily adventure that we want to share with you in the following pages.

You will thus discover how the intensification of social relations enabled us to face the Covid crisis with maturity, consensus, and inventiveness.

You will read how we developed our environment and ethics charters, which are also operating and action guides for our professional lives. Finally, you will see how our work for community and business projects address the environmental and societal challenges of today or tomorrow, with many examples of projects for which our teams worked in 2020.

We also wish to discuss here our commitment for the months and years ahead. Following in the footsteps of the IRH group and its then chairman Yves Bernheim, we have been committed for several years to complying with the 10 principles of the United Nations Global Compact program. Not only do we renew our commitment to complying with the principles of the Global Compact here, but we wish to make our actions in support of Sustainable Development Goals (SDGs) of the United Nations program more visible.

In 2021, the SDGs for which we will organize our actions and track the impact are as follows:



We want to deploy our engineering to help preserve natural resources, limit the impact of human activities on the environment, and control the effects of climatic extremes on territories and activities. The looming climate crisis requires everyone's skills.

We are ready.

Pascal VOYEAU
*Antea Group France
Managing Director*

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Principle 1

Promote and comply with the protection of International Human Rights Law

Principle 2

Ensure we are not complicit in Human Rights violations

Principle 10

Take action against corruption in all its forms, including extortion and bribery

Human rights and ethics



Find the description of
the SDGs on pages 66/67

The United Nations' Universal Declaration of Human Rights and the Charter of Fundamental Rights of the European Union are an integral parts of the Antea Group's values.

Our code of ethics makes it possible to fight against all corruption, influence peddling, illicit agreements, favoritism or conflicts of interest.

Our human rights commitments 8

Our commitments in terms of respect for
ethics and professional conduct 10

We support the mission of the United Nations Global Compact to:

**MOBILIZE A MOVEMENT OF RESPONSIBLE
COMPANIES AND ECONOMIC STAKEHOLDERS
TO BUILD THE WORLD WE WANT TOGETHER**





1.1

Our Human Rights commitments

As the official local contact of the United Nations Global Compact, Global Compact France brings together more than a thousand companies and organizations around issues related to ESG and sustainable development. Global Compact France offers its members a voluntary commitment framework built on the basis of ten principles to be complied with in terms of human rights, labor law, the environment and the fight against corruption. It is also mandated by the UN to support the implementation of Agenda 2030 and adoption of the Sustainable Development Goals by the French business community.

Antea Group France has been a member of the Global Compact since June 18, 2003.

The first 2 principles of the Global Compact are about Human Rights.

The United Nations Universal Declaration of Human Rights of December 10, 1948, and the Charter of Fundamental Rights of the European Union of December 18, 2000, are integral parts of the Antea Group's values. The group defends the indivisible and universal values stemming from these texts, such as dignity, equality, solidarity, citizenship, and justice.

These values are found in every aspect of the functioning of the company, particularly in our management of Human Resources – no discrimination in hiring, diversity, gender equality (see page 14) - and in the application of our code of ethics in the exercise of our activities (see next page).

In addition, we ensure that the selection of our suppliers and subcontractors meet our requirements in terms of respect for Human Rights, of the legislation on labor rights and the environment. To do this, all of our suppliers are automatically assessed as required in our database according to HSQE (Health Safety Quality Environment) criteria. Audits of our main partners are carried out annually by our network of HSQE representatives.



1.2

Our commitments in terms of respect for ethics and professional conduct

Strengthening regulations for the fight against corruption and influence peddling constitutes a major challenge for our group, which is developing in France and internationally in highly complex and very competitive environmental engineering markets.

In 2020, Antea Group actively deployed its code of ethics to all employees and stakeholders. It is available to everyone on our website <https://www.anteagroup.fr/charte-ethique>.

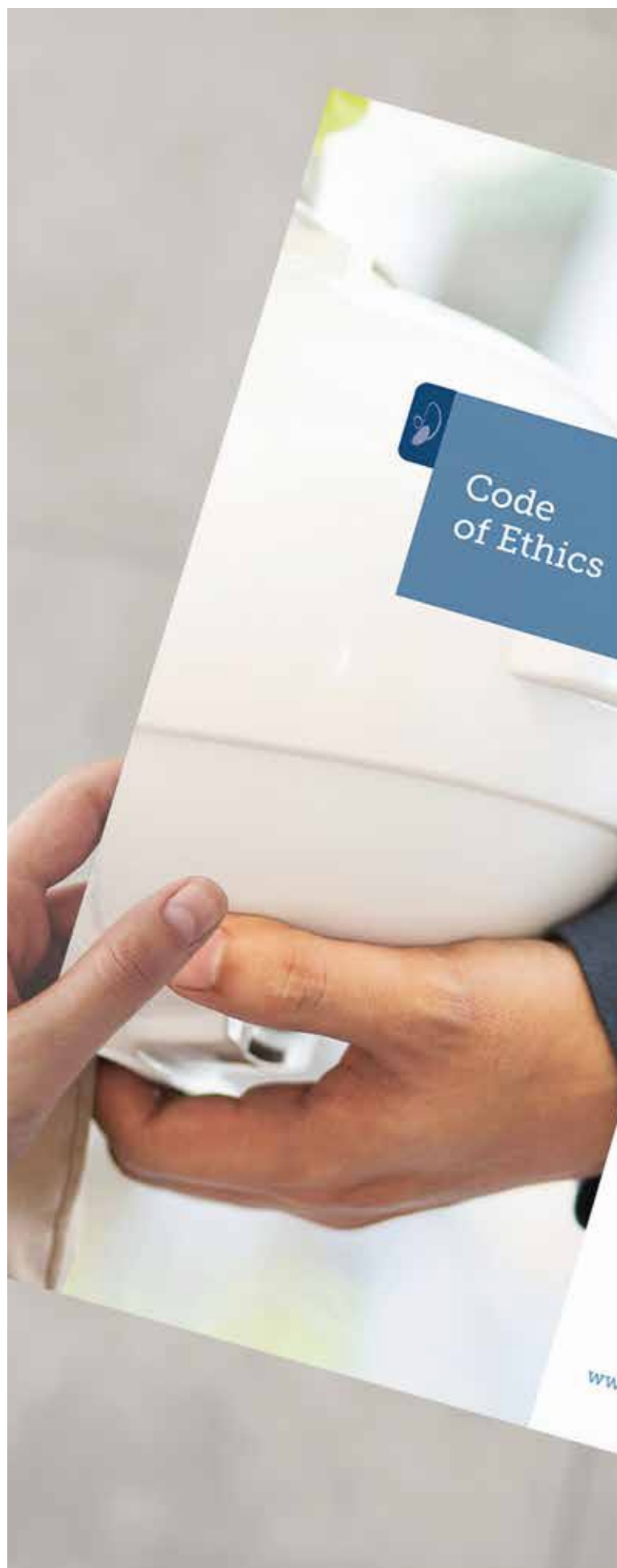
The Antea France and IRH Ingénieur Conseil **code of ethics** is a structuring element in our method of operating and enlightens the principles that drive us. It defines the rules of individual and collective conduct which must guide our actions and inspire our daily choices in accordance with our values and commitments. This simple and concise document shows the areas where we are vigilant as well as our commitments in business conduct. This code is intended for Antea Group teams, as well as its partners, suppliers, and subcontractors.

The constant application of this code and its operating four commitments: allow us to be recognized in the market as a company of exemplary integrity.

In order to ensure perfect knowledge of these rules and their application by all of our employees, we prepared e-learning modules at the end of 2020 dedicated to the code of ethics. This online training will be accessible and mandatory for all employees in 2021.

As part of our anti-corruption system, we have also started risk mapping work, a project that will be finalized in 2021.

Our Ethics Officer (ethique@anteagroup.fr) is available to everyone to answer all questions relating to the fight against corruption, influence peddling, unlawful agreements, favoritism, and conflicts of interest.





In the code of ethics, we set out four commitments:

- 01 We refuse all forms of corruption or influence peddling;
- 02 We give our consulting engineering opinions in compliance with professional codes of conduct;
- 03 We reject unlawful agreements and favoritism;
- 04 We are vigilant in preventing conflict-of-interest situations.

2



Principle 3

Respect freedom of association and recognize the right to collective bargaining

Principle 4

Contribute to the elimination of all forms of forced or compulsory labor

Principle 5

Contribute to the effective abolition of child labor

Principle 6

Contribute to the elimination of all discrimination in employment and professions

**Working conditions:
diversity, health, safety**



Find the description of the SDGs on pages 66/67

Our employees are at the heart of our ESG approach. It applies to working conditions, fight against discrimination, social dialogue, human capital development, diversity, health, and safety at work.

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2.1

Diversity and non-discrimination

In France, Antea Group has a rich history, with roots dating back to the 1950s. Today, Antea Group is an international environmental engineering and consulting company, with more than 3,200 employees worldwide, and a parent company in the Netherlands.

In France, Antea Group is made up of two legal entities: Antea France and its subsidiary IRH Ingénieur Conseil. Antea Group brings together multidisciplinary experts and consultants working in the fields of the environment, water, infrastructure, and environmental data management. Our French teams, made up of more than 850 employees and spread over 26 offices in metropolitan France and 5 in French overseas departments, work in the heart of territories alongside local stakeholders in metropolitan France, in the overseas departments, and internationally.



Integration seminar for new recruits (January 2020)

At Antea Group, we strongly believe in diversity. This is why we are implementing various actions aimed at promoting women, young people, and seniors in the company.

Gender equality

Published since 2019, following French Law No. 2018-771 of September 5, 2018, for the freedom to choose one's professional future, our Gender Equality indexes reflect our daily actions to maintain **overall scores above 75/100**.

Beyond these indexes, the diversity indicators in our workforce and our recruitment show that this equality value is part of our corporate culture.

The arrival of a child in a home can sometimes generate organizational difficulties, especially for young working mothers. To support future parents with this change, we have produced a parenting guide recalling the rights and the steps to be taken within the company. It addresses practical aspects such as maternity, birth and paternity leave, and possible arrangements for women who chose to breastfeed.

Gender Equality Index



80

Antea France

88

IRH Ingénieur Conseil

Workforce at the end of 2020



621

Antea France

243

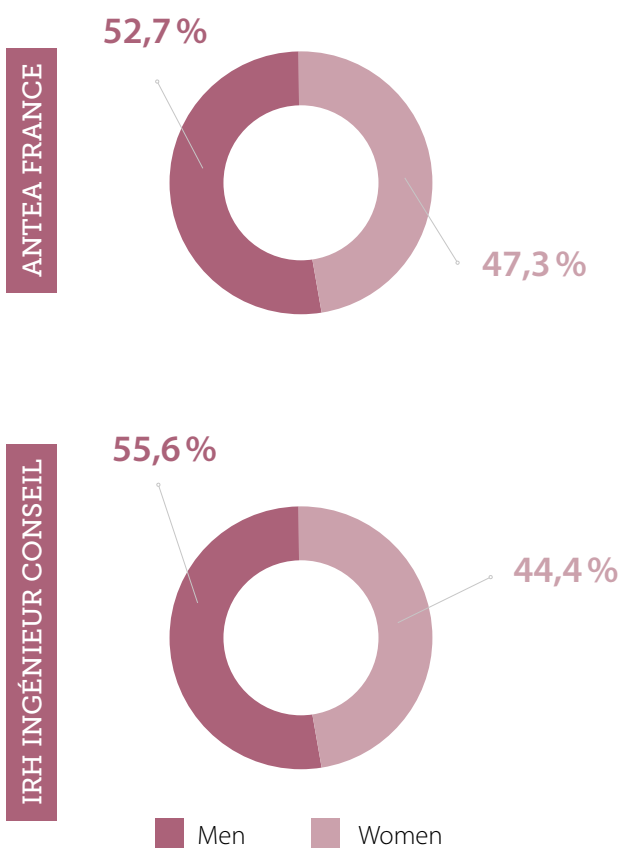
IRH Ingénieur Conseil



In both 2019 and 2020, we recruited almost as many women as men:

	2019	2020
New recruits	136	95
Young recruits * among new recruits	38 of which 42 % are women	46 of which 48 % are women
Work-study contracts	20 of which 60 % are women	16 of which 44 % are women
Interns	108 of which 46 % are women	77 of which 48 % are women

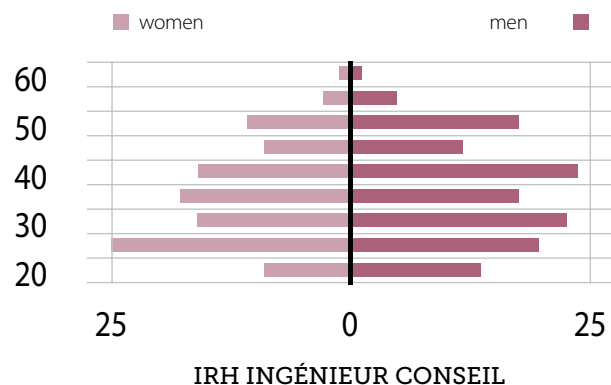
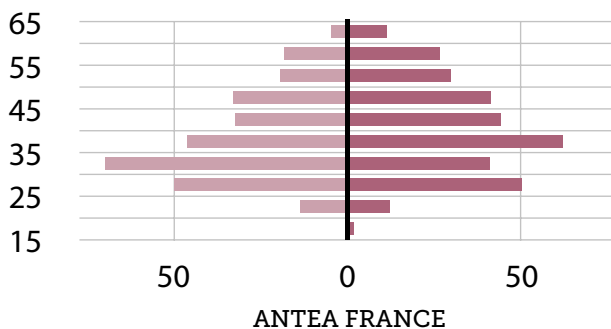
* Young recruits: graduates leaving educational institutions without professional experience excluding internships and work-study contracts



Integration and support for young people

Antea Group is mobilizing for the professional integration of young people: by supporting them in their training, we want to facilitate their access to employment. Young employees have a prominent place at Antea Group. Despite the unprecedented context of 2020 linked to the pandemic and the resulting economic crisis, we continued to welcome a large number of interns and students on apprenticeship contracts. The proportion of young graduates in our recruitment reached 48% in 2020 (see indicators on the previous page).

