

E. Workforce-related, environmental and social information

This report is compiled pursuant to Articles L.225-102-1, R.225-104 and R.225-105 of the French Commercial Code, as well as French Order no. 2017-1180 and Decree no. 2017-1265. It is based on such international reporting guidelines and standards as the Global Reporting Initiative (see the cross-reference table on page 365) and ISO 26000. It has also been prepared in compliance with the decree on companies' disclosure requirements for social and environmental data, and presents the duty of vigilance measures implemented by VINCI.

It contains four sections:

- workforce-related information (pages 190 to 202);
- environmental information (pages 202 to 214);
- social information (pages 214 to 228);
- duty of vigilance plan (pages 228 to 245).

VINCI's sustainable development policy and strategy are presented on pages 20 to 29 of this Annual Report. Additional, regularly updated information is available on the Group's website at www.vinci.com, in particular examples of the innovative approaches implemented by the Group's companies, arranged by category and type of challenge. VINCI requests one of its Statutory Auditors to issue an opinion on the completeness and sincerity of its workforce-related, environmental and social reporting. The report on this audit work and its conclusions, along with a note about the reporting methods used by VINCI, is presented on pages 245 to 248. In addition to complying strictly with legislation, VINCI has voluntarily committed to observing the 10 principles of the UN's Global Compact and to reporting annually on its progress in this area. VINCI has also made a commitment to Global Compact France (the French branch of the Global Compact Network) to promote these initiatives among businesses. Advance, a sustainable development self-assessment questionnaire, enables managers to review the Group's workforce-related, environmental and social categories, and take strategic decisions related to them. The method was developed by VINCI in accordance with the principles of the Global Compact, the fundamental conventions of the International Labour Organisation (ILO) and ISO 26000. VINCI's sustainable development policy also encompasses the Sustainable Development Goals that were adopted by the United Nations General Assembly in 2015, and which officially went into effect on 1 January 2017.

Global Compact implementation

Commitments/Principles	Initiatives in 2018
Human rights	
1. To support and respect the protection of internationally proclaimed human rights within the Group's sphere of influence.	<ul style="list-style-type: none"> - Ongoing work of the human rights working group, which brings together the human resources directors of companies that operate in potentially sensitive regions. - Publication, translation into 21 languages and broad dissemination within the Group of VINCI's Guide on Human Rights to teach best practices in this area. Publication of the Guide on the Group's website. - Continuation of the dissemination of the Group's Subcontractor Relations Guidelines, which cover all the Group's business activities and countries where it operates.
2. To ensure that Group companies are not complicit in human rights abuses.	<ul style="list-style-type: none"> - Publication, translation into 21 languages and broad dissemination within the Group of VINCI's Guide on Human Rights to teach best practices in this area. Publication of the Guide on the Group's website. - Ongoing integration of the "Labour standards and human rights" chapter in the Group's new framework contracts with its suppliers. - Implementation of tools to measure risk and performance in matters concerning human rights for Group companies. - Development of an e-learning module to raise awareness and provide information about human rights issues.
Labour standards	
3. To uphold the freedom of association and the effective recognition of the right to collective bargaining.	<ul style="list-style-type: none"> - 1,190 collective agreements signed. - Organisation of measures to promote labour-management relations in countries where VINCI operates that have not ratified the International Labour Organisation's conventions on trade union rights.
4. To uphold the elimination of all forms of forced and compulsory labour.	<ul style="list-style-type: none"> - Risks explained in VINCI's Guide on Human Rights, including definitions and case studies. - Inclusion of specific clauses to prohibit forced and compulsory labour in framework contracts with suppliers.
5. To uphold the effective abolition of child labour.	<ul style="list-style-type: none"> - Risks explained in VINCI's Guide on Human Rights, including definitions and case studies. - Inclusion of specific clauses to prohibit child labour in framework contracts with suppliers.
6. To uphold the elimination of job and occupational discrimination.	<ul style="list-style-type: none"> - Diversity programme rolled out via the Group's worldwide network of 288 diversity coordinators. - Diversity courses included in the training of the Group's operational managers. - Guidebook produced by VINCI distributed to all diversity coordinators to prepare them to lead local meetings to heighten awareness of stereotypes, fight against discrimination and promote equal opportunities for all.
Environmental protection	
7. To support a precautionary approach to environmental challenges.	<ul style="list-style-type: none"> - Measures to systematically take environmental criteria into consideration at the earliest stages of projects and when assessing business activity risk, product risk (REACH) and pollution prevention. - Nearly 37,000 hours of environmental training across the Group. - Voluntary participation in the rating of the transparency and performance of corporate water strategy by CDP Water - Disclosure, resulting in a management score of C. - Continued high ranking in the CDP Climate Change Program with a score of A-. - Systematic application of life cycle analysis during tender and design phases: multi-criteria analysis of each phase of the project life cycle.
8. To undertake initiatives to promote greater environmental responsibility.	<ul style="list-style-type: none"> - Ongoing work to conserve biodiversity in partnership with environmental non-profit organisations: introduction of environmental labels at worksites, training courses, best practice handbooks.
9. To encourage the development and dissemination of environmentally friendly technologies.	<ul style="list-style-type: none"> - Implementation of measures to limit energy consumption and greenhouse gas emissions. Development of electricity consumption from renewable energy sources. - Development of biodiversity conservation initiatives: ecological engineering services, protection of urban biodiversity, combating invasive non-native species. - Support given to the research and teaching efforts of the VINCI-ParisTech Chair in the Eco-design of Buildings and Infrastructure: 15 research projects involving VINCI correspondents and three conferences per year.
Anti-corruption	
10. To work towards combating all forms of corruption, including extortion and bribery.	<ul style="list-style-type: none"> - Further reinforcement of internal controls through the creation of an Ethics and Vigilance Department. - Ongoing distribution of the Code of Ethics and Conduct among all VINCI employees. Translation into 26 languages to facilitate distribution and understanding. - Distribution of the anti-corruption code of conduct. Translation into 26 languages to facilitate distribution. - Rollout of an anti-corruption e-learning module for Group entities. - Development of a whistleblowing procedure allowing any employee to report serious violations of the Group's rules and commitments, especially those relating to anti-corruption. - Inclusion of social responsibility criteria including anti-corruption in the supplier and subcontractor selection process, as well as in framework contracts with VINCI subsidiaries. - Implementation of Advance, a sustainable development self-assessment questionnaire that deals in particular with fundamental social rights; the questionnaire is intended for the management committees of Group companies.

VINCI has submitted its workforce-related, environmental and social information for review by its Statutory Auditors since 2002. In 2018 the Group designated one of its Statutory Auditors as an independent third party to attest to the inclusion and fair presentation of the CSR information published in this report, in compliance with Decree no. 2012-557 of 24 April 2012 on companies' disclosure requirements for social and environmental data. As well as checking the consolidation of information from the different business lines, the independent third party carries out interviews and surveys on the application of the guidelines at subsidiaries. In 2018, the following subsidiaries were interviewed: Dodin Campenon Bernard, Entrepose, Eurovia, Soletanche Freyssinet, VINCI Airports (Dominican Republic), VINCI Construction Dom-Tom, VINCI Construction International Network, VINCI Construction Grands Projets, VINCI Construction UK, VINCI Energies International & Systems, VINCI Stadium. International companies are closely monitored, particularly in Brazil, the Dominican Republic, Morocco, Romania and the United Kingdom. Environmental data is presented in compliance with Decree no. 2012-557 of 24 April 2012, in application of Article 225 of France's Grenelle II Environment Act of 12 July 2010, and additional provisions set forth in Decree no. 2016-1138 of 19 August 2016 on changes resulting mainly from the law on the energy transition for green growth (Article 173) and the law on combating food waste. The following regulatory subjects are not dealt with in the report because they have not been identified as being among the major challenges facing the activities of the Group's companies:

- fighting food insecurity;
- respect for animal welfare;
- responsible and sustainable food production and fair food trade.

VINCI also meets the requirements of Order no. 2017-1180 of 19 July 2017 and Decree no. 2017-1265 of 9 August 2017, which transposed the European directive on disclosure of non-financial information by certain large undertakings and groups into French law.