Age structure



In addition to integration, support for the latter (training, salary evolution) is an essential area for us to focus upon. A specific training course has been created for young recruits, and special attention is paid to annual increases to «boost» salary growth for those under 30.

NQT association or 'Nos quartiers ont du talent' (Our communities have talent)

We are continuing our partnership with the NQT association initiated in 2017. The objective of the association, formerly called 'Nos quartiers ont du talent' is to create bridges and forge special links between the business world and the young graduates furthest from being employed.

Professional sponsorship or mentoring is based on commitments between a working executive and a young graduate. By giving a few hours of their time, the employee changes the course of a young graduate's life by coaching him/her personally in him/her job searches, work-study programs or in their business creation project.

In 2020, 8 Antea Group employees signed up as mentors to help young graduates from priority neighborhoods or from low-income backgrounds to find employment. In 2021, we want to revitalize this partnership, in particular through an internal communications campaign and stepping up exchanges concerning feedback on experience with the association.

Find out more about the NQT association:
www.nqt.fr



Fight against sexual harassment and sexist conduct

Any type of harassment, whether psychological or sexual, carried out in the workplace, is a criminal offense (Article 222-33 of the French Penal Code) as it degrades the working conditions of the victim and employees, thus incurring the liability of offenders, but also that of the employer.

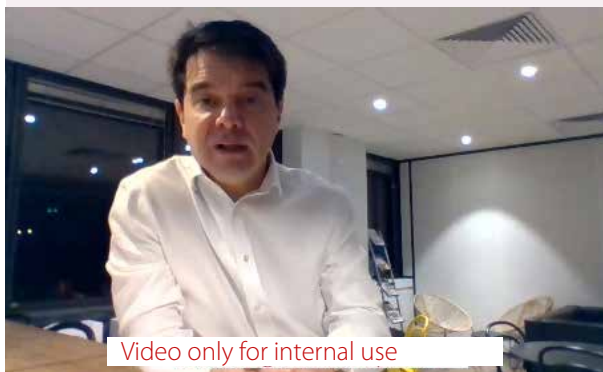
In 2020, two "sexual harassment and sexist conduct" officers within the Social and Economic Committees were appointed and trained, supporting Management's contact person in this matter.

In 2021, employee awareness-raising and training actions will be carried out in order to combat and prevent all sexual harassment and sexist conduct in the workplace.



22

Internal videos with informative messages from the Managing Director sent directly to all employees in 2020



2.2

Cohesion, health, and well-being at work

In 2020, which was a very unusual year, it was essential to rely even more than usual on team cohesion.

From the start of lockdown in March 2020, Senior Management and the various business units of the company stepped up internal communication. Despite the sudden closure of our offices, our Managing Director Pascal Voyeau spoke directly to all employees, regularly posting videos concerning the development of the health situation, instructions, and company news. Since then, these direct informative messages from Mr Voyeau to employees have continued and represent a cornerstone of Antea Group's internal communication in France.



2019 **02** 2020 **12**

Agreements signed with employee representatives



2020 Meetings with employee representatives

34 36

Antea France IRH Ingénieur Conseil

Our communication with employee representatives is close and high quality.

In 2020, it intensified and demonstrated our ability to adapt, thanks to the collective effort.



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JOIN Network

We involve our young employees in the life of the company. Created in 2019, the Join network aims to bring together employees under the age of 30 in order to meet, get to know each other, learn, have fun and contribute through their actions to the well-being of all Group employees. The team is also part of the international Join network, with Antea Group counterparts in the Netherlands and Belgium.



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Employees were eligible to a soft mobility package in 2020

By launching a survey on cycling in 2020, Join helped identify actions to be taken to promote this practice within the company. To this end, Management has implemented a soft mobility allowance, in application of the French decree of May 9, 2020, relating to the sustainable mobility package and of law no. 2019-1428 of December 24, 2019, on the orientation of mobility.



7 10

2019 2020

Number of users of the psychological helpline and support platform



8 34

2019 2020

Number of interviews and contacts

In order to facilitate the work-life balance, the company had already signed **remote working and disconnection agreements** in 2018 for IRH Ingénieur Conseil. **On June 30, 2020, they were signed for Antea France.** These agreements were approved by the employees of the two legal entities.

Number of remote working amendments signed by employees

ANTEA FRANCE

58

43 regular
15 casual*

2020

IRH INGÉNIEUR CONSEIL

24

5 regular
19 casual*

2019

18

15 regular
3 casual*

2020

**Casual or occasional remote working is an ad hoc arrangement of remote working. It can be set up on a case-by-case basis, subject to the prior signing of an amendment to the employment contract, to meet a particular and temporary need or in order to deal with unusual, unforeseeable and one-off situations.*

Covid crisis

During the Covid crisis, the company was particularly vigilant as regards the well-being of its employees.

During the second lockdown in autumn 2020, we made a point of providing each employee with a formal interview with their manager to find out about their own remote working/office presence preferences, and to take into account the employee's well-being.

820 employees thus had the opportunity, with their manager, to adapt their organization in an individualized way (hours, functioning).

Management approached sensitive individuals working exclusively from home, considered to be in difficulty by their manager, to check their state of health and to propose actions, in particular to contact the active helpline platform set up in 2018.

The use of this psychological helpline and support system has matured, following active internal communication about its existence, anonymity, and positive feedback. Thus, due to better knowledge of the platform, and probably the context of the pandemic, calls were more numerous in 2020, but remained contained, not indicating an explosion of managerial or organizational issues, for example.

Given the health provisions to be complied with, the Covid crisis has slowed down the actions that had been planned to develop team cohesion.

Of the two induction seminars for new employees initially planned, one was held at the start of the year: 39 new employees were able to both discover our company and our jobs, but also forge links with others thanks to team building and fun experiences.

39



New recruits participated in the 2020 integration seminar over 2 days

To date, we have been studying the possibility of digitizing part of our integration seminars.

Regarding the supervision teams, we had planned 3 managers' seminars which unfortunately could not take place in 2020. In 2021, we also plan to digitize certain training courses and are looking at the implementation of training on remote team management.



2.3 Safety

Our Health, Safety, Quality and Environment Management System

In 2017, Antea Group initiated the 'Smart Builders' Corporate project which aimed to give our group the same heritage of values and common functioning. The changes undertaken in our organization have impacted our operations and made us more coherent, more efficient, and more innovative. We are continuing the work started in this direction.

It is in this context that we have strengthened our national HSQE policy around 5 commitments we consider essential:

- 01 To provide high-level technical services with real added value for our customers**
- 02 To comply with our commitments in terms of deadlines**

03 To work on the development of innovative solutions, both from a technical and organizational point of view

04 To improve the quality of life at work for our teams

05 To be a responsible and exemplary company in terms of ethics, quality, health, safety and environmental protection

To deploy this policy, improve our overall performances and provide a solid basis for initiatives that will ensure our development and sustainability, we have chosen to rely on an integrated Health, Safety, Quality and Environment (HSQE) management system which, depending on our activities, complies with the following standards:



The OPQIBI qualifications (Engineering Qualification Body) validate the expertise and the experience of our engineers. We have about sixty qualifications, including several with the Reconnu Garant de l'Environnement label (Recognized Guarantor of the Environment), which highlights activities promoting renewable energies.



MASE is the standard among industrial stakeholders for the health and safety management of stakeholder personnel as well as their management of environmental impacts.

LNE SSP

The LNE SSP certification (National Laboratory of Metrology and Testing Polluted Soils and Sites) based on the NFX 31-620 standards judges the quality and conformity of services relating to polluted sites and soils. The areas cover diagnoses, decontamination engineering including pilots and remediation works, as well as regulatory certificates.

COFRAC

The Measurements Business Unit of IRH Ingénieur Conseil is accredited by Cofrac for part of its services:

- water and air emission sampling, measurement and control,
- control of occupational exposure to chemical agents in the workplace.

Cofrac Test Accreditations, no. 1-1767, 1-2460, 1-2461, 1-2462 and 1-2476, list of sites and scopes available on www.cofrac.fr



The CEFRI-E certification reference system specifies the organizational arrangements to be adopted by companies employing category A or B personnel working in nuclear installations.



Dikes and Dams accreditation

Antea France is registered by DIRECCTE Ile de France (Labor Division, Occupational Health and Safety Department) for the Environment team which acts as occupational risk prevention advisor for clients in the industrial and office real estate sectors.

Antea France has the Dikes and Dams accreditation issued by the Ministry of Ecological and Solidarity Transition, for our ability to carry out studies, surveys as well as monitoring of works relating to the safety of hydraulic structures as well as class C dams and dikes.

Senior Management has always stated its commitment to implementing a high-performance HSQE culture and system, shared by all and at all levels. For the Management of Antea Group, health and safety at work must be part of a preventive approach involving the company and the employee:

- A recognized HSQE system: **MASE certified since 2006** (Antea France)
- **A recognized commitment:** participation in the UPDS* Health & Safety Committee

- An HSQE system based on everyone's contributions: **221 HSQE reports in 2020**
- An HSE network of **5 business coordinators and 31 local correspondents**
- **164 HSQE events** (discussion meetings on a given HSQE topic, Health Safety awareness-raising communications or HSQE news flashes)
- **Risks managed** with low rates of accidents:

* Union of Site Decontamination Professionals

		2020	2018 Profession rate
Antea France	Frequency rate	5,12	7,31
	Severity rate	0,03	0,09
IRH Ingénieur Conseil	Frequency rate	5,08	7,31
	Severity rate	0,03	0,09

Frequency rate: number of accidents with work stoppage of more than one day, per million working hours
Severity rate: number of days compensated for, for 1,000 hours worked

Continuation of actions concerning Safety and Health

2020 was an opportunity to strengthen our shared culture around Safety and Health. The collective vigilance of all and respect for our provisions in terms of Occupational Safety and Health helped achieve our commitments and objectives in terms of Safety and Health:

- Deployment of our Business Continuity Plan linked to the COVID context.
- Updating of our HSE instructions and operating methods to integrate the COVID sanitary context.
- Updating of the Single Professional Risk Assessment Document for integration of COVID topics and remote working.
- Strengthening of the HSQE team - appointment of an environmental policy manager.
- Maintenance of the Safety culture managed by a HSQE network always deployed as close as possible to employees (branch correspondents, business coordinators, HSQE delegation, and technical department).
- Reinforcement of precautionary measures where there are dangerous situations that may be encountered regularly in the context of our professions (lone worker, work at height, in confined spaces, chemical risk, etc.).
- Maintenance of collective training actions; in accordance with the LNE obligation, and despite the health context, 100% of the staff in our Environment Business Department are first aiders.



ANTEA FRANCE

Initial first-aid training

30 people
or 480 hours

First-aid training/retraining

46 people
or 368 hours

IRH INGÉNIEUR CONSEIL

Initial first-aid training

4 People
or 64 hours

First-aid training/retraining

11 People
or 88 hours

- Development of good HSE practices with regular participation in UPDS working groups whose 2020 theme was 'monitoring the chemical exposure of workers in Polluted Sites and Soils'.
- Awareness of road risks (main risk in our Single Professional Risk Assessment Document): maintenance of training for young drivers, regular awareness-raising campaigns in branches, prevention activities, provision of new service vehicles (<4 years) fitted with Safety options (Bluetooth, accident safety kit, fire extinguishers, antipollution kit for certain activities).
- RSI (repetitive strain injuries): maintenance of training in movements and postures specific to each job (e.g.: plate lifting training for water-related jobs), purchase of material to help with handling, on-site awareness-raising events.
- Employee exposure monitoring:
 - Increase in-situ exposure measurement campaigns;
 - Updating of the monitoring methodology to confront recurring omissions in the field by employees;
 - Final configuration of our exposure monitoring tool to better adapt it to our needs;
 - Potential presence of asbestos - maintenance of procedures aimed at reducing the dispersal of dust when drilling slabs or asphalt.

A year marked by the COVID-19 pandemic

The COVID-19 pandemic has brought about many changes that we have all had to deal with. Our organization has been able to demonstrate responsiveness with the setting up of a crisis unit in February 2020. Human and material resources were thus deployed from the first lockdown, allowing us to pursue almost all our missions. This coordination was made possible thanks to the following dedicated organization.