Having been one of the first French companies to support voluntary reviews of its data, VINCI is continuing its efforts. The Group considers transparency with respect to stakeholders to be an element of its performance. The data presented in this report is consolidated using the same method as VINCI's financial data. Some entities, such as QDVC (Qatari Diar VINCI Construction Grands Projets), are still consolidated proportionally.

1. Workforce-related information

1.1 General human resources policy

This section follows precisely Article 225 of France's Grenelle II Environment Act. It is also based on the standards of the Global Reporting Initiative (GRI) – see the cross-reference table on page 365.

VINCI's economic development policy is based on a complementary set of short- and long-term business activities performed through a decentralised organisation. The Group's employees are vital to the success of its business model. Its operating methods therefore prioritise people over systems and are based on the view that sustained business success requires an ambitious approach to human resources. To support its growth, in particular outside France, since 2010 the Group has applied employee development plans adapted to its forward-looking management of jobs and skills. The measures involve all phases of staff's occupational life, be it recruitment, the annual appraisal, training, collegial workforce review, direct exchanges. New information and communications technologies are used to implement individual development plans covering such areas as job mobility and training, and extending to the employee's departure from the company due to retirement, end of employment contract, and so on.

As a major player in very fragmented and extremely competitive sectors, VINCI works hard to stand out by producing compelling results.

An employer brand campaign, entitled "You will enjoy working with us", was launched at the beginning of 2018. The idea was to communicate that, in addition to education and professional experience, VINCI firmly believes in the importance of the human qualities of its future employees. Disseminated exclusively via social media, the campaign was highly successful and mainly appealed to students, based on the growing number of logins on the Group's recruitment websites. This employer brand programme was extended further through VINCI Camp. Under this initiative, information days have been or are to be held at the six Insa engineering schools in France between December 2018 and March 2019. These events allow students and faculty to discover the Group through the prism of its social commitments and promote the integration of social issues into technical education programmes.

1.2 Employment

1.2.1 Workforce

At the end of 2018, VINCI had 211,233 employees in more than 100 countries, higher than the number at year-end 2017 (194,428 employees). This increase reflects both a recovery in business activity for some companies in the Contracting business, especially in Europe, and the inclusion of new companies within the Group. Staff employed by European entities as a percentage of the total workforce came to more than 75% in 2018. Staff employed outside Europe increased, from 22% of the total workforce in 2017 to nearly 25% in 2018, in particular due to business growth in the Americas.

VINCI's companies have held up well against strong market fluctuations by implementing a number of human resources management methods, including more coordination between regional activities and solidarity measures, as well as efforts to facilitate job transfers between regions and sectors in order to keep pace with changing activities.

Workforce at 31 December 2018 by geographical area and by business line, with change

	2018								2017	2018/2017	
	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	Eurovia	Construction	VINCI Immobilier and holding cos.	Total	%	Total	Change
France	6,168	1,085	529	34,873	23,285	31,790	1,198	98,928	46.8%	96,621	+2.4%
United Kingdom	-	-	26	955	2,642	5,468	-	9,091	4.3%	8,943	+1.7%
Germany	-	-	34	11,152	3,642	346	9	15,183	7.2%	14,728	+3.1%
Benelux	-	-	-	5,032	529	218	6	5,785	2.7%	5,597	+3.4%
Central and Eastern Europe	-	1,974	45	3,057	5,332	3,966	-	14,374	6.8%	11,724	+22.6%
Rest of Europe	-	3,521	95	10,273	433	1,462	4	15,788	7.5%	13,875	+13.8%
Europe excl. France	-	5,495	200	30,469	12,578	11,460	19	60,221	28.5%	54,867	+9.8%
Americas	-	1,701	770	5,568	7,777	7,442	-	23,258	11.0%	16,496	+41.0%
Africa	-	-	-	2,363	-	12,650	-	15,013	7.1%	13,654	+10.0%
Rest of the world	-	1,744	9	4,001	-	8,059	-	13,813	6.5%	12,790	+8.0%
Total	6,168	10,025	1,508	77,274	43,640	71,401	1,217	211,233	100%	194,428	+8.6%

At 31 December 2018, VINCI's workforce consisted of 40,172 managers and 171,061 non-managers. Since 2013, the percentage of managers has grown from 18% to 19%. Over the same period, the percentage of female staff rose from 14.2% to 15.4% of total staff, representing an 8.4% increase. Women account for 14.4% of non-managers and 19.9% of managers.

Workforce at 31 December 2018 by category, gender and business line, with change

	2018								2017	2018/2017	
	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	Eurovia	Construction	VINCI Immobilier and holding cos.	Total	%	Total	Change
Managers	1,021	1,051	456	14,488	5,359	17,064	733	40,172	19.0%	37,769	+6.4%
Men	652	666	304	12,056	4,582	13,496	408	32,164	80.1%	30,492	+5.5%
Women	369	385	152	2,432	777	3,568	325	8,008	19.9%	7,277	+10.0%
Non-managers	5,147	8,974	1,052	62,786	38,281	54,337	484	171,061	81.0%	156,659	+9.2%
Men	2,960	6,157	583	55,099	34,110	47,448	151	146,508	85.6%	135,150	+8.4%
Women	2,187	2,817	469	7,687	4,171	6,889	333	24,553	14.4%	21,509	+14.2%
Total	6,168	10,025	1,508	77,274	43,640	71,401	1,217	211,233	100%	194,428	+8.6%
Men	3,612	6,823	887	67,155	38,692	60,944	559	178,672	84.6%	165,642	+7.9%
Women	2,556	3,202	621	10,119	4,948	10,457	658	32,561	15.4%	28,786	+13.1%

The age structure at VINCI shows an even breakdown between the various age brackets. In five years, the share of the workforce aged under 25 has remained at around 9%, while the over-50 age bracket has remained stable at about 26%.

Workforce at 31 December 2018 by age and business line, with change

	2018								2017	2018/2017	
	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	Eurovia	Construction	VINCI Immobilier and holding cos.	Total	%	Total	Change
Under 25	110	777	184	8,432	3,642	6,881	144	20,170	9%	17,605	+15%
26-35	390	2,793	582	19,682	9,601	21,412	398	54,858	26%	50,547	+9%
36-50	2,710	4,560	570	29,048	17,053	27,866	436	82,243	39%	76,842	+7%
Over 50	2,958	1,895	172	20,112	13,344	15,242	239	53,962	26%	49,434	+9%
Total	6,168	10,025	1,508	77,274	43,640	71,401	1,217	211,233	100%	194,428	+9%

1.2.2 Recruitment and departures

The rise in staff levels between 2017 and 2018 is the result of a turnaround in activity in the Contracting business in some European countries, and of the Group's international expansion, in particular in the Americas. Employee turnover of approximately 26% in 2018, which is in line with that of the sector, results from the expiry of worksite contracts, in particular outside France. This reflects a Group recruitment policy adapted to new worksites.

1.2.2.1 Recruitment

Worldwide, the proportion of permanent jobs (permanent job contracts, unlimited-term contracts, site contracts) rose from nearly 49.3% in 2017 to 53.6% in 2018. VINCI again pursued its recruitment policy in 2018. In particular, 4,863 young people were hired, accounting for more than 16% of all new hires in permanent jobs. VINCI hired 56,554 people worldwide in 2018, including 30,299 in permanent jobs (10,941 in France).

1.2.2.2 Types of employment contract

Of the Group's 211,233 staff worldwide at end-2018, 182,492 were employed under permanent job contracts and 28,741 under non-permanent contracts (primarily fixed-term contracts in France). The Group's business lines make use of temporary staff to adjust labour needs to the pace of their business activities. In 2018, 14,306 temporary staff (full-time equivalent) worked for VINCI in France, up 7.6% from 2017. VINCI promotes the inclusion of young people on work-study programmes to help them acquire both on-the-job experience and classroom training. It signed the "Charter in favour of training through work-study programmes" with France's Ministry for Apprenticeship and Professional Training in 2011. On average over the year, 5,029 young people received training under work-study programmes within the Group in 2018 (4,478 in 2017).