A) The France HSQE Manager acts as the national COVID contact. She is assisted to do this by:

- a Health & Safety contact, for monitoring personal protection equipment and general supplies necessary to comply with health recommendations, as well as for setting up awareness-raising materials (internal displays and awareness-raising/welcoming new employees with safety training);
- HSQE facilitators - COVID business contacts - in particular in charge of providing support to project teams for the development of Risk Analysis Sheets specific to each intervention;
- the site managers - COVID site contacts - for the safety and hygiene of our permanent premises and compliance with HSE instructions within them.

Any employee can get in touch with these people to obtain additional information on the measures to be



complied with for taking into account the COVID-19 risk in their activities or to report a proposal for improvement or a difficulty in implementation.

B) A COVID-19 monitoring committee was set up from the 1st lockdown. Members include:

- *The Managing Director*
- *the Human Resources Director*
- *the Sites Director*
- *the France Technical Director*
- *the HSQE Manager*
- *a representative of the Hygiene, Safety and Working Conditions Committee of each Social and Economic Committee*

This committee is responsible for monitoring the effectiveness of the measures implemented, analyzing reports and feedback from the teams and developing procedures as required. It meets on a weekly basis.

C) Internal communication is provided by Senior Management on a regular basis, to clarify the evolution of the situation and the organization of work within the company.

D) A psychological helpline and support unit are also in place (see page 19).

Thanks to this entire system and to good compliance with social distancing and health recommendations, our 31 sites across metropolitan France and in the overseas departments have not been subject to any contamination outbreak.

3

24



Principle 7

Apply a precautionary approach to environmental issues

Principle 8

Take initiatives to promote greater environmental responsibility

Our environmental commitments
in the operation of the company



Find the description of the SDGs on pages 66/67

Our environmental commitments are led by all the women and men working within Antea Group. It is therefore natural that we work every day to improve our performance in this area.

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Environmental policy

Antea Group France

Antea Group

Understanding today.
Improving tomorrow.

The coming decade is decisive for controlling global warming. The Paris Agreement of the COP 21 explicitly states that a clear reduction in greenhouse gases (GHGs) must occur by 2030. We want to reflect this conviction in our engineering projects but also in our daily working practices.

Our adhesion to the United Nations Global Compact program has enabled us to initiate our first commitments in terms of sustainable development. Our Ecovadis Gold Medal for the Environmental, Social and Governance (ESG) performance of Antea Group France confirms that we already have the keys to advance in the right direction for the company, for the employees, partners and customers.

We wanted to continue our commitment to sustainable development by signing the Syntec Ingénierie "Climate Charter". We are therefore committed to being proactive in our missions and projects to reduce their carbon footprint, as well as to adopting sustainable low-carbon practices that are efficient from the point of view of resources and the environment in general.

In 2020, we are making three first commitments to make this happen:

- We are taking the decision to limit the impact of travel related to the company's activity by switching at least 10% of the fleet to a hybrid fleet. For this, we favor vehicles built in France.
- We are initiating an action program across all of our sites in order to continue waste sorting, reduce their quantity, and eliminate the use of single-use plastics by the end of 2020.
- In 2020, we will audit the company's carbon footprint, which will constitute the benchmark against which we will define our emission reduction targets.

2020 will set the baseline conditions. These commitments are those we are conducting this year, and they will allow us to begin our process. They are neither exclusive nor limiting. Environmental audits in our branches as well as round tables to get ideas from as many people as possible will also enable us to complete our baseline study so that we can better define our priorities for action.

We can and want to be proactive in helping our clients improve the environmental quality of their projects and minimize GHG emissions. This commitment is an integral part of our company plan.

For more information

Contact us:



Pauline VALLEZ

Environmental Policy Manager
pauline.vallez@irh.fr
05 34 42 27 70 / 06 40 66 74 59



Nadra SIMON-TAJAN

HSSE Manager
nadra.simontajan@anteagroup.com
06 07 76 80 16



Pascal VOYEAU

Managing Director



3.1

Our 2020 environmental policy

Each year, we initiate new thinking to strengthen our environmental policy. The commitments we make are based on extensive in-house consultation and with our partners to mobilize our driving forces in areas for improvement. Better knowledge of our operating, our work practices and their impacts on the environment facilitates the direction of thinking towards more virtuous behavior.

In 2020 we carried out a full survey of the company. Actions were taken to raise awareness among all stakeholders, to encourage more low-carbon practices, and to set ambitious objectives for the coming years.

The 'Engineering for the Climate' Charter



Syntec-Ingénierie has offered all of its member companies the opportunity to sign up to the 'Engineering for the Climate' Charter, thus fulfilling their daily commitment to the climate. Through this charter, the signatories undertake to:

- Be proactive in the missions and projects they carry out to reduce carbon footprint.
- Sustainably adopt low-carbon practices in house and reduce their own greenhouse gas emissions.

Antea Group has been a signatory of this charter since 2019: <https://www.syntec-ingenierie.fr/charte-climat/>

The commitments made in 2020 are:

- **To reduce the impact of travel related to the company's activity;**
- **To change day-to-day habits at work;**
- **To monitor and control the company's carbon footprint.**

The actions implemented in 2020 made it possible to bring these commitments to fruition through real improvements in the operation of the company.

3.2

Survey of our environmental practices

To harmonize our practices and encourage more virtuous ones, it is essential first to have an overview of our company's operation and its impacts.

Audit of our sites



In 2020, a full audit was carried out with the aim of establishing an inventory of local operations within Antea Group sites in France as well as team practices. The results of this work show clear awareness of environmental issues through the adoption of eco-responsible practices, but also areas for improvement to be pursued.

- **Up to 9 types of waste are recycled** (paper, glass, plastics, metals, toners, batteries, electrical and electronic equipment, wood, biodegradables).
- **95% of sites** reuse the paper printed on the front side only as scrap paper.
- **Giving a second life to everyday objects**, making exchanges, loans, donations between colleagues, for example by setting up libraries, video libraries in break rooms, are part of the habits on 17% of our sites.
- **16% of sites** have set instructions to save electricity (incentive messages sent by mailshot or during talks on sites).

Promoting these practices will be one of our objectives in 2021.



Antea France energy audit

The French Energy Code provides that an energy audit be carried out every 4 years for large companies with more than 250 employees, so that they can implement an energy efficiency strategy for their activities. The energy audit consists in carrying out an inventory of the energy performance of a company and makes it possible to identify sources of energy savings. It concerns buildings as well as transport and processes.

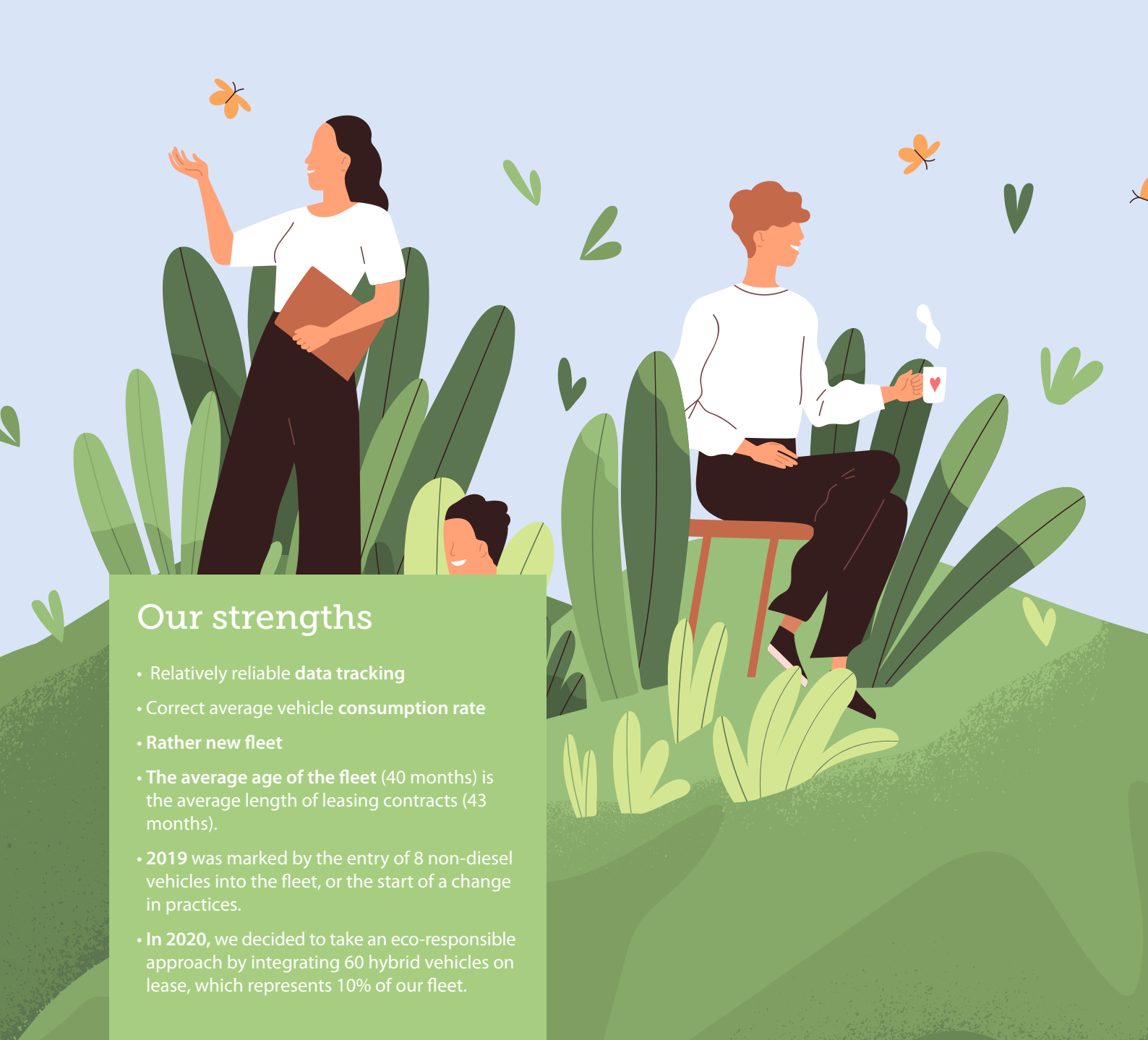
2020 was the year of the renewal of Antea France's energy audit. Our subsidiary IRH Ingénieur Conseil was not affected by this obligation.

To reach the threshold of 80% of the energy bill necessary for this audit, Antea France has chosen to carry out an audit of its fleet of vehicles as well as the offices in Antony. According to the 2019 invoices, the reference year chosen for the audit, the sum of these two scopes covers 81% of the company's energy bills.

Antea France's vehicle fleet in 2019 consisted of 426 vehicles. The fleet consisted of 85% Light vehicles (365 LV) and 15% Light Commercial Vehicles (61 LCV). Overall, the vehicle fleet is quite heterogeneous, and includes 31 vehicle models. However, 4 LV models constitute 70% of the total fleet and 2 models represent two thirds of the number of utility vehicles.

The audit was carried out according to 4 assessment criteria:

- **Vehicles** (composition of the vehicle fleet, consumption, distances travelled, cargo and/or passengers)
- **Driver** (use of the vehicle, productive time/ distance, training of employees in eco-driving)
- **Organization** (criteria for choosing and renewing vehicles, vehicle supply and maintenance methods, planning)
- **Management** (performance objectives, indicators, internal communication)



Our strengths

- Relatively reliable **data tracking**
- Correct average vehicle **consumption rate**
- **Rather new fleet**
- **The average age of the fleet** (40 months) is the average length of leasing contracts (43 months).
- **2019** was marked by the entry of 8 non-diesel vehicles into the fleet, or the start of a change in practices.
- **In 2020**, we decided to take an eco-responsible approach by integrating 60 hybrid vehicles on lease, which represents 10% of our fleet.

Our areas for improvement

- Absence of low emission vehicles
- New vehicles with higher horsepower
- Many vehicles are over- or under-used



Targeted objectives:

- 01

REDUCE THE CONSUMPTION OF FOSSIL FUELS to make savings and take into account the scarcity of resources
- 02

REDUCE GREENHOUSE GAS EMISSIONS RELATED TO BUSINESS TRAVEL and thus the company's contribution to global warming
- 03

MOBILIZE EMPLOYEES ON ENVIRONMENTAL OBJECTIVES by having efficient travel: justify the act of traveling, as a way of acting towards achieving the 2 previous objectives.



Antea Group Bilan Carbone® (carbon footprint)

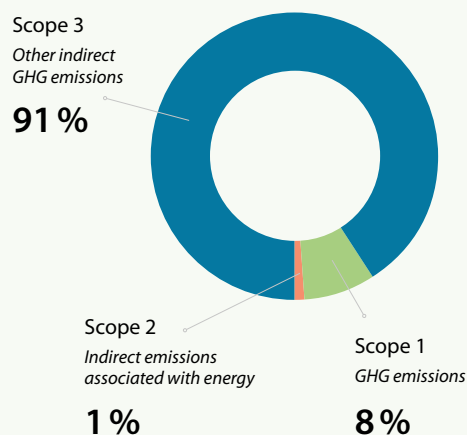
Aware of the need to reduce our carbon footprint in the face of climate change, our Management has included in the corporate project and in the environmental policy of Antea Group the objective of reducing GHG emissions both in its engineering missions and in its daily practices.