Workforce at 31 December 2018 by type of employment contract and business line, with change

	2018								2017	2018/2017		
	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	Eurovia	Construction	VINCI	VINCI Immobilier and holding cos.	Total	%	Total	Change
Permanent job contracts ^(*)	6,019	8,478	1,172	70,341	40,160	54,111	1,078		181,359	86%	167,296	+8%
Site contracts ^(**)	-	-	-	171	178	784	-		1,133	0%	1,082	+5%
Non-permanent job contracts ^(***)	77	1,523	316	3,706	2,148	15,173	49		22,992	11%	20,936	+10%
Work-study programmes	72	24	20	3,056	1,154	1,333	90		5,749	3%	5,114	+12%
Total	6,168	10,025	1,508	77,274	43,640	71,401	1,217		211,233	100%	194,428	+9%
Temporary staff (full-time equivalent)	6	425	6	9,379	3,828	13,889	28		27,561	13%	23,769	+16%

(*) Unlimited-term contracts for France.

(**) Contract type specific to France.

(***) Fixed-term contracts for France.

VINCI promotes local employment and career progression within the Group. Intra-group staff transfers totalled 2,298 in 2018. Group companies offer international volunteering programmes that give graduates the opportunity to work abroad. In 2018, 196 people were welcomed under these programmes, a slight decrease on the number in 2017 (214). The Group had 1,703 expatriate employees at end-2018.

Worldwide intra-group transfers

	2018								Total	Percentage of 2018 staff
	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	Eurovia	Construction	VINCI	VINCI Immobilier and holding cos.		
Transfers within a business line	9	8	4	1,189	278	646	4		2,138	93%
Transfers to another business line	4	3	7	41	31	65	9		160	7%
Total	13	11	11	1,230	309	711	13		2,298	100%

1.2.2.3 Reasons for departure

Contracting business operations take place at temporary worksites over a relatively short period. They typically employ a large number of people whose contracts expire once the project is completed or who seek employment with another local company to avoid having to move. In the Concessions business, particularly in the Motorways business line, the seasonal variations in activity also explain the number of departures, which are included under the line item "expired contracts".

Departures by business line, with change^(*)

	2018								2017	2018/2017		
	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	Eurovia	Construction	VINCI	VINCI Immobilier and holding cos.	Total	%	Total	Change
Expired contracts ^(*)	1,009	1,211	143	3,429	4,110	12,252	87		22,241	45%	18,714	+19%
Resignations	31	255	67	5,659	2,228	5,117	49		13,406	27%	11,443	+17%
Redundancies	-	-	-	303	159	796	-		1,258	3%	1,756	-28%
Dismissals	47	79	22	1,993	1,010	2,678	19		5,848	12%	4,598	+27%
Other reasons ^(**)	91	102	30	2,101	1,364	2,474	73		6,235	13%	5,842	+7%
Total	1,178	1,647	262	13,485	8,871	23,317	228		48,988	100%	42,353	+16%

(*) Excluding changes in consolidation scope.

(**) Expiry of fixed-term, site or work-study contract, or retirement.

(***) Includes termination during trial period and mutually agreed contract termination for France and others.

1.2.2.4 Workforce reduction and employment protection plans, redeployment efforts, rehiring and support measures

When the economic environment is challenging, and as VINCI's business activities cannot be relocated, senior management and human resources managers work together to ensure economic and social solidarity through job mobility and redeployment plans, which are facilitated by the Group's extensive presence. VINCI Insertion Emploi (ViE), the Group entity specialising in employment, leveraged its expertise in 2018 to support businesses that needed to reduce their workforce and help their employees develop a long-term career path. Also, when VINCI makes an acquisition, it strives to retain staff whenever possible, since they are the guardians of valuable skills and expertise, while benefiting from Group synergies to share resources and operate in networks. Some Group companies occasionally

implement redundancy plans or redeploy employees. On the major sites, Group companies manage large-scale redundancy and staff redeployment moves. VINCI's Human Resources Department and local HR managers conduct monthly reviews of sites that are experiencing business or employment difficulties in and outside France, and define suitable employment policies with them.

1.3 Remuneration and employer social contributions worldwide

1.3.1 General remuneration policy

The remuneration policy is based on common principles of allowing staff to take part in their company's success through profit-sharing and incentive plans that reward individual performance. It is in keeping with the Group's decentralised management structure. These principles are implemented through different means in the countries where VINCI operates, in accordance with national contexts, laws and regulations. Employee remuneration takes different forms: wages, bonuses, profit-sharing, incentive plans, employee share ownership, insurance and retirement plans, and other company benefits. VINCI encourages the improvement of all these efforts. All employees, regardless of position, are rewarded in accordance with their responsibilities and performance.

At the end of 2018, 97% of employees in France benefited from incentive plans and/or profit-sharing agreements. VINCI distributed higher amounts in France under profit-sharing and incentive plans than the previous year (€163.4 million, up from €151.6 million shared from the Group's growth in 2017).

Employee benefits, with change

(in € millions)	2018	2017	2018/2017 change	Of which France 2018	Of which France 2017	2018/2017 change
Incentive plans	83.7	79.9	+4.8%	72.3	68.3	+5.9%
Profit-sharing	102.5	95.9	+6.9%	91.1	83.3	+9.4%
Welfare protection	42.7	40.6	+5.2%	35.3	33.9	+4.1%
Employer contribution	203.5	130.7	+55.7%	185.9	113.6	+63.6%
Total	432.4	347.1	+24.6%	384.6	299.1	+28.6%

1.3.2 Remuneration and employer social contributions

Payroll expenses totalled €9,987 million in 2018 (€9,215 million in 2017). Payroll-to-revenue remained stable on 2017, at about 23%.

All the Group's main human resources directors meet on a monthly basis, at which time they share best practices and set forth guidelines relating to remuneration and employer social contributions, which vary in accordance with the labour laws of each country and as a function of the manager and non-manager categories. VINCI presents these consolidated figures for the world and France.

The analysis performed each year of gaps in remuneration shows that men have historically held the operating positions, which partially explains the lag in remuneration between men and women, although women are making headway in these jobs (see section 1.8.2). Each entity carries out the analysis of remaining pay gaps and ensures equal remuneration for the same job and job potential.

Remuneration and employer social contributions worldwide

(in € thousands)	Total		Managers		Non-managers	
	2018	2017	2018	2017	2018	2017
Average VINCI salary	37	36	65	64	30	29
Men	37	36	68	67	30	29
Women	33	33	50	50	27	27
Employer social contributions	33%	34%	38%	38%	31%	32%

In the case of France, the presentation shows more precise segmentation: managers; office, technical and supervisory staff; and manual workers. Figures designate gross annual averages in thousands of euros.

Remuneration and employer social contributions in France

(in € thousands)	Total		Managers		Office, technical and supervisory staff		Manual workers	
	2018	2017	2018	2017	2018	2017	2018	2017
Average VINCI salary	41	41	67	67	34	34	29	29
Men	42	41	71	71	35	35	29	29
Women	39	38	53	53	30	30	28	26
Employer social contributions	47%	46%	49%	48%	48%	47%	43%	43%

1.3.3 Employee savings plans

1.3.3.1 Employee share ownership

VINCI continued its employee savings efforts, carrying out three share issues during the year, as provided for under the terms of its Group savings plan in France. The regularity of share issues ensures the strength and continuity of this plan, which has been available to employees since 1995.

Employee investment in the Castor fund, which invests exclusively in VINCI shares, is encouraged through a 5% discount on a predetermined share price and an employer contribution. Employer contributions were raised in 2018. To encourage more employees to participate in its savings plan, especially those within the lowest pay bracket, in 2018 VINCI increased the percentage of its matching contributions to 200% of the amount invested by employees for the first tranche of savings, and raised its maximum annual contribution to €3,500 (€2,500 in 2017). The new employer contributions break down as follows:

- 200% up to €500;
- 100% from €501 to €2,000;
- 50% from €1,001 to €4,000.

The employer's maximum annual contribution per employee thus amounts to €3,500. The total employer's contribution for the Castor Fund was over €185 million for France in 2018.