The businesses of Antea Group are resolutely focused on respect and protection of the environment, decontamination, and the sustainable use of natural resources. We therefore wanted to go beyond the regulatory obligation of carrying out a Greenhouse Gas Emissions Assessment which reports the emissions from scopes 1 and 2 within the meaning of ISO 14069 (see definitions in the table below). We are committed to carrying out a Carbon Footprint audit, a more comprehensive approach to accounting for and reducing greenhouse gas emissions, which takes into account both so-called "direct" and "indirect" emissions (scopes 1, 2 and 3).

Overall result of our 2019
Bilan Carbone® (carbon footprint)

12,054
tons of CO₂ equivalent

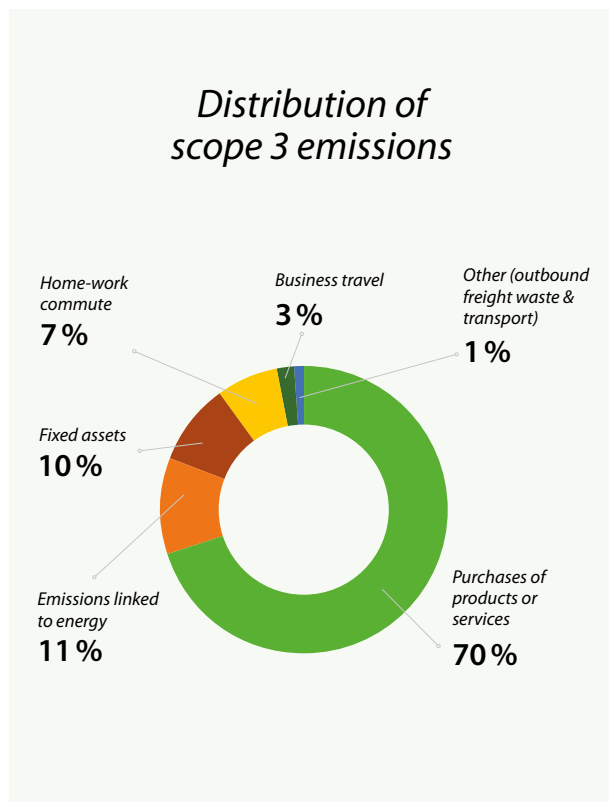
*Distribution of
emissions by scope*



Emission categories	N°	Emissions items	Items taken into account in our Bilan Carbone®
SCOPE 1 Direct GHG emissions	1	Direct emissions from static combustion sources	
	2	Direct emissions from mobile thermal engine sources	x
	3	Direct emissions from non-energy processes	
	4	Direct fugitive emissions	
	5	Emissions from biomass (soils and forests)	
SCOPE 2 Indirect emissions associated with energy	6	Indirect emissions linked to electricity consumption	x
	7	Indirect emissions linked to the consumption of steam, heat, or cold	
SCOPE 3 Other indirect GHG emissions	8	Energy-related emissions not included in items 1 to 7	x
	9	Purchase of products or services	x
	10	Fixed assets	x
	11	Waste	x
	12	Inbound goods transportation	
	13	Business trips	x
	14	Upstream deductible	
	15	Upstream leased assets	
	16	Investments	
	17	Transportation of visitors	
	18	Outbound freight transport	x
	19	Use of products sold	
	20	End of life of products sold	
	21	Downstream deductible	
	22	Downstream Leasing	
	23	Home-to-work commutes	x

FOCUS on the distribution of scope 3 emissions

91% of our greenhouse gas emissions correspond to scope 3 "Other indirect GHG emissions". The latter includes, amongst other things, the item 'Purchases of products or services' which represents more than 2/3 of our scope 3 emissions.



The item 'Purchases of products or services' is the largest in the company's overall carbon profile.

One third of it is made up of our purchases of various services such as intellectual services, training, and printing.

The other third is in the «construction» category. This result should be put into perspective. Indeed, the 'construction' emissions factor chosen on the ADEME carbon basis is the one that most closely resembles hydro/geological and geophysical works as well as drilling/boring works for which we call on external service providers. This factor generally concerns more «public works» type constructions, but it remains the most relevant with regard to other emission factors proposed by ADEME.

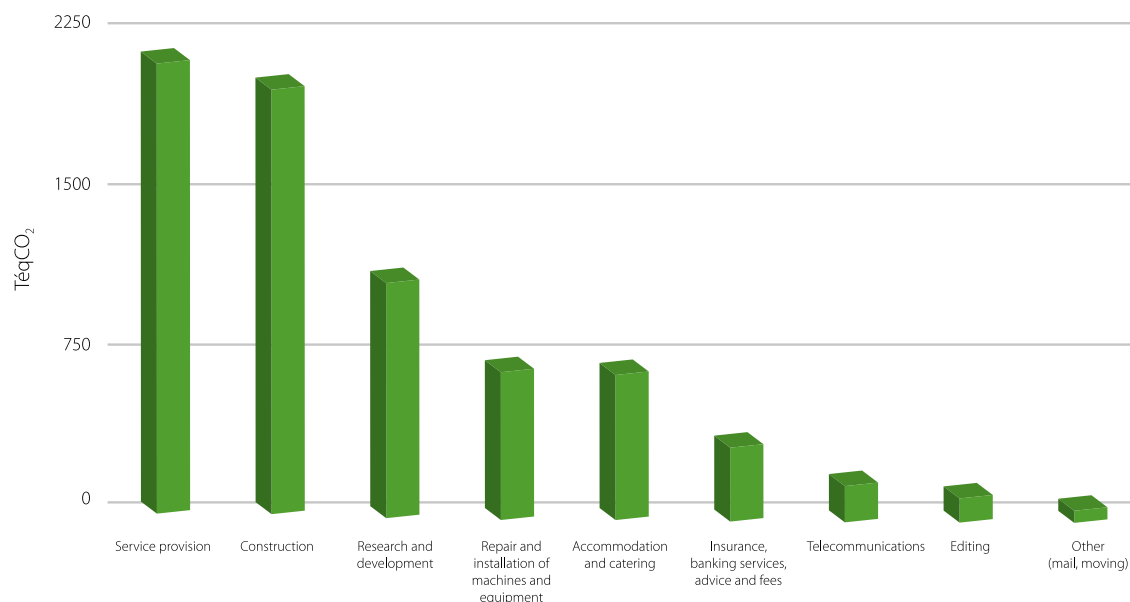
In the years to come, the item purchases of products or services will be the subject of actions to reduce their emissions.

Actions are currently under way and pursued throughout 2021 in terms of the following sub-items:

- **Waste:**
 - Continue the deployment of 5-stream sorting on 100% of our sites,
 - Establishment of sorting of disposable personal protective equipment (PPE).
- **Travel:**
 - Fleet management in order to introduce less polluting vehicles,
 - Management of our train journeys to encourage this type of travel.

FOCUS on the Purchases of products or services

Breakdown of CO₂ emissions from the 'Purchases of products or services' item



3.3

Progress made in 2020 in our practices

Thanks to everyone's efforts, the 3 commitments made within the framework of Syntec-Ingénierie's Climate Charter in 2020 (see page 26) have been complied with.

- **Reducing the impact of the company's business-related travel**

In 2020, we converted 10% of the vehicle fleet into a hybrid fleet.

- **Changing day-to-day habits at work**

The provision of reusable water bottles for field staff makes it possible to restrict single-use plastic waste. The initial goal was to provide a water bottle to 90% of field staff (i.e., 510 water bottles). In total, 668 reusable water bottles have been ordered for all staff, of which 78% for field staff.

This action avoided the consumption of 23,000, 1.5L plastic bottles (i.e., consumption equivalent to 22 barrels of oil).

In 2021, we aim to offer every newcomer a reusable water bottle.

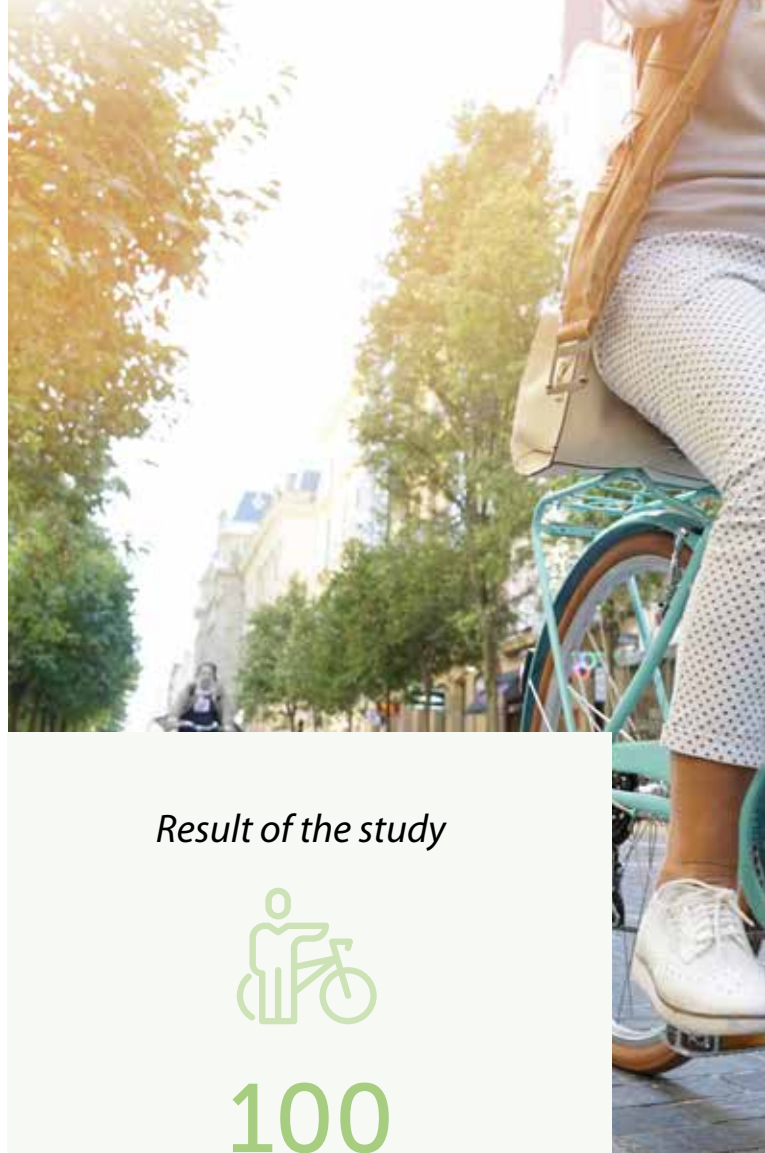
- **Monitoring and controlling the company's carbon footprint**

The Bilan Carbone® carried out on our 2019 data enabled us to set the first indicators to monitor our carbon footprint.

Cycling at Antea Group

As presented previously (see page 18), JOIN's first mission in 2020 was for all employees, and concerned cycling for the commute from home to work.

In order to get an overview, identify expectations, desires and hesitancy on cycling, employees were invited to answer a questionnaire on this matter.



Result of the study



100

Individuals cycle almost
daily to the office

130

Other employees with an interest
in cycling on the home-to-work
commute



As a reminder

76

Employees have
benefited from the
soft mobility
package based on
the study results.



WEEE recycling

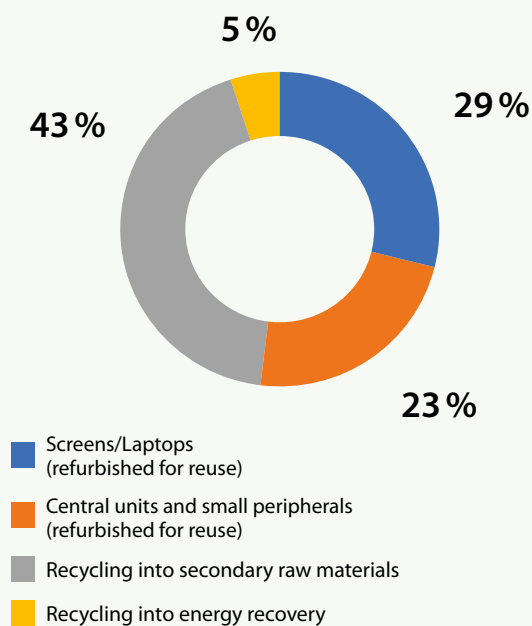
Our IT department collects the waste electrical and electronic equipment (WEEE) from all our agencies. Since July 2019, our provider NORIP has recycled waste generated by the economic activity of administrations, local authorities, and companies in Loiret (department where our head office and our IT department are located) in a circular economy approach: re-employment, repair and reuse are systematically favored.



603 KG

Quantity of WEEE * collected in
2020 at Antea Group

Recycling of our WEEE



* WEEE: Waste Electrical and Electronic Equipment

Mobile phones

Since September 2019, Betoobe has been our service provider for managing our phone stock. It provides "fleet management support", the "deployment of terminals", but also, and above all, "repairs and troubleshooting", "return and recycling".