To support its international business development and strengthen staff's sense of belonging to the Group, VINCI decided to extend its employee savings arrangements by giving employees in countries other than France the chance to acquire (directly or indirectly) VINCI shares at preferential prices and thereby give them a greater interest in the Group's financial performance and growth. In 2018, a new plan was initiated in 31 countries^(*) to benefit employees that have been working at least six months at subsidiaries in which VINCI owns more than a 50% stake. The plan covered about 500 subsidiaries. Subject to holding their shares for three years, employees may receive an employer contribution from VINCI in the form of a bonus share award, deferred to avoid initial taxation (with exceptions) and dependent on employees remaining with the Group for the required time period.

To develop these plans outside France, VINCI decided to carry out a similar plan in 2019 in 36 countries, adding five countries – Finland, Norway, Greece, Cameroon and Italy – and bringing the number of employees covered to about 80,000 in 550 subsidiaries. This increases the plan's coverage to more than 75% of Group employees outside France who are eligible to become VINCI shareholders.

In eight years, staff covered by the employee savings plan has climbed from about 59% to 88% of Group employees worldwide.

Coverage of employee savings plans

	2014	2015	2016	2017	2018
Number of countries covered (including France)	24	28	30	30	31
Percentage of employees covered	88%	87%	88%	88%	88%

At end-2018, just over 130,000 current and former Group employees held 9% of VINCI shares via the various investment funds invested in VINCI shares. Collectively, its employees are VINCI's largest shareholder, reflecting their confidence in their Group's future. At the same date, the average employee portfolio totalled more than €31,700.

Created in 2011, VINCI's Employee Shareholders' Circle had about 14,000 members at 31 December 2018, up slightly from the preceding year. The Circle offers a toll-free phone number and a secured and personalised space on VINCI's internet and intranet websites. Employee shareholders may use these facilities to register as Circle members or participate in events such as discovery tours of Bordeaux, Lyon, Marseille or Paris, as well as visits to worksites or VINCI projects. The e-letter "En Direct" keeps readers informed of Group events and news.

1.3.3.2 Retirement plans

In France, the Group's collective retirement savings plan, Perco Archimède, came into force in December 2010 in France following the collective agreement with French trade unions CFTD, CFE-CGC and CFTC on 25 June 2010. It rounds out the Group savings plan, and is gradually gaining in popularity. This plan was established to allow employees to offset reduced income from mandatory pension plans and to save for retirement under more attractive terms than they could obtain individually. It allows them to:

- receive a lump-sum payment or annuity upon retirement;
- manage their investment themselves or opt for guided management;
- select from a wide range of investment vehicles in accordance with their particular savings or investment profile.

To help its employees more in forming a supplementary retirement plan, in 2016 VINCI decided to double the percentage and amount of the matching contributions it makes: voluntary contributions are now matched 100% with an annual ceiling of €400 for contributions of €400. At end-September 2018, almost 32% of employees in France had subscribed to the Perco Archimède plan, more than 59% of whom were under the age of 50. The average portfolio value was nearly €2,035, an increase of 3% from 2017. The percentage of investments under guided management continued to rise steadily to reach 54%, while 46% were managed by employees themselves.

Employer contributions to the Group's collective retirement savings plan totalled €4.8 million in 2018 for France, up 12% from the €4.3 million contributed in 2017.

^(*) Australia, Austria, Bahrain, Belgium, Brazil, Cambodia, Canada, Chile, Czech Republic, Dominican Republic, Germany, Hong Kong, Indonesia, Luxembourg, Malaysia, Mexico, Morocco, Netherlands, New Zealand, Peru, Poland, Portugal, Romania, Singapore, Slovakia, Spain, Sweden, Switzerland, UAE, UK and USA.

In 2013, VINCI established a fixed-contribution supplementary pension plan in France to help executives and other management-level personnel form a supplementary pension plan and take into account the mandatory pension plans affecting this personnel category in particular. Called Reverso, this plan complements Perco Archimède, which is available to all personnel in France, and combines the technical, financial, social and tax advantages of a company pension plan with those of an individual plan. The plan is vested exclusively by annuity.

Reverso is funded by equal contributions from employee and employer (based on the contribution rate rising proportionately to remuneration), and the basic contributions are deductible from the employee's taxable income, as are any additional contributions the employee chooses to make. The plan was set up under an insurance contract between VINCI SA and the insurer ACM-Vie in the summer of 2013 and has since been rolled out at subsidiaries. At end-2018, Reverso was available to all Group subsidiaries and eligible employees in France, covering 746 companies and representing a potential of 25,000 employees.

1.4 Organisation of working hours

1.4.1 Hours worked and overtime

Working hours in all VINCI Group companies are subject to each country's legal requirements and collective agreements. In 2018, employees worked nearly 360 million hours. The percentage of overtime hours has been stable for more than a decade, at between 4% and 6% of hours worked, compared with 5.5% in 2017, for a total of more than 19 million hours in 2018.

Organisation of working hours, with change

	2018			2017	2018/2017
	Managers	Non-managers	Total	Total	Change
Total hours worked	66,836,919	292,843,893	359,680,812	334,545,509	+8%
Of which overtime	375,195	19,346,732	19,721,927	15,743,161	+25%
Number of part-time employees	969	5,561	6,530	6,081	+7%

1.4.2 Absenteeism

Employees were absent from work 3.7 million days out of 48 million calendar days in 2018. Absenteeism represented almost 8% of working days. The percentage of non-occupational illnesses in absenteeism has been stable at about 60% for more than a decade (58% in 2018). The percentage of workplace accidents stood at 4.1% of total days of absenteeism.

Days of absenteeism by cause and by business line, with change

(in number of calendar days)	2018							2017	2018/2017		
	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	Eurovia	VINCI Construction	VINCI Immobilier and holding cos.	Total	%	Total	Change
Non-occupational illness	104,612	47,203	5,867	905,262	513,821	543,354	8,285	2,128,404	57.8%	2,015,315	+5.6%
Workplace accident	5,449	7,364	500	36,537	40,118	60,797	75	150,840	4.1%	156,510	-3.6%
Commuting accident	822	1,966	106	10,910	7,972	8,081	71	29,928	0.8%	30,079	-0.5%
Recognised occupational illness	1,014	482	-	12,160	22,759	25,734	-	62,149	1.7%	62,417	-0.4%
Maternity/paternity leave	5,074	17,147	4,130	134,817	58,248	98,748	5,753	323,917	8.8%	288,846	+12.1%
Short-term work	-	-	-	7,261	9,271	22,273	-	38,805	1.0%	80,237	-51.6%
Other cause	13,630	17,026	1,368	209,879	328,993	377,656	2,287	950,839	25.8%	777,492	22.3%
of which weather events ^(*)				15,767	144,409	87,354		247,530	6.7%	-	-
Total	130,601	91,188	11,971	1,316,826	981,182	1,136,643	16,471	3,684,882	100%	3,410,896	+8.0%

(*) Indicator not reported in previous years.

1.5 Health and safety

1.5.1 General health and safety policy

Achieving zero accidents remains VINCI's priority. This objective, reiterated in VINCI's Manifesto, applies not only to VINCI employees but also to temporary staff and anyone else on a VINCI site, including the employees of joint contractors and subcontractors and on sites under operation (motorway and airport users, etc.). The Group encourages and supports its subcontractors and suppliers in this effort by sharing tools and resources with them and involving them in safety actions. Safety performance has improved significantly since this priority policy began to be implemented, in particular in recent years, with the reduction in frequency of lost-time workplace accidents to 6.10 (from 7.77 in 2013). VINCI's commitment to attain zero accidents was confirmed in a statement issued in 2017 with the Group's European Works Council. The statement provides a set of guidelines for the essential and fundamental steps to be taken, along with measures for progress and initiatives within Group companies to explore ways of improving health protection and the prevention of occupational risks. It upholds the shared belief that progress can only take place with the support of all employees and their representatives by promoting a culture of workplace safety.

In 2018, the Group continued its drive to instil a culture of safety awareness in all employees as well as its work on the reporting and analysis of near-miss incidents. The early detection of near-miss and at-risk situations helps keep down the number of accidents but, above all, contributes to the creation of a daily safety awareness culture. Taking further steps in this area, VINCI joined the Institute for an Industrial Safety Culture (ICSI) in 2018 and will join the Foundation for Industrial Safety Culture (FonCSI) in 2019 to take part in a research programme on ensuring safety in the future. The Contracting business lines regularly organise safety events throughout the world. In 2018, these events included World Safety Week organised by VINCI Energies and VINCI Construction, and Eurovia's International Prevention Day.

The inclusion of temporary staff and subcontractors in safety training and awareness activities continues to develop within the Group. Moreover, safety data on temporary staff and subcontractors is increasingly included in performance monitoring indicators.

1.5.2 Health and safety of VINCI employees

The main goal of the Group's health and safety policy is to anticipate and prevent occupational hazards, including psychosocial risks. It also consists in ensuring the quality of hygiene, health, safety and quality of life in the workplace, and ensuring the redeployment of employees who have suffered a workplace accident or illness. The health and safety coordination system ensures the implementation of VINCI's H&S policy. This worldwide system brings together the health and safety managers in all the business lines. It aims to foster the sharing of best practices, improve the reliability of H&S indicators, and propose new ways of making progress in keeping with each business activity's specific situation. Accident prevention Pivot Clubs and internal collaborative platforms help disseminate and monitor safety measures for the community made up of several hundred H&S coordinators and managers.

Training, awareness and employee support campaigns are among the various measures taken to promote health and safety. With respect to occupational health actions, the Group's initiatives, campaigns and reports focus mainly on substance abuse, studies of workstation ergonomics and musculoskeletal disorders. A number of measures have been taken to upgrade equipment and tools and to implement flexible work arrangements. Several companies in France develop their policy on improving quality of life in the workplace in partnership with the French national agency for the improvement of working conditions (Anact). Training programmes for managers have been developed at most Group business lines to reinforce the culture of safety among management.

As a result of these various actions, the proportion of companies with no lost-time workplace accidents has risen from 66% to 72% in five years, which represents an improvement of more than 9%.

Frequency and severity rates, percentage of VINCI companies with no lost-time workplace accidents, with change

	Group			Of which France		
	2018	2017	2018/2017 change	2018	2017	2018/2017 change
Lost-time workplace accident frequency rate ^(*)	6.10	6.60	-7.6%	8.54	9.33	-8.5%
Lost-time severity rate ^(**)	0.42	0.47	-10.6%	0.81	0.85	-4.7%
Percentage of companies with no lost-time workplace accidents	72%	72%	0%	66%	65%	+2%

^(*) Lost-time workplace accident frequency rate = (number of lost-time workplace accidents x 1,000,000)/number of hours worked.

^(**) Lost-time severity rate = (number of days lost due to workplace accidents x 1,000)/number of hours worked.

☑ The indicators presented in the table have been checked to a level of reasonable assurance.

In five years, the frequency of lost-time accidents declined from 7.77 in 2013 to 6.10 in 2018.

Frequency and severity rates of lost-time workplace accidents by business line

	Frequency rate		Severity rate	
	2018	2017	2018	2017
Concessions	11.31	13.42	0.55	0.58
VINCI Autoroutes	4.45	6.71	0.66	0.74
VINCI Airports	14.61	18.93	0.57	0.55
Other concessions	15.79	9.28	0.15	0.19
Contracting	5.74	6.09	0.41	0.46
VINCI Energies	4.79	5.23	0.29	0.36
Eurovia	7.15	7.15	0.59	0.56
VINCI Construction	5.92	6.30	0.44	0.49
Group	6.10	6.60	0.42	0.47

☑ The indicators presented in the table have been checked to a level of reasonable assurance.

In 2018, occupational illnesses recognised in the Group were responsible for 62,149 days lost out of a total of 48 million days worked.

Number of days lost through recognised occupational illnesses and the severity and frequency rates, with change

	Group			Of which France		
	2018	2017	2018/2017 change	2018	2017	2018/2017 change
Days lost through recognised occupational illness	62,149	62,417	-0.4%	61,789	62,020	-0.4%
Recognised occupational illness frequency rate ^(*)	0.80	0.99	-19.2%	1.88	2.21	-15.4%
Recognised occupational illness severity rate ^(**)	0.17	0.19	-10.5%	0.42	0.43	-2.3%

^(*) Occupational illness frequency rate = (number of recognised occupational illnesses x 1,000,000)/hours worked.

^(**) Occupational illness severity rate = (number of days lost through occupational illness x 1,000)/hours worked.

1.5.3 Health and safety of temporary staff

Under the terms of the Group's framework agreement in France with its partners, temporary employment agencies participate fully in the Group's health and safety policy aims, notably its zero accidents objective.

A new list of approved temporary employment agencies came into effect on 1 January 2016. They are selected from the Group's framework agreement based on stricter occupational health and safety criteria.

The gap between the workplace accident frequency rates of VINCI employees and temporary staff reflects differences in the jobs performed, in safety awareness, and in technical know-how and experience. Reports on workplace accidents involving temporary staff enable VINCI companies to take concrete action to prevent them from recurring. The accident frequency rate was 15.03 in 2018. After a period of economic crisis, the use of temporary staff increased. Worldwide, the number of temporary staff rose from 23,769 in 2017 to 27,561 in 2018 (full-time equivalent).

Lost-time workplace accident frequency of temporary staff worldwide and by business line, with change ^(*)

	2018	2017	2018/2017 change
Concessions	29.68	6.22	+377.2%
Contracting	14.81	14.53	+1.9%
Total	15.03	14.40	+4.4%

^(*) Temporary staff lost-time workplace accident frequency rate = (number of lost-time workplace accidents involving temporary staff x 1,000,000)/number of hours worked by temporary staff.

1.5.4 Subcontractor health and safety

Subcontracting accounted for €8.2 billion in 2018, around 19% of Group revenue. In VINCI's business activities, subcontracting is multi-faceted and performed on diverse levels, and some VINCI companies also act as subcontractors. Under such complex circumstances, many VINCI companies have signed framework agreements with their subcontractors. The zero accidents objective is the common denominator in these agreements, which include special clauses covering the wearing of personal protective equipment, and reporting of workplace accidents and ongoing information on any change in worksite hazards. VINCI's Subcontractor Relations Guidelines underscore the Group's determination to ensure that the employees of its partner companies work under the same safety conditions as those of its own staff. The guidelines are disseminated by the regional Pivot Clubs where the regional managers of the Group's businesses meet regularly and exchange ideas.

1.5.5 Health and safety agreements

As part of its health and safety policy, VINCI negotiates and enters into specific agreements with trade unions and employee representatives on subjects related to improving staff working conditions, thereby enhancing the overall performance of Group companies. In 2018, the main subjects of collective bargaining were remuneration, working conditions and arrangements, especially relating to quality of life in the workplace.

In France, the public authorities decided to use labour-management discussions to develop the regulatory measures set up in 2015 relating to arduous work conditions. VINCI contributed to this dialogue and actively pursued it in its occupational fields in 2018, and will continue to do so in the years ahead.

The joint statement on occupational health and safety at VINCI was signed by Xavier Huillard and the secretary of the Group Works Council, Noureddine Boudjeniba, on 1 June 2017. It sets out four fundamental actions: accident risk analysis, wearing of protective equipment provided, implementation of procedures and processes to assess risks, and safety awareness.

1.6 Labour relations and collective agreements

1.6.1 General policy regarding dialogue between management and labour

VINCI's policy regarding dialogue between management and labour reflects its fundamental principles: recognising the role played by trade unions in the Group and the right of employees to belong to a union; achieving a constant balance between union involvement and close links with professional activities; facilitating communication and meetings between trade union representatives and employee representative bodies; ensuring that employee and trade union representatives are properly informed and trained by involving them in the Group's major initiatives (e.g. in the areas of health, safety, sustainable development, gender equality, and employing people with disabilities); and working to foster communication and collective bargaining worldwide. In this regard, dialogue between management and labour is confirmed as a key component to the success of the Group Manifesto and its commitments.