En 2020 :

- **37 terminals were repaired** (75%)
- **7 terminals were recycled** (15%)
- **5 terminals were under warranty** covered by the manufacturer (10%)



3.4

Responsible purchasing

Responsible purchasing refers to the purchase of goods or services from a supplier or provider selected in view of minimizing environmental and societal impacts and promoting good practices in terms of ethics and human rights.

A pilot operation was carried out during the fitting out of our Antony premises including analysis of the materials used for carrying out works and furniture restocking: carpet and furniture with recycled and recyclable materials, purchase of furniture with low emissions of formaldehyde, and limiting the use of plastics.

This operation is intended to be repeated with each fitting-out or re-fitting out of premises, as was the case for our sites in Rouen and Clermont-Ferrand.

Other thinking in this area has been done in 2020 for the purchase of reusable water bottles and a water fountain for one of our sites.

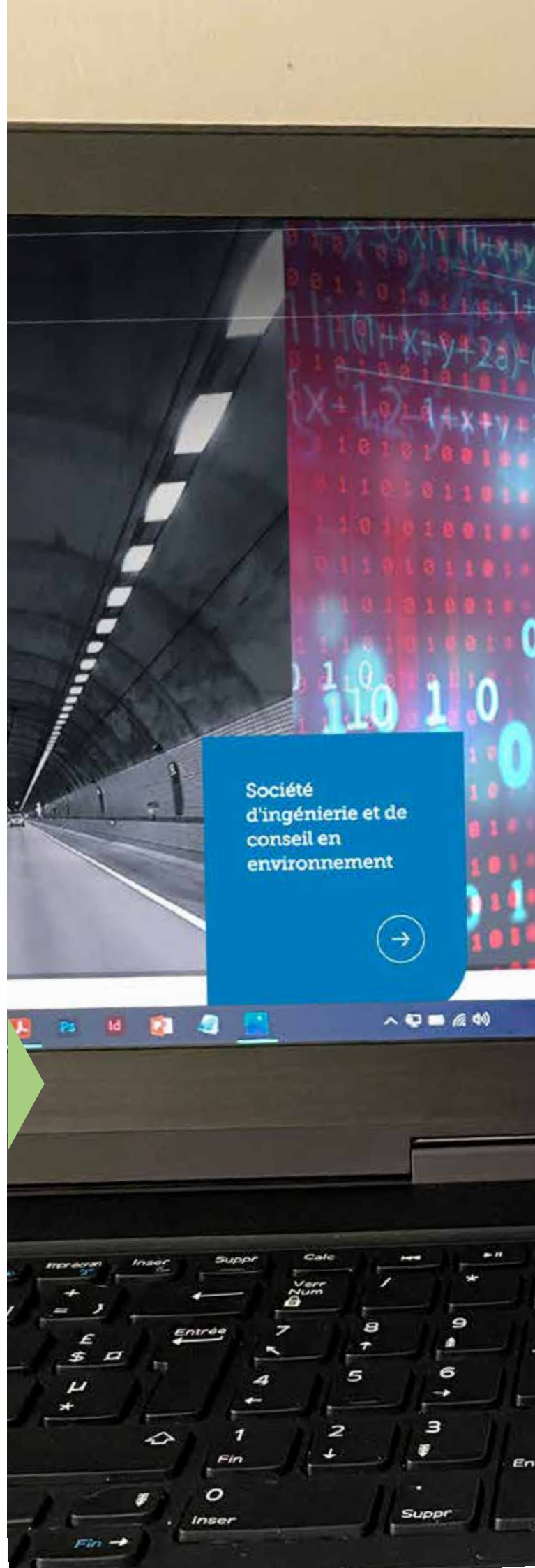
34

Practical example of our responsible approach

For the purchase of reusable water bottles for our employees, we chosen a supplier of eco-responsible products recognized for its respectful commitment to people and the environment. It ensures that all manufacturers are BSCI certified (Business Social Compliance Initiative) - an initiative led by companies that are committed to improving the working conditions in their international supply chains.

Our approach to purchasing hybrid vehicles gave priority to manufacturers that have production units in France.

Throughout 2021, we will raise awareness among 100% of our site managers and assistants as regards responsible purchasing.





2020 local approaches

Reuse of furniture

When moving the Bihorel branch, part of the office furniture was transferred to the new tenant, in order to give this furniture a second lease of life.

Waste and integration contracts

We work with companies or associations offering professional integration contracts for the collection and sorting of our waste.

- **ELISE** for the recovery of recyclable waste for our branches in Strasbourg, Lezennes and Rillieux-la-Pape
- **Les Joyeux Recycleurs** for the recovery of recyclable waste for the Gennevilliers branch
- **Greenburo** for the Labège and Toulouse branches
- **Arbre Vert** for the Nantes branch
- **Feuille d'érable** for the Pérols branch

25% of our branches use a company or association offering professional integration contracts for the sorting of their waste.

4

36



Principle 9

Promote the development and dissemination
of environmentally friendly technologies

Contributions of our activities to
the Sustainable Development Goals (SDGs)



Our reaffirmed desire to improve the company's environmental performance is also expressed daily in the environmental management of our projects for better consideration of the SDGs. Continuous improvement of our environmental engineering meets the needs of our clients, their ambition to control the environmental footprint of their projects, in a national or international context that is increasingly demanding in terms of sustainable development.

Water sector	38
Environment sector	44
Infrastructure sector	50
Environmental data measurement and management sectors	56
Research & Development - Innovation Scientific activities	62



Find the description of
the SDGs on pages 66/67

4.1

Water sector

- > Sustainable management of water resources
- > Energy recovery linked to water
- > Drinking water and sanitation infrastructure
- > Hydraulic infrastructure and aquatic environments - flood risk control
- > Industrial water treatment

Sustainable management of water resources



Water has become a major concern, and climate change is only increasing the pressure on water resources.

In France, the SDAGEs (Master Plans for Water Development and Management) applicable to major river basins, and the SAGEs (Plans for Water Development and Management at a more local level), are planning tools for balanced management of water resources. We support water management stakeholders to define these major focuses, the water quality and quantity objectives, and the actions necessary to ensure the protection of the water condition and of aquatic

environments. In France and internationally, Integrated Water Resources Management (IWRM) relies on consultation between stakeholders in a given territory in order to reconcile the requirements of different uses: drinking water, agriculture, industry, leisure, etc., while preserving aquatic environments. Our hydrogeologists work together with our geomatics specialists and data scientists to support these projects using mapping, databases, online platforms, modeling and other digital services.



17%

of the national territory covered by our integrated management services in 2020



3 Millions

inhabitants affected by our integrated management operations in 2020



1,631

Municipalities concerned by our integrated management operations in 2020



Examples of 2020 projects



Charente 2050: quantitative water management with consideration of climate change

The Charente catchment is particularly vulnerable to the impacts of climate change, in particular with a foreseeable drop in water flow rates of rivers, groundwater level, and increased difficulties in quantitative management. Through a prospective study, our engineers support the local authorities in defining a policy to adapt the uses of water to the effects of climate change by 2050. They also develop exploratory scenarios and lead workshops in consultation with local stakeholders.



Study and monitoring of water resources of the Niger river in a region severely affected by climate change

As the primary source of water for more than 100 million inhabitants, the Niger River basin is shared by 10 countries (Guinea, Mali, Niger, Benin, Nigeria, Cameroon, Burkina Faso, Côte d'Ivoire, Chad, and Algeria). Our international hydrology and hydrogeology experts, and databases and modeling specialists help reinforce the network monitoring the water resources of the basin over 1,750 km of the river in Mali and support the authorities in the monitoring and management of these resources.

Energy recovery linked to water

Energy recovery from the subsoil or water infrastructure contributes to the development of an energy mix favoring renewable sources. Geothermal energy produces heat and/or electricity using the heat from the subsoil. With different technologies used depending on the subsoil, it represents a renewable, local and versatile source of energy, which is exemplary in terms of environmental protection while controlling the energy bill. Today, it is a high-performance and recognized solution in the context of the energy transition in a given area, for heating, urban cooling, air conditioning or preheating of domestic hot water.

In addition, wastewater treatment plants contain other renewable energy generation methods: recovery of heat from wastewater, production of methanization biogas from sewage sludge and micro-turbining of water flows. Antea Group is involved in all these sectors to expand the energy mix in various regions.



90

Geothermal projects
launched in 2020



Examples of 2020 projects



Energy production by anaerobic digestion in agricultural installations in Wallis and Futuna

Within a dual framework of the fight against pollution originating from pig excrement and achieving energy autonomy on the two islands by 2050, studies are being carried out on the recovery of the energy potential of fermentable organic materials. They will be followed by the creation of pilot anaerobic digestion facilities. Studies and project management are carried out by Antea Group and IFIP (French Technical Pork and Pig Institute).



Study of the recovery of geothermal resources in Grenoble conurbation

In its Climate Air Energy Plan, Grenoble-Alpes Conurbation has set the objective of reducing greenhouse gas emissions by 35% between 2005 and 2020. To increase the production of renewable heat by 60%, it is putting incentives in place. The geothermal registry, an online tool on which Antea Group works to assist the conurbation, is intended to encourage professionals to mobilize geothermal resources, depending on the location of their project. This tool allows them to know the context, the geothermal potential of the plot, the regulatory framework and best practices for design, implementation, and operation.

Drinking water and sanitation infrastructure



Antea Group is strongly committed to the development of resilient infrastructure for the production and distribution of drinking water, and the collection and purification of wastewater and rainwater. The projects relate to the construction of new infrastructure or the asset management of ageing facilities. A better knowledge of the infrastructure in a given region makes it possible to target actions to improve their performance, guarantee their compliance with regulations, and renew them in certain cases. To do this, Antea Group identifies their deficiencies (water leaks, poor connections to the drinking water/rainwater/wastewater networks, etc.), and organizes their self-monitoring using appropriate instrumentation. Digitization applied to water management allows progress in terms of project management.

Antea Group, a pioneer in the management of environmental data, developed software to design context-adjusted strategies and optimization of water-related infrastructure.

Internationally, Antea Group mobilizes its expertise on numerous development aid projects that directly

contribute to 'ensuring universal and equitable access to drinking water, at an affordable cost, and ensuring access for all, under equitable conditions, to adequate sanitation and hygiene services' (SDG6).



265

Sanitation-related projects launched in 2020



Example of 2020 projects



Reinforcement of the drinking water supply system for the city of Niamey (Niger)

The government of the Republic of Niger launched a project to reinforce the drinking water supply system in Niamey, a rapidly developing city. Funded by the Agence française de Développement, the European Investment Bank, the ORIO program of RVO, the Netherlands Enterprise Agency, and the Belgian Export Investment Fund, the project includes:

- the extension of the existing treatment plant, for an additional production of 40,000 m³/d, that is to say more than 50%,
- the construction of 3 new reservoirs,
- the extension of the distribution network of approx. 260 km of pipelines,
- construction of 15,700 individual connections for vulnerable populations and 180 water fountains.

The Antea Group - Beria consortium provided technical assistance to the contracting authority. The project improves the quality of the drinking water service for nearly one million people who are already connected to the network and provides access to drinking water for nearly 200,000 additional people.

Hydraulic infrastructure and aquatic environments

Control of flood risks



With climate change, regions are subject to increasingly extreme and frequent meteorological hazards which require adaptation of risk management policies, in particular during episodes of flooding (floods, coastal flooding). Our expertise is based on our knowledge of hydraulic operation (hydrology, hydromorphology, etc.) and our mastery of digital tools (hydraulic modeling, data management, mapping). The means developed by Antea Group to manage this risk relate to the design and construction of resilient infrastructure, such as dikes and dams, the securing of existing hydraulic structures, both in terms of the catchment or a project site with the support of teams specializing in civil and geotechnical engineering. Rainwater management also contributes to the sustainable development of regions and the safety of people and goods. Antea Group offers innovative solutions through hydraulic studies and design of lasting facilities.



59

Hydraulic infrastructure and aquatic environment projects initiated in 2020



Examples of 2020 projects



Ecological rehabilitation of the old Lac de l'Ecureuil in the Var

In the heart of the crystalline Provence massif, Lac de l'Ecureuil has long been an exceptional site. In 2009, the sudden emptying of the reservoir caused a major morphological issue downstream and had a profound impact on the flora and fauna. Antea Group, Composite and Naturalia are carrying out a project to reclaim the area for the Syndicat Intercommunal pour la Protection du Massif de l'Estérel. One of the objectives, on which Antea Group is working, is the morphological restoration and the rehabilitation of the functioning of the hydrosystem.



Definition and mapping of the flood hazard of the Besbre River in the Allier department

In order to carry out one or more Flood Risk Prevention Plan(s) for the Besbre River, a direct tributary of the Loire, the Departmental Directorate of Allier Territories commissioned Antea Group to carry out a hydrological and hydraulic study. It aims to define the limits of flood zones, map them and end up with a characterization of the reference hazard. For this, a homogeneous method throughout the region is developed in consultation and in agreement with all the local stakeholders of the 19 municipalities concerned.