VINCI's decentralised organisational structure facilitates dialogue between management and labour at all Group levels. In 2018, 8,274 employees around the world served as employee representatives (including 6,977 in France). An overall budget of €220,000 is distributed to the trade unions represented on the Group Works Council in proportion to their membership, with the aim of assisting them and giving them the means of exercising their mandates.

In countries that have not ratified the International Labour Organisation's conventions on trade union rights, VINCI companies are working to give employees the means of expressing themselves.

1.6.2 Employee representative bodies

Employee representative bodies strengthen dialogue between management and labour by working with the various local organisations that oversee occupational hygiene, health, safety and working conditions.

A number of organisations covering specific cases or national situations have been set up to complement individual companies' employee representative bodies. France, for example, has a Group Works Council comprising representatives from about 50 entities that meets at least twice a year. It receives information about the Group's business and financial situation, employment trends and forecasts, and health and safety actions at Group and company levels. It is kept informed of the economic and business outlook for the coming year and has access to the Group's financial statements and the associated Statutory Auditors' reports. It is also informed, prior to any decision, of any significant projects that may affect the Group's consolidation scope or its legal or financial structure, and of their potential impact on employment. In certain business lines, bodies have also been established for each business activity to ensure the continuity of dialogue between management and labour.

The European Works Council takes up discussions within these various local or national organisations at the European level. The council's mandate, renewed in 2018 under an agreement signed by 15 out of 16 organisations, makes provisions for representatives from 15 countries in which VINCI operates: Austria, Belgium, the Czech Republic, France, Germany, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland and the United Kingdom. The role of the council, which meets once a year, is to inform and consult with employee representatives of the Group's subsidiaries in the European Economic Area and Switzerland. To ensure that the members of the European Works Council are properly informed and trained in CSR issues and to involve them in implementing CSR measures taken by the Group, a CSR commission was created in 2018 until the end of the forthcoming term. At end-2018, the council was composed of 45 representatives.

1.6.3 Trade union freedoms

Since almost 84% of the Group's business is in Europe, the European Works Council is the prime guarantor of freedom of association and the right to organise. An online platform was set up for members of the European Works Council to improve communication within the council and better inform employees of VINCI's European subsidiaries about the council's work. To fulfil its role, every year the European Works Council receives three days of training on legal, economic and social issues.

Elsewhere, VINCI companies observe the laws and regulations of the countries in which they do business. Operational managers are assisted by human resources managers, who propose the solutions best adapted to local conditions and in compliance with VINCI's commitments to observe trade union freedoms.

1.6.4 Collective agreements

The collective agreements negotiated and signed by VINCI companies are a concrete example of the Group's decentralised approach to human resources management, which takes account of the realities on the ground and aims to improve working conditions, health and safety, and the organisation of working hours. In 2018, 1,190 collective agreements were signed, of which 19% outside France.

The agreement to promote labour-management relations covering all the French companies of the VINCI Group was signed with labour representatives at end-2015, confirming consultation with employee representatives as one of VINCI's core values. This agreement provides for reinforcing the information forwarded to employee representatives and for assistance for them throughout their terms of office and also following the expiry of their terms. A joint commission has been set up to offer an alternative to disputes about restrictions on exercising terms of office to represent staff. At the end of their term of office, representatives receive a contribution to their personal training account (CPF account), subject to certain conditions relating to length of term, to help them acquire the skills needed to facilitate their reintegration into the workforce.

Collective agreements by category, with change

	2018	Portion of total agreements	2017	2018/2017 change
Flexible work arrangements	138	11.6%	104	+32.5%
Economic and social database	4	0.3%	-	0.0%
Equality and diversity	65	5.5%	55	+18.2%
Union rights	93	7.8%	64	+45.3%
Economic and Social Committee procedures	32	2.7%	-	0.0%
Training	16	1.3%	13	+23.1%
Job and skill management systems	21	1.8%	51	-58.8%
Mandatory negotiations (topic, frequency, etc.)	7	0.6%	-	0.0%
Collective performance	-	0.0%	-	0.0%
Health and safety	31	2.6%	49	-37.8%
Welfare protection	35	2.9%	92	-62.0%
Remuneration and benefits	592	49.7%	594	-0.3%
Pensions	16	3.7%	19	-15.8%
Collective mutual termination	-	0.0%	-	0.0%
Other	73	6.1%	112	-34.8%
Total	1,190	100%	1,153	+3.2%

More than 49% of the agreements related to salary. Among the other collective agreements, many involved flexible work arrangements, with 138 agreements signed in 2018. The number of agreements relating to union rights rose from 64 in 2017 to 93 in 2018.

1.6.5 Collective conflicts

Absenteeism due to strikes is very marginal at VINCI. In 2018, employee absences due to strikes totalled 5,161 days (of which 2,682 in France) out of a total of 48 million days worked in the year. Salary demands, mainly stemming from national actions, were the main cause of the strikes.

1.7 Training

1.7.1 General training policy

The main goals of the general training policy are to share the fundamentals of the Group's business culture among all employees and to transmit know-how and expertise in order to meet clients' expectations and be their best partner, as well as to maintain a high level of operational performance. This policy also strives to promote the inclusion and career development of each employee via technical and management training as well as meetings devoted to personal and career development.

Skills development is driven by the need of each business activity to improve productivity and adapt to changing techniques and technologies. With the trend towards ever more complex and comprehensive engineering structures, new training needs arise as business lines work more closely together.

To achieve these goals, VINCI's business lines and divisions have set up internal training centres. At Group level, VINCI Academy organises cross-disciplinary management and project management training programmes, and other courses for senior managers of the Group and its operational subsidiaries. VINCI Academy continued to revamp its pedagogical approach in 2018. Rollout of the new online learning solution continued at Group entities throughout the year. The tool is designed to serve as a comprehensive knowledge base for disseminating the Group's approaches and expertise.

Three new e-learning modules have been introduced for all VINCI employees. The first covers anti-corruption, the second the right to disconnect, and the third is designed to provide support for Group employees on the application of the European General Data Protection Regulation (GDPR).

In 2018, the training courses delivered by internal training centres as a proportion of all training courses was stable, at 23%. During the year, VINCI pursued its Group strategy by accelerating the creation of training content in innovation, project management, human resources management, safety, know-how and skills development for staff and subcontractors, as well as partners.

The increasing use of digital technology and new learning techniques made such acceleration possible. To expand its range of training courses, VINCI Autoroutes launched a digital learning development programme. The programme meets the goals of its companies to provide their employees with ongoing training opportunities through new self-study formats, which they can use outside the workplace. This ambitious project will add 30 newly developed training modules to the existing set of courses by the end of 2019. Training content covers a wide range of topics designed for employees from all business lines and departments, including construction, human resources, prevention, viability, IT, tolls, services, legal issues, sustainable development, customer management, and traffic information and safety. The VINCI Energies Academy is also upgrading its learning methods with digital tools and modular workspaces to promote interactivity, collaboration and creativity. Based on sharing and interaction, this training approach emphasises the ability to learn with others while giving trainees a proactive role in the learning process. One of the key training courses available from VINCI Energies was redesigned into a business game in which participants, organised into workshops, can share their work in real time using interactive screens. The next step will be to provide training in virtual classrooms. This format brings back the "physical" presence of the instructor while saving time and meeting remote learning needs.

Innovation was the focus of Eurovia's training programme in 2018. Several training courses on innovation were introduced in France to support the company's development plan. The programme features a seminar for branch managers called "The Keys to Innovation" to help them explore innovation and the startup ecosystem while introducing the fundamentals of design thinking.

Activity of internal training centres: number of training hours, with change

Business line	Internal training centre	Number of training hours in 2018	2018/2017 change	Number of trainees in 2018	2018/2017 change
VINCI^(*)	VINCI Academy	10,080	+66.1%	806	+73.0%
Concessions		150,006	-23.5%	23,883	+13.9%
VINCI Autoroutes	Parcours ASF, Parcours Cofiroute, Parcours Escota	136,154	-13.5%	21,060	+8.5%
VINCI Airports	VINCI Airports Academy	13,852	-64.3%	2,823	+81.9%
Other concessions		-	0.0%	-	0.0%
Contracting		724,999	+12.9%	51,147	+20.6%
VINCI Energies	VINCI Energies Academy	180,835	+14.8%	12,097	+25.2%
Eurovia	Eurovia Academy	99,454	+0.9%	4,745	-6.2%
VINCI Construction	Cesame, Eugene Freyssinet Centre, Sogea-Satome Centre, VINCI Construction Grands Projets	444,710	+15.1%	34,305	+23.8%
Total		885,085	+4.8%	75,836	+18.8%

(*) VINCI Academy covers all VINCI Group business lines in France and abroad.

1.7.2 Training initiatives

In 2018, an average of 19 hours of training was provided per employee within the Group. Managers received 21 hours and non-managers 18 hours, with 74% of managers receiving training. More than €225 million was spent on training in 2018. Nearly 3.8 million hours of training (up 10% from 2017) were given, mainly involving technical areas (39%), and health and safety (39%). In 2018, VINCI advanced its goal of fostering the professional development of all its employees by providing each of them with personalised training: 141,276 employees received training, representing 69% of staff.

Breakdown of training hours by subject, with change

	2018						2017	2018/2017	
	Managers	Non-managers	Men	Women	Total	%	Of which France	Total	Change
Admin and support	132,227	176,163	203,833	104,557	308,390	8.1%	172,020	270,061	+14.2%
Diversity	4,000	19,014	19,267	3,747	23,014	0.6%	3,639	15,250	+50.9%
Environment	7,781	29,186	29,205	7,762	36,967	1.0%	13,651	53,924	-31.4%
Ethics and vigilance	7,700	4,612	10,241	2,071	12,312	0.3%	5,344	-	0.0%
Health and safety	206,908	1,273,207	1,364,888	115,277	1,480,115	38.8%	761,609	1,306,245	+13.3%
Languages	61,090	79,126	93,490	46,726	140,216	3.7%	45,435	130,087	+7.8%
Management	161,126	110,412	225,895	45,643	271,538	7.1%	149,322	233,614	+16.2%
Technical	226,219	1,248,256	1,305,785	168,690	1,474,475	38.6%	676,285	1,379,549	+6.9%
Other	25,270	44,009	48,263	21,016	69,279	1.8%	26,300	83,656	-17.2%
Total	832,321	2,983,985	3,300,867	515,439	3,816,306	100.0%	1,853,605	3,472,386	+9.9%
Hours of training per employee	21	18	19	17	19	-	19	18	+5.6%

☑ Data checked by auditors, see page 254 of this report.

Environmental training

All VINCI companies make efforts to raise awareness of environmental issues, and a total of 36,967 hours of environmental training were delivered in 2018. Environmental training is increasingly incorporated into existing courses (works, studies, operations, etc.). Awareness is proactively promoted at worksites among employees, temporary staff and subcontractors with weekly "15-minute environment sessions". This initiative has been rolled out across all activities in the Contracting business in France, while more broadly, environmental training is being developed in other countries. VINCI Construction Grands Projets now offers a two-day environmental training course for all interested staff around the Group.

Environmental training and awareness, with change

	Number of hours of training		Change
	2018	2017	2018/2017
Concessions	7,491	8,584	-13%
VINCI Autoroutes	6,331	6,668	-5%
VINCI Airports	766	1,368	-44%
Other concessions	394	548	-28%
Contracting	29,476	45,340	-35%
VINCI Energies	6,733	5,273	28%
Eurovia	5,060	7,452	-32%
VINCI Construction	17,683	32,615	-46%
Total	36,967	53,924	-31%

1.8 Equality and diversity

1.8.1 General policy for promoting diversity and preventing discrimination

In this area, VINCI is pursuing the diversity policy it initiated in 2004, which is based on preventing any type of discrimination in its hiring, training, promotion and remuneration of employees and in their working conditions. It also aims to ensure equality for everyone, with a special focus on gender equality, employing people with disabilities as well as those from an immigrant background, and age pyramid management.

A worldwide network of diversity coordinators and trainers designs and implements VINCI's diversity policy. There were 288 of them at end-2018, which was almost 40% higher than in 2017. The number of coordinators outside France was doubled in 2018, rising to 48. The coordinators are trained and regularly pool know-how during diversity days or via their collaborative platform. Together, they devise policies and initiatives that can be rolled out across the Group. Two coordinator meetings were held in 2018.

Use of the digital platform "VINCI fights discrimination – what about you?" increased in 2018. The platform, which can be accessed by all employees and measures how well companies fare when tested for discrimination, had nearly 1,500 logins, up 57% compared with 2017. This self-assessment tool is made up of 150 questions, grouped into nine modules: recruitment, hiring and integration, managing jobs and skills, training, remuneration, departures and sanctions, dialogue between management and labour, quality of life in the workplace, and diversity policy. The questions are divided into two categories: anti-discrimination basics and areas for improvement. An international version in English is being developed with the support of human resources teams outside France.

In France, the Group continues to pursue its policy of expanding the number of companies with the Diversity label awarded by Afnor Certification. At the end of 2018, 11 Group companies had earned the label, covering 8.4% of staff in France, about the same as in 2017. For several Group companies, the label was successfully renewed in 2018 for another four years. Meanwhile, several other companies have entered into the accreditation process. Two Group companies in the United Kingdom have also been granted Diversity awards from the National Centre for Diversity.

In 2018, the Group set up a partnership with Elles Bougent, a non-profit organisation that aims which aims to encourage women into the engineering professions. The initiative is reaching its audience. On 31 December 2018, 563 VINCI employees participated as company representatives in events for high school students to raise their awareness about working in technical fields.

Diversity is an integral part of dialogue between management and labour. Sixty-five collective agreements (up 18%) were signed on equality and diversity in 2018. The Group's diversity policy and its main points were presented at a VINCI Group Works Council meeting.

1.8.2 Measures to promote gender equality

VINCI pursued its drive to significantly improve its gender mix and in particular to increase the percentage of women in managerial roles to 25% by end-2020. Women accounted for 19.9% of the total number of managers worldwide and 22.6% of managers in France at the end of 2018 (21.5% in 2017).

Since 2013, the number of the Group's women employees has grown from 27,095 to 32,562, representing an increase of almost 20%. During the same time frame, the number of Group employees rose 11%.

To accelerate the integration of women into its governance bodies, VINCI has set a target to double the number of women serving on all management and executive committees at Group business lines and divisions within the next two years. This policy will ultimately allow female senior executives to join the Group's Executive Committee.

Women employees by business line, with change

	2018				Total women employees	As a % of the total workforce	2017	2018/2017
	Number of women managers	As a % of managers in the workforce	Number of women non-managers	As a % of non-managers in the workforce			Total	Change
Concessions	906	36%	5,473	36%	6,379	36%	5,049	+26%
VINCI Autoroutes	369	36%	2,187	42%	2,556	41%	2,612	-2%
VINCI Airports	385	37%	2,817	31%	3,202	32%	1,923	+67%
Other concessions	152	33%	469	45%	621	41%	514	+21%
Contracting	6,777	18%	18,747	12%	25,524	13%	23,266	+10%
VINCI Energies	2,432	17%	7,687	12%	10,119	13%	9,176	+10%
Eurovia	777	15%	4,171	11%	4,948	11%	4,378	+13%
VINCI Construction	3,568	21%	6,889	13%	10,457	15%	9,712	+8%
VINCI Immobilier and holding cos.	325	44%	333	69%	658	54%	471	+40%
Total	8,008	20%	24,553	14%	32,561	15%	28,786	+13%

1.8.3 Measures to promote the employment and social integration of disabled people

The accident prevention policy aims to ensure that everything possible is done to minimise workplace accidents and their consequences in terms of incapacity. Measures to promote the employment and social integration of people with disabilities have three main strands: the redeployment of incapacitated staff, the hiring of people with disabilities, and the use of social enterprises (EA) and sheltered workshops (ESAT) that specifically employ people with disabilities.

Trajeo'h was established to help incapacitated staff remain in employment, hire people with disabilities and generally support Group companies in France in the area of disability. The non-profit organisation's activity developed significantly in 2018. The eight Trajeo'h establishments took on 840 of the requests received from VINCI employees over the year, up 9% from 2017. Trajeo'h helped keep 215 staff in employment in 2018, a 13% increase on 2017, through the adaptation of work stations, redeployment within the Group, career guidance or redeployment outside the Group.