Industrial water treatment



The challenges and needs associated with industrial water vary greatly from one site to the next, depending on the location, the industrial process, the possibility of using groundwater or surface water, the discharge of effluents into the network or into the natural environment after treatment, etc. Industries surround themselves with specific skills to set up their water supply, industrial water production, optimize their consumption, treat their wastewater depending on pollutants and the regulations in force, and study the possibilities of water reuse.

Antea Group intervenes in the management of resources to help companies reduce their ecological footprint. The means developed by Antea Group in industrial projects address the environmental, technical, regulatory and financial challenges of water resources management, and contribute to more virtuous modes of consumption, treatment and reuse of industrial water.



94

Industrial water treatment projects launched in 2020



Example of 2020 projects



Improve the performance of the solid waste/energy Sorting and Recovery (TVME) unit in Hénin-Beaumont

The installation built by SYMEVAD, which is unique in France, by the association on the same site of the production of biomethane and SRFs (Solid Recovered Fuels), is designed to treat 80,000 tons of household waste per year (325,000 inhabitants). A process makes it possible to exploit the energy potential of more than 50% of this waste. The solid part is transformed into SRFs. The liquid part allows the production by methanization of biogas injected into the "town gas" network (more than 1 million m³ per year). The effluents are partly recycled in the process and partly pre-treated on site before discharge into the neighboring treatment plant. In order to optimize the reliability of the TVME and confirm this technological and exemplary success in coming years, Antea Group is studying the most efficient solutions to treat effluents, complying with the new standards for discharges since the end of 2020 and ultimately ensuring the proper functioning of the neighboring treatment plant.

4.2

Environment sector

- > Environmental permitting, impact assessment, control of industrial risks
- > Environmental and social impact assessment of projects to improve access to essential services
- > Services for contaminated sites, brownfield areas, soil remediation
- > Hygiene, health, safety and environment
- > Air odor

Environmental permitting, impact assessment, control of industrial risks



Antea Group supports project leaders in the regulatory process of their dossiers until they obtain environmental authorizations. We work on the creation of a site or the maintenance or the development of an existing activity to ensure that the economic project is ecologically sustainable. Our technical and regulatory expertise enables our clients to have economically and ecologically sustainable projects. We support them for the establishment of new facilities in areas with the least environmental impact (preservation of cultural and

ecological heritage sites), and with the best available techniques to reduce pressure on resources (in terms of consumption of water, energy, construction materials, etc.) and environmental impacts. Our hazard studies highlight the risks inherent in industrial activities and the measures to be taken by project leaders to ensure sufficient risk control. The entire analysis process undertaken also contributes to raising staff awareness and fostering a risk culture within the company.



321
Projects in 2020



80 % Share of our expertise on industrial permitting projects in 2020
Of which **63 %** Manufacturing sector
17 % Green Energies/Waste



Examples of 2020 projects

Environmental permitting for the production of green hydrogen

We produced the environmental authorization request dossier (ICPE, IOTA, IED) for the site in Saucats (France) for a unit producing electricity from a photovoltaic facility that will supply a unit producing hydrogen by electrolysis of water (green hydrogen). This production will also supply cooling for a data center installed near the site, as well as cooling/heating for an agricultural greenhouse.



Studies on hydrogen fueling solutions for boats in Paris

In a context where France is aiming for the carbon neutrality of mobility in 2050, and where the City of Paris aims to have clean mobility from 2030, the evolution of the motorization of river transport has become a priority. HAROPA – Ports de Paris is involved in the H2Ships project of the Interreg North-West Europe program to develop this motorization. Antea Group, in partnership with Assystem, is studying hydrogen fueling solutions for boats in Ile-de-France, as well as the local production of hydrogen for the propulsion of river units.

Environmental and social impact assessment of projects to improve access to essential services



For more than 30 years, Antea France has supported international development projects funded by international financial institutions such as the World Bank or Agence française de Développement for better access to essential services: energy, transport, water, sanitation. For such large-scale projects - construction of a power line, a road, etc. - it is imperative to identify, avoid, minimize, and as a last resort compensate for the damage caused to populations and the environment. For this, Antea Group carries out, with local partners and multidisciplinary experts, environmental and social impact studies as

well as associated studies. They consist, from the start of the project design phase, in assessing the risks to the environment or to local populations, defining measures to reduce these impacts and developing an action plan promoting sustainable development. We provide our services in compliance with the latest international environmental and social standards in force, in particular the IFC (International Finance Cooperation) standards of the World Bank.



Examples of 2020 projects



Studies for the construction of a very high-voltage power line project around Bamako (Mali)

In order to regulate access to electricity for the inhabitants of Bamako, a very fast-growing city, Agence française de Développement funded the project to build the northern section of the 225kV power line around Bamako. Antea Group and Ingerco carried out the routeline study, topographic surveys, environmental and social impact study, environmental and social management plan, resettlement plan and stakeholders' engagement plan. These studies ensure that environmental issues - crossing the Niger, avoiding classified forests and cultivated irrigated land - and social issues are properly taken into account, with the objective of moving as far as possible away from areas already inhabited.



Missions to improve access to electricity in Senegal

Supported by MCA-Senegal II, Senegal has developed a program to modernize its electricity network to reduce power cuts in the greater metropolitan region of Dakar, i.e., 20% of the Senegalese population. The project also provides for expanding access to electricity in rural and peri-urban areas. Antea Group and JESA ensure the environmental and social management of the program to strengthen the electricity transmission and distribution infrastructure as part of the «MOSES» (Management Oversight Social and Environmental Support) mission.

Services for contaminated sites, brownfield areas, soil remediation



Our projects consisting of diagnosing the condition of the soils on former industrial wastelands for future urban development, most often located in the heart of cities and urban conurbations, fall within the government's objective of "zero net artificialization in the long term" of agricultural land, in particular by favoring the renewal of areas already built up to fight against urban sprawl. Acting as Assistant to the Contractor or as Project Manager of rehabilitation works on site, we are one of the first stakeholders to participate in the reduction of

the negative environmental impact of cities, including by paying particular attention to the air quality around construction sites. We are implementing innovative techniques (tent work) that significantly reduce unpleasant smells and contribute to the preservation of air quality for the populations nearby rehabilitation sites.



More than
1,600

Environmental
surveys on
potentially polluted
sites in 2020



More than
250

Projects in which
we acted as assistant
to the contractor or
as project manager
for site remediation



Example of 2020 projects



Among the largest site rehabilitation projects in France

In 2020, Antea Group carried out project management for four of the largest decontamination projects in France under containment tents. These projects concern former oil and gas sites, whose land and groundwater are contaminated with hydrocarbons and other pollutants. To avoid impact on air quality and limit unpleasant smells for residents, excavation work on polluted soil is carried out under containment tents. The stale air is extracted and treated before being released. Groundwater is also treated in dedicated facilities on site. For one of the sites, approximately 200,000 tons of earth will be excavated. On another site, earthworks will be carried out to a depth of 14 meters, under a tent covering an area of 25,000 m².

Hygiene, health, safety and environment



The management of companies in the fields of hygiene, health/safety and the environment aims to anticipate and reduce risks (particularly in terms of work accidents and environmental issues) but also to promote well-being at work. In this strategic area, Antea Group creates and implements effective HSE programs, in France and internationally, and ensures their application in particular with regard to compliance with the current and future regulations. We identify the applicable requirements in the areas of the Environment and Working Conditions, and assess the compliance of our clients' sites and activities with these requirements.

We offer at least to bring their sites to compliance and assist them in the deployment of continuous improvement measures.



Examples of 2020 projects



Design of safety management programs

Antea Group develops standards for the continuous improvement of the safety of employees in their workplace, on behalf of major international economic stakeholders in their field: logistics, IT, luxury goods, commerce, spirits, chemicals, etc. For example, Antea Group has carried out the conversion of corporate standards to meet the requirements of French regulations for a multinational logistics company: 24 HSE procedures and 110 maintenance instructions.



Characterization of a metropolitan employment catchment area as part of ESG initiatives

Antea Group has set up monitoring and reporting indicators based on employer data from companies involved in a major metropolitan project. The development of this dashboard provides better knowledge of the profile of stakeholders (qualification, geographical location, etc.), and gives the possibility of continuously evaluating compliance with the societal commitments made by the project leaders and examined by the financial rating agencies.

Assistance in the implementation of an environmental policy

Antea Group also participates in the development of the ESG policy of major economic stakeholders on the environmental aspect of the projects undertaken. For example, monitoring the implementation of ecological compensation measures for the impacts of a project makes it possible to secure it by applying the commitments set out under its authorization. These measures can be defined in particular to compensate by reforestation in another area, to recreate a pond following the disappearance of a wetland in the boundary of the project, etc.

Air odor



Industrial processes as well as soil decontamination generate many atmospheric pollutants. These have repercussions on the health of workers and can also have an impact on air quality and issues for local residents. To face these challenges, national regulations are increasingly strict. The solutions involve the local deployment of diagnostic missions and assistance in the commissioning of gas treatment technologies.

In addition, in the health context of 2020, Antea Group and its partner In Situ Environnement have developed an integrated physico-chemical and bacteriological expertise called Sanitary Management of Indoor Air Quality. This approach is mainly intended for establishments open to the public and the tertiary sector.



60

Measurements - engineering projects for ambient air & odor in 2020



Examples of 2020 projects



Territorial monitoring of odors in a port industrial zone

Espace INSPIRA is the public-private entity of the port and river zone of Salaise sur Sanne in the Rhône valley. A regulatory obligation required an initial environmental baseline conditions report on odors in the INSPIRA zone and its surrounding environment, including two chemical platforms.

Antea Group carried out olfactory inspection campaigns and the modeling of odor emissions at major sites in the industrial area. An odor observatory will eventually make it possible to monitor the olfactory environment as new businesses move in.



Odor expertise mission in waste incineration

SYCTOM is the public establishment responsible for treating and recovering the waste produced by 6 million inhabitants in the Paris region. Following the drafting of an adapted monitoring strategy for the SYCTOM incineration center of Saint-Ouen, Antea Group, RUBIX S&I and Numtech have set up a network of connected 'noses' for the continuous monitoring of odors. The sources of odorous emissions on the site and surrounding areas are thus identified. By continuously improving the olfactory situation, this project helps limit the impact on staff, residents, and the environment.

4.3

Infrastructure sector

- > Urban planning & non-artificialization of land
- > Decommissioning and risk management (asbestos, lead)
- > Geotechnical engineering for renewable energies
- > Civil engineering and structures for sustainable infrastructure
- > River, maritime, and natural hazard works
- > Management and recovery of solid waste (materials, energy)

Urban development & non-artificialization of soils



The objective of ultimately achieving «zero net artificialization of soils» was included in the 2018 Biodiversity Plan. Antea Group incorporates this objective into the design of works and infrastructure projects. The challenge today is to combine efficiency and quality in the construction and maintenance of structures. The land-

related economy also involves work on urban renewal. Antea Group supports the conversion of former urban wastelands. If the role of Public Land Establishments is central in mobilizing this potential, that of Antea Group is to help implement quality and sustainable projects.



Exemple de projet 2020

Conversion of old industrial brownfields in the Hauts-de-France region

On the site of the former *Etablissements Madeleine* in Estaires, Antea Group has defined a reconversion project reconciling different challenges: boosting the residential attractiveness of the municipality with a mixed program of facilities and accommodation, preserving local heritage and controlling the risk of flood due to proximity to a river.

Decommissioning and risk management (asbestos, lead)



The many decommissioning projects carried out each year by Antea Group in dense urban areas, industrial or tertiary sites include the recovery and recycling of decommissioned components. Their reuse presents twofold environmental added value: the preservation of natural resources and the reduction in the volume of final waste. Antea Group thus participates in the development

of the circular economy by seeking the best recycling solutions. Another part of the decommissioning concerns asbestos removal and lead risk management, in particular in renovation sites of listed monuments. Our know-how in this area addresses a major public health issue, and contributes by removing asbestos from the environment and thus improving the living environment.



Example of 2020 projects



Reconversion of industrial land to the east of Caen

Antea Group carried out the asbestos removal and decommissioning work of part of the historic buildings of the PSA factory, as well as soil decontamination work.

By selectively scheduling the operations to be undertaken, Antea Group has met the major objective of sorting materials as far as possible. Thus, 96% of the materials have been recycled. This intervention also helps to preserve natural spaces and agriculture by allowing the reconversion of the use of this land.



400,000

tons (40 times the Eiffel Tower)
of materials recycled throughout
our projects in 2020

* mainly recycled crushed concrete

Geotechnical engineering for renewable energies



Antea Group mobilizes its know-how, particularly in geotechnical engineering, for the development in France of wind farms and photovoltaic farms that supply energy to a large number of inhabitants and businesses while making it possible to reduce CO₂ emissions in the atmosphere. Antea Group seeks innovative solutions in the design of sustainable infrastructure.

In the wind energy sector, the current fleet requires extensive renewal by 2030. Antea Group is engaged in the FEDRE (Sustainable Wind Farm Foundations with REpowering) research with the aim of designing foundations that will enable existing concrete footings to be adapted to more powerful wind turbines.

This is also the case in photovoltaic farm projects whose ground installation is scheduled on former household and inert waste storage sites for which a new use is strongly



constrained. Antea Group applies appropriate techniques to stabilize the peripheral slopes of the waste pile, assess the risk of piling up the waste mass, and assess the risk of fire linked to the presence of biogas. Specific construction recommendations allow a new use of these abandoned spaces for the development of renewable energy that does not 'consume' new agricultural and natural spaces.



600 MW

Cumulative power of wind and photovoltaic projects studied by Antea Group in 2020



Example of 2020 projects



Boost installed wind power by optimizing its renewal

To continue boosting the wind power installed in France and around the world, it will be necessary over the next few years to re-equip the wind farms by replacing the existing wind turbines which have a lifespan limited to around twenty years. The reuse of reinforced concrete footings would have clear advantages in terms of saving construction materials and reducing greenhouse gas emissions. The 2018-2022 FEDRE project focuses on this issue in order to achieve a lasting technical solution. The main research steps relate to the instrumentation of a new footing and of foundation soils for their evaluation, the performance of tests on the solutions proposed for the foundations and the embedding of the materials, and modeling to justify the new technical solutions.

Civil engineering and structures for sustainable infrastructure



The maintenance of a significant works heritage in our territories is now a major challenge for sustainable development. Engineering on existing structures has become a real expertise provided by Antea Group. Daily services are very varied: degraded masonry bridge to be consolidated, metal structure to repair or repaint, existing bridge to be adapted to new uses (walking, cycling), cracked retaining wall, etc.

In the management of our projects, functionalities, budgetary constraints, user safety and environmental protection are at the heart of our concerns. And the digital transformation led by our DATA Department makes data management more efficient to extend the operating life of structures.



38 %

Structural projects in 2020 with a soft mode component



Examples of 2020 projects



Reconversion of railway bridges into greenway paths

Angers Loire conurbation is continuing to develop new sections to be opened to cyclists and pedestrians. This network of green routes complements the major national cycle routes that cross the metropolitan area (Loire à Vélo, Vélo Francette, La Vallée du Loir à Vélo). After the development of the first two sections on the right-of-way of old decommissioned railway lines, the reconversion of the Segré bridge, an engineering structure characterized by its metal framework, has thus made it possible to preserve a heritage construction more than a century old, and give it a second lease of life in its function as a crossing of the Maine to promote soft modes of travel.



Development of the Véloroute33 and EuroVelo4 in Calvados

The development of a cycle route between Honfleur and the Saint-Sauveur River extends the existing cycle route linking Deauville to Honfleur via Pont-L'Evêque, and more generally Eurovéloroute 4 called Vélomaritime, which offers 1,500 kilometers of cycle routes between Roscoff in Finistère and the North Sea. Antea Group studied the crossing structures with in particular the study of steel, mixed steel/concrete or wood walkways.

The development of two structures to cross water using a metal and wooden decking structure, with a useable width of 2 meters, will facilitate smooth connections on this coastal route: a 40-meter-long footbridge to cross a canal and a 60-meter-long ramp to cross the Morelle River.

River, maritime and natural hazard works



Reducing natural risks is a major issue for the safety of people, sites, and infrastructure. These risks involve floods and coastal flooding, erosion of cliffs and banks, falling boulders, landslides, soil collapse, etc. Climate change increases their frequency and intensity (storms, heat waves, etc.). The proper management of these hazards is based on expert approaches (geotechnical, civil engineering and structures), adapted to the contexts and their vulnerability. Antea Group uses its know-how



on many exposed and weakened sites and infrastructure such as coastline, cliffs, buildings, roads, structures, maritime and river structures, etc.

Some, emblematic, are classified as Historic Monuments, UNESCO sites or have a heritage character to be preserved.



950 km

of coastline studied
to improve its protection
and that of the population



Examples of 2020 projects



Preserving an exceptional maritime heritage in Saint-Malo while protecting the city

The city of Saint-Malo is one of those emblematic sites subject to significant risks of coastal flooding. The historic protection works are made up of dikes and 3,000 wooden breakwaters which add a unique charm to the city. Antea Group monitors these dikes during periods of high tides or storms in order to identify any damage. Repair work will lead to the rehabilitation and reinforcement of the dikes, as well as the replacement of approximately 500 breakwaters.

This project helps keep this site open to all, safe, resilient, and sustainable.



Developing a regional strategy for the integrated management of the coastline in Hauts-de-France

The Hauts-de-France regional coast is subject to multiple hazards such as coastal flooding, coastal erosion, boulder landslides, and is a concentration of major human, environmental, and economic challenges. In a context where the effects of climate change are significantly amplified, a strategy reconciling the management of hazards with the challenges of preservation and development needs to be put together. The basis of this is the diagnosis of hazards and other issues in order to adapt the integrated management strategy specific to each part of the coast.

Management and recovery of waste (materials, energy)



Historically involved in waste storage, Antea Group is now specialized in the entire cycle of waste management: from collection to recovery, in the service of the circular economy.

The search for new channels for site excavation materials is a focus of this recovery activity, integrating the requirement of waste traceability. For waste that cannot be recycled, the energy produced during its treatment by combustion or anaerobic digestion can be used as heat or electricity. Antea Group's expertise in renewable energies also involves the development of photovoltaics on post-operation storage sites.

Antea Group develops solutions for improving the environmental performance of storage sites and

optimizing the operation of waste treatment facilities. Discussions also focus as regards large territories on the organization of a balanced and efficient collection and treatment offer (shared sorting centers, new generation waste reception centers, recycling centers, incinerators, etc.).



100

Waste facilities optimized in 2020



Examples of 2020 projects



Analyzing the opportunity for Montpellier Méditerranée conurbation to recover energy from waste by incineration

The conurbation aims for a carbon neutral territory by 2050, as well as zero non-reused or recycled waste objective. Antea Group carried out in this exemplary territory, in terms of renewable energies, a multi-criteria analysis relating to the installation of an incinerator for digestates and sludge from wastewater treatment plants on three potential sites, with heat recovery. Antea Group has taken into account in its recommendations the economic costs of each scenario, the social acceptance of the project and the benefits in terms of connections to heating and electricity networks.



Waste management in the Gaza Strip

In Al-Fukhari in the northern part of the Gaza Strip, Antea Group planned the rehabilitation of an old landfill site, with the design of a new technical household waste landfill facility and the creation of transfer stations to transport waste to the new site. The studies took into account the geotechnical characteristics of the site to optimize the design of the new facility. This project is a response by the Palestinian Authority to the saturation of existing landfill sites in the Gaza Strip. The expected effects to reduce health and environmental risks relate to improving air quality, preserving groundwater and water resources.

4.4

Environmental data measurement and management sectors

- > Water quality measurements
- > Measurements of atmospheric and outdoor air emissions
- > Occupational exposure and indoor air measurements
- > Data acquisition and management
- > Modeling and spatialization: data in the service of decision-making

Water quality measurements



IRH Ingénieur Conseil teams are qualified to characterize any type of effluent, define the state of the natural environment, and assess the functioning of the treatment units in place at our clients' and partners' premises: manufacturers, local authorities, and institutions. Our expertise focuses on the quality of wastewater, groundwater, surface water and untreated water in order to help our clients to maintain their compliance with applicable regulations, thus protecting populations while optimizing existing treatments to contribute to the sustainable development process.

All the data collected are used for monitoring and adaptation of local water management policies at different levels.



1,595
Projects in 2020



Focus : Research and Reduction of Hazardous Substances Discharged into the Water (RSDE)



The actions of the program 'Reduction of Hazardous Substances Discharged into the Water' (RSDE) were put in place nationally in 2002 to comply with the European ambition to improve the quality of the aquatic environment (Water Framework Directive of 2000). They are undertaken for local authorities as well as for industries and concern the monitoring, quantification and reduction of the flow of hazardous substances.

From the start, IRH Ingénieur Conseil has been committed to its clients to help them in this process and continues today thanks to strong expertise developed over more than 15 years working with manufacturers and local authorities: initial and lasting campaigns, updating of Reduction of RSDE monitoring plans and verification of compliance with applicable emission limit values, development of action plans and RSDE technical-economic Studies, upstream diagnostics, etc.

Measurements of atmospheric and outdoor air emissions



Air quality has become a major issue for the preservation of our environment and our living environment. As such, our teams are mobilized to carry out air emission and ambient air controls in our clients' industrial or collective facilities. They also carry out checks and validations of gas discharge self-monitoring systems.

OUR OBJECTIVE

Audit and control



359

Projects in 2020



9,723

Parameters analyzed in 2020

Occupational exposure and indoor air measurements



The good quality of the air inside buildings (industries, offices, housing, buildings open to the public) is an essential parameter for the health and comfort of occupants. According to the French Labor Code, employers must conduct a chemical risk assessment as well as regulatory occupational exposure controls.

To do this, IRH Ingénieur Conseil teams carry out complete surveys (chemical risk assessment, sampling strategy, measurements and controls of exposure to chemical agents, etc.) and offer solutions to improve the air quality in buildings.



197

Projects in 2020



4,150

Parameters analyzed in 2020

Data acquisition and management



Improving information systems on water, aquatic environments and their uses is one of the essential cornerstones of better governance and integrated water resource management. The authorities and bodies responsible for water management are required to create or develop such systems at national or regional level, to

cope with the explosion of digital data and benefit from more efficient decision-making tools. Antea Group, a major player in environmental data engineering, deploys data management solutions, environmental information systems, and carries out audit, support and technical expertise missions to meet these challenges.



12 millions

Volume of data we managed
in 2020



56 %

of the national territory
covered by our solutions
in 2020



Examples of 2020 projects



Management of the database on the quality of surface water in the Loire Bretagne basin

Since 2001, Antea Group has managed the database on the quality of surface water in the Loire Bretagne Basin, to provide citizens with information on the quality of waterways and lakes, via a collaborative internet platform. The measurement campaigns are scheduled, the results are centralized, controlled, formatted and integrated into a database developed by our data management experts. The database now includes 41 million pieces of data on the quality of the natural environment of the Loire Bretagne basin.



Biodiversity - a common heritage and capital for the future

The French Biodiversity Office (OFB) supports the stakeholders regarding the objectives of preserving biodiversity. It puts in place knowledge tools (databases and databanks) for a better definition of the issues in each territory. Antea Group supports the OFB throughout the water data management process, from its acquisition to its dissemination, including checking its reliability so as to make it a tool for action. The 3rd National Biodiversity Strategy under development will set the course for the next 10 years. Antea Group is part of this dynamic by pursuing its expertise in data sharing for the OFB.

Modeling and spatialization: data in the service of decision-making



Decision-making in the field of the environment first requires expert processing of increasingly numerous data. Knowledge and value do not come directly from the accumulation of this data, but from the valorization and modeling processes associated with it.

Thus, modeling and prospective simulation constitute the scientific approach that Antea Group implements to understand complex environmental processes. The methods and techniques for acquiring, processing, and

reporting georeferenced data have indeed become essential for preventing and combating natural risks, and studying the impacts or managing territories.

The combination of our technical expertise and our digital tools allows us to support our clients and partners in their environmental approaches through the many services offered: statistical analyses of data, cartographic and spatial analyses, modeling and characterization of phenomena.



Examples of 2020 projects



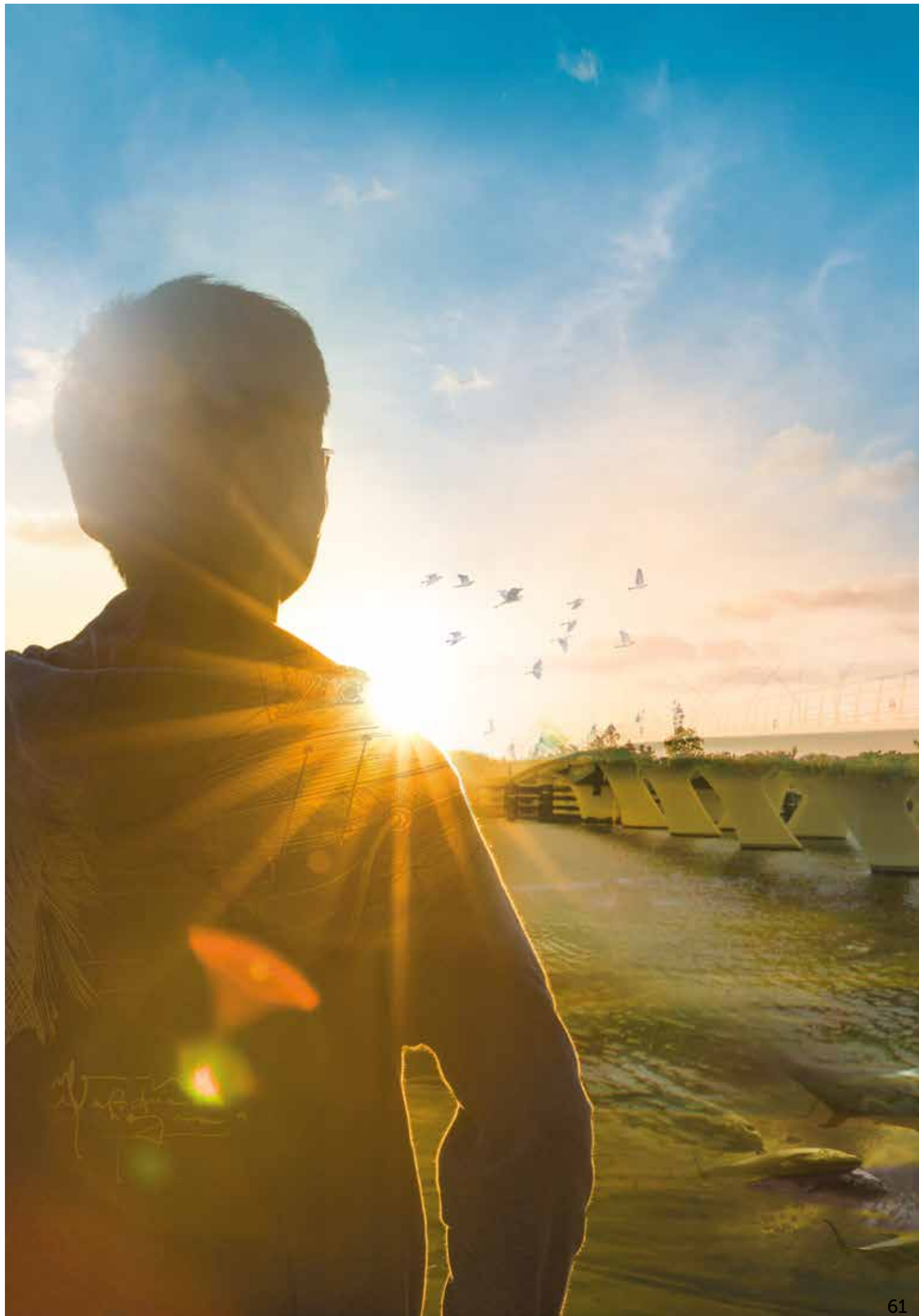
Geographic analysis of data to guarantee access to energy in Senegal

A key program in Senegal, funded by the Millennium Challenge Account, is to reduce poverty through economic growth in the country. This involves the increase in the reliability and access to electricity in particular in rural and peri-urban areas. Beyond the support on environment and social areas of the program (see page 46), Antea Group is developing a geospatial data platform on behalf of MCA and then Senelec, the national electricity company in Senegal. By ensuring the collection, analysis of spatial data, and online mapping services, this platform will contribute to improving the management of projects and decision-making.



Assistance to the Data and Statistical Studies Department (SDES) with geomatics

The SDES organizes the observation and statistical system in terms of accommodation, construction, transportation, energy, the environment, and sustainable development. Antea Group provides its expertise in geomatics and its assistance in completing mapping and geographic work which feed into publications, tools, and the SDES website.



4.5

Research & Development
Innovation
Scientific activities



Scientific activities



Our Research & Development - Innovation activities are part of an open and collaborative approach. Our involvement is strong in associations, scientific and technical institutions, and competitiveness clusters that contribute to innovation and sustainable development.



More than 120 days

Our investment in 2020 in associations and competitiveness clusters

Main technical associations and competitiveness clusters in which employees of Antea Group are active

Technical or scientific associations

AFNOR : French Association for Standardization

UPDS : Union of Site Decontamination Professionals

ASTEE : Scientific and Technical Association for Water and the Environment

FIMEA : Interprofessional Federation of Atmospheric Environment Professions

AFTES : French Association of Tunnels and Underground Space

Competitiveness clusters

DREAM Eaux et Milieux : Competitive cluster for the water and its environments sector in Centre Val de Loire

HYDREOS : Competitive cluster for the water sector in the Grand Est region

France Water Team : National Federation of Water clusters

TENERRDIS : Competitiveness cluster for energy transition

INDURA Auvergne-Rhône-Alpes : Innovation in infrastructure and civil engineering

Research & Development - Innovation

Technical excellence and innovation are deeply embedded in the Antea Group's development strategy. The Research & Development - Innovation Department focuses its activities on complex environmental issues, and offers ever more sustainable, optimized, and secure solutions. Particular attention is paid to

projects that affect the entire environmental data value chain, including the acquisition and management of data, the creation of dedicated information systems, the valorization of data, namely by using innovative predictive models.



Pollution control

Better knowledge of the origin and transfer of micropollutants helps to establish effective action plans to reduce their impact on the aquatic environments and resources.

As part of the LUMIEAU-Stra project led by the Eurometropolis of Strasbourg, in collaboration with 7 partners, IRH Ingénieur Conseil has developed an innovative tool for identifying and prioritizing the sources of micropollutant emissions linked to human

activities. This tool, applied to the Eurometropolis of Strasbourg and transposable to other cities, is used to develop action plans to act at the source in order to reduce the flow of micropollutants into the urban wastewater network and, consequently, discharges into the natural environment.

To find out more

www.strasbourg.eu/lumieau-stra



Reinforcement of the circular economy

Antea Group contributes through its research to the development of the circular economy. Two projects on the recovery of materials considered as waste and a project dedicated to the circular water economy illustrate this investment.

The Cycle Terre project focuses on the recovery of unpolluted soil excavated during the construction of future train stations in Grand Paris to produce, on site, natural construction materials. Led by the city of Sevran, Cycle Terre is funded by the European FEDER fund and winner of the 2017 UIA edition (UIA: Urban Innovative Actions, an initiative of the European Union with the objective of testing innovative ideas and supporting urban authorities towards sustainable urban development).

To find out more

www.cycle-terre.eu

The VALSSINNOV project concerns the reuse of dredged sediments thanks to innovative geosynthetics. It aims to develop a method for managing these sediments on land that are difficult to reuse, thanks to the development, amongst other things, of multifunctional and active geosynthetics, combining decontamination, filtration, drainage, and reinforcement functions. These geosynthetics must make it

possible to fix most of the pollutants contained in the sediments so that they are recovered as inert, with no impact on the environment or on health.

To find out more

<https://plateformes-pivots.eu/projets/#valssinnov>

The AQUANES project aims to reuse water by developing more sustainable purification techniques to manage situations of water shortage or excess. Antea Group has developed an IT tool to control the refining of natural depollution of wastewater leaving wastewater treatment plants through the ground. A demonstrator of this tool has been developed at the Agon-Coutainville wastewater treatment plant. It allows optimized operation with aquifer recharge: part of the treated wastewater goes back to the natural environment for storage and refining before being withdrawn again to water a golf course.

To find out more

www.aquanes-h2020.eu



Resilience of infrastructure

Several Antea Group R&D topics aim to ensure the sustainability of infrastructure. Our teams of geotechnical experts work, for example, on modeling the resistance of structures to earthquakes, with practical applications for hydraulic embankment dams in the West Indies. They are also involved in the FEDRE (Sustainable Wind Farm Foundations with REpowering) research project which aims to extend the life of wind turbines by designing adaptive foundations: see project details on page 52.

To improve the performance of drinking water supply networks

of small and medium-sized local authorities, the SPHEREAU project focuses on the valorization of self-monitoring data by relying on Artificial Intelligence models in order to facilitate decision-making concerning the control of leaks, water quality, energy efficiency, etc. It thus helps plan intervention operations, the renewal of pipelines, etc. This tool was applied to a pilot site: the 300 km network of the Syndicat Intercommunal des Eaux in Pulligny which serves 47 municipalities and 15,000 inhabitants.

To find out more

<https://www.anteagroup.fr/nos-projets/rdi-sphereau-solutions-programmation-hierarchisee-efficiency-reseaux-eau#104027>



Development of renewable energies

As part of the Geoclogging project funded by ADEME, Antea Group has focused its research on resolving the risk of clogging of geothermal doublets on groundwater which affects at least 30% of geothermal systems in France and calls into question their technico-economic viability.

The ARCADE tool created provides an in-depth analysis of the sites and offers support towards solutions for the prevention and/or treatment of clogging.



Environmental predictive modeling

Under the HYDRES project, Antea Group has developed a simple tool intended for managers to measure, at the level of a hydrological catchment, the suitability of water resources (availability, sustainability) as regards socio-demographic changes and eventually climate change.

Antea Group is also participating

in the RISCOPE project on the development of a coastal flood forecasting and warning system in a complex environment such as an urban area. The use of learning algorithms or Machine Learning allows a «real time» approach to the flood risk. A web application is being tested for the municipality of Gâvres.

To find out more

<https://anr.fr/Projet-ANR-16-CE04-0011>



Correspondence table SDGs and Antea Group activities



Enable everyone to live healthily and promote the well-being of everyone at all ages. Promote mental health and wellbeing. Reduce accidents on the road. Reduce deaths due to dangerous chemical substances and pollution in the air, water, and soil.

P17 - Cohesion, health and well-being at work
P20 - Safety
P45 - Environmental permitting - Impact assessment- Control of industrial risks
P48/49 - Hygiene, health, safety, environment - Air, odor
P58 - Water and air quality measurements
P64 - R & D-I Pollution control



Achieve gender equality and empower all women and girls. Adopt policies for the promotion of gender equality.

P14 - Diversity and non-discrimination



Ensure access for all to sustainably managed water supply and sanitation services. Ensure that water resources are used much more efficiently in all sectors. Ensure the integrated management of water resources. Ensure access to drinking water at an affordable cost, and access for all to sanitation services. Improve water quality by reducing pollution, by halving the proportion of untreated wastewater.

P39 - Sustainable management of water resources
P41 - Drinking water and sanitation infrastructure
P43 - Industrial water treatment
P59 - Data acquisition and management
P65 - R & D-I Pollution control, circular economy, resilience of infrastructure, predictive modeling



Guarantee access for all to reliable, sustainable and modern energy services at an affordable cost. Significantly increase the share of renewable energy in the global energy mix. Provide modern and sustainable energy services to all inhabitants of developing countries.

P40 - Energy recovery linked to water
P46 - Environmental and social impact assessment of projects to improve access to essential services
P52 - Geotechnical engineering for renewable energies
P55 - Waste management and recovery
P65 - R & D & I Development of renewable energies



Promote sustained, inclusive, and sustainable economic growth, productive full employment, and decent work for all. Promote safety in the workplace.

P20 - Safety
P48 - Hygiene, health, safety and the environment



Build resilient infrastructure, promote sustainable industrialization that benefits everyone and encourage innovation. Adapt industries to make them sustainable, through a more streamlined use of resources and increased use of clean and environmentally friendly industrial technologies and processes. Boost scientific research, encourage innovation, increase public and private spending devoted to research and development.

P45 - Environmental permitting - Impact assessment - Control of industrial risks
P60 - Modeling and spatialization: data in the service of decision-making
P63 - Innovation - Scientific activities



Make cities and human establishments inclusive, safe, resilient, and sustainable. Significantly reduce the number of people affected by disasters, including those related to water. Reduce the negative environmental impact of cities per capita, paying particular attention to the quality of air and waste management. Protect and preserve the world's cultural and natural heritage.

P42 - Hydraulic infrastructure and aquatic environments - Control of flood risks
P45 - Environmental permitting, impact assessment
P47 - Services for contaminated sites, brownfield areas, soil remediation
P51 - Urban planning & non-artificialization of land
P53 - Civil engineering and structures for sustainable infrastructure
P54 - River, maritime and natural hazard works
P55 - Waste management and recovery



Establish sustainable consumption and production patterns. Achieve sustainable management and rational use of natural resources. Achieve environmentally sound management of chemical products and all waste, and significantly reduce their release into the air, water and soil. Significantly reduce waste production through prevention, reduction, recycling and reuse. Promote sustainable practices in the context of public procurement. Significantly reduce the production of waste through prevention, reduction, recycling and reuse. Make sure that all people, everywhere in the world, have the information necessary for sustainable development. Help developing countries move towards more sustainable consumption and production modes.

P24 - Our environmental commitments in the operation of the company
P46 - Environmental and social impact assessment of projects to improve access to essential services
P55 - Waste management and recovery
P64 - R & D & I Reinforcement of the circular economy



Take urgent action to combat climate change and its repercussions. Improve education, awareness regarding adaptation to climate change. Reinforce resilience and capacities for adapting to climate hazards and climate-related natural disasters.

P24 - Our environmental commitments in the operation of the company
P39 - Sustainable management of water resources
P42 - Hydraulic infrastructure and aquatic environments - Control of flood risks
P54 - River, maritime and natural hazard works
P65 - R & D-I Environmental predictive modeling



Preserve and restore terrestrial ecosystems, ensuring that they are exploited in a sustainable way, manage forests in a sustainable way, fight against desertification, halt and reverse the process of land degradation and end biodiversity loss. Guarantee the preservation, restoration and sustainable exploitation of terrestrial and freshwater ecosystems and related services. Integrate the protection of ecosystems and biodiversity in national planning, and in development mechanisms.

P39 - Sustainable management of water resources
P42 - Hydraulic infrastructure and aquatic environments - Control of flood risks
P45 - Environmental permitting - Impact studies - Control of industrial risks
P48 - Hygiene, health, safety and the environment
P59 - Acquisition and management of environmental data



Significantly reduce corruption and the practice of bribes in all their forms.

P6 - Human rights and ethics



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Antea Group France

ZAC du Moulin
803 Boulevard Duhamel du Monceau
CS 30602 - 45166 OLIVET Cedex
Ph. : + 33 (0)2 38 23 23 00
contact@anteagroup.fr

www.anteagroup.fr