In 2018, worldwide, 3,982 people with disabilities were working within the Group, representing 1.9% of employees. VINCI Facilities Entreprise Adaptée, a Group social enterprise working in the field of facilities management, had a total of 68 employees with disabilities, accounting for more than 92% of total staff at end-2018.

In 2018, €6.1 million of revenue was awarded to companies in Europe with workforces primarily comprised of employees with disabilities, remaining stable from the previous year. A guidebook continued to be distributed to purchasing officers and managers, explaining the workings of organisations employing mainly people with disabilities and the types of service they perform. The entire kit includes the guidebook, a contract template, a film and visual awareness props. The geo-tracking system developed by VINCI Energies France to find EA and ESAT organisations was adapted for use by all the Group's business lines.

In some countries, legislation requires companies to employ a certain percentage of staff with disabilities (certain sectors are excluded from this requirement). Companies that do not meet the requirement must pay a compensatory levy. This levy amounted to €5.2 million in 2018.

Proportion of employees with disabilities by business line, with change

	2018				2017		2018/2017		
	Managers	As a % of managers in the workforce	Non-managers	As a % of non-managers in the workforce	Total	As a % of the total workforce	Total	As a % of the total workforce	Change
Concessions	44	1.7%	475	3.1%	519	2.9%	516	3.6%	+0.6%
VINCI Autoroutes	33	3.2%	433	8.4%	466	7.6%	472	7.5%	-1.3%
VINCI Airports	9	0.9%	36	0.4%	45	0.4%	34	0.5%	+32.4%
Other concessions	2	0.4%	6	0.6%	8	0.5%	10	0.7%	-20.0%
Contracting	396	1.1%	3,047	2.0%	3,443	1.2%	3,370	1.9%	+2.2%
VINCI Energies	216	1.5%	1,442	2.3%	1,658	2.1%	1,594	2.3%	+4.0%
Eurovia	28	0.5%	693	1.8%	721	1.7%	715	1.8%	+0.8%
VINCI Construction	152	0.9%	912	1.7%	1,064	1.5%	1,061	1.5%	+0.3%
VINCI Immobilier and holding cos.	6	0.8%	14	2.9%	20	1.6%	15	1.6%	+33.3%
Total	446	1.1%	3,536	2.1%	3,982	1.9%	3,901	2.0%	+2.1%

2. Environmental information

2.1 General environmental policy: "Acting for green growth"

2.1.1 Environmental organisation

The implementation of VINCI's environmental policy, "Acting for green growth" (see page 24), is built on the Group Executive Committee's commitment, the empowerment of all operational staff within Group companies, and open dialogue with national, European and international public authorities and with environmental protection organisations. The operational departments coordinate and ensure the application of VINCI's environmental policy in all aspects of day-to-day work. They rely on a network of over 500 correspondents who are in charge of managing environmental risks and developing initiatives to protect the environment. The Group's Delegation for Sustainable Development steers this network, organises technical working groups comprising experts from each business line – such as the Biodiversity Task Force, the Circular Economy group, or the Energy Performance group – and coordinates the Group's environmental actions. The sustainable development self-assessment questionnaire, Advance, is used by all Group companies. Based on the ISO 26000 concept, it enables each subsidiary's management committee to assess its level of commitment and validate its environmental action plan.

2.1.2 Environmental reporting coverage and scope

VINCI's environmental reporting system deals with the themes listed in Article 225 of France's Grenelle II Environment Act and covers further provisions under Article 173 of France's 2016 law on the energy transition for green growth. The system provides information beyond that required to meet France's law on the duty of vigilance, as set out in section E.4 of this chapter, "Duty of vigilance plan" (Law no. 2017-399 of 27 March 2017 and Order no. 2017-1162 of 12 July 2017). It uses the Group's common financial and social reporting software and is based on the standards of the Global Reporting Initiative's Sustainability Reporting Guidelines, which have been adapted to the Group's activities (see the cross-reference table on page 365). Reporting covers nearly all of the Group's companies and uses around 60 quantitative indicators for measuring performance against key environmental parameters such as the consumption of resources (especially water) and energy, greenhouse gas emissions, waste and recycling, certification, environmental incidents and environmental risk provisions. Environmental reporting is prepared using updated methodological guidebooks and procedures that are available on the Group's intranet. In addition to this central reporting system, each business line uses its own management indicators. The note about the reporting methods used by VINCI, on pages 245 to 248, covers the key points.

Environmental reporting covered 96% of the Group's consolidated revenue at end-2018. Despite a slight decrease, this rate was maintained thanks to the steadfast dedication of Group companies and the consolidation of new companies outside France. At VINCI Construction, coverage has decreased since 2015 primarily due to project phasing: the completion of major projects outside France, which are the main international projects to be monitored for reporting purposes, and the launch of new projects.

Environmental reporting coverage – excluding acquisitions in 2018

<i>(as a percentage of revenue)</i>	2018	2017	2016
Concessions	100	99	100
VINCI Autoroutes	100	100	100
VINCI Airports	100	100	100
Other concessions	100	89	100
Contracting	-	-	-
VINCI Energies	100	100	99
Eurovia	100	100	99
VINCI Construction	88	90	90
VINCI Immobilier	100	100	100
Total	96	97	95

VINCI has submitted its environmental information for review by its Statutory Auditors since 2002. Environmental data is presented in compliance with Article 225 of France's Grenelle II Environment Act and additional provisions set forth mainly in application of the law on the energy transition for green growth (Article 173) and the law on combating food waste. It also meets the requirements of Order no. 2017-1180 of 19 July 2017 and Decree no. 2017-1265 of 9 August 2017, which transposed the European directive on disclosure of non-financial information by certain large undertakings and groups into French law.

Having been one of the first French companies to support voluntary reviews of its data, VINCI is continuing its efforts. The Group considers transparency with respect to stakeholders to be an element of its performance. The data presented in this report is consolidated using the same method as VINCI's financial data. Some entities, such as QDVC (Qatari Diar VINCI Construction Grands Projets), which is 49%-owned by VINCI Construction Grands Projets, are still consolidated proportionally.

2.1.3 Environmental certification

VINCI encourages its companies to obtain ISO 14001 or similar environmental certification to confirm and improve the effectiveness of their environmental management system. Operational activities maintained their high certification level in 2018. All of VINCI Autoroutes' in-service motorways are ISO 14001 certified, while VINCI Airports has 12 airports certified, corresponding to 52% of its revenue. In Contracting, the proportion of revenue generated by certified entities is steadily increasing at VINCI Energies, with 47% now certified compared with 24% in 2010.

Group activities covered by ISO 14001 environmental certification

(as a percentage)	ISO 14001			Scope/base reference
	2018	2017	2016	
VINCI Autoroutes				France
Motorways in service	100	100	100	Kilometres
Motorways under construction	-	-	100	Kilometres
VINCI Airports, percentage of revenue	52	52	72	France and worldwide
Other concessions, percentage of revenue	7	24		France and worldwide
VINCI Energies, percentage of revenue	47	44	43	France and worldwide
Eurovia				France and worldwide
Production from quarries owned	50	60	60	Tonnes
Production from coating plants owned	58	48	45	Tonnes
Production from binder plants owned	77	67	33	Tonnes
Revenue from the works activity	30	27	25	France and worldwide
VINCI Construction, percentage of revenue	79	83	81	France and worldwide

VINCI companies have acquired substantial expertise in meeting a variety of environmental standards, including HQE®, BREEAM® and LEED®. In 2018, they delivered 298 certified projects, of which 35 BREEAM® projects and 20 LEED® projects involving both new and refurbished buildings for a total of €2.5 billion. Since 2010, these certification labels have been awarded to 2,969 projects amounting to €29.2 billion. For example, VINCI Construction France worked on the VO2 building project in Vaucresson outside Paris, which aims to obtain the Cradle to Cradle certification awarded to products that make a positive contribution to the circular economy. The project will use a system to capture the heat produced by the A86 tunnel (heat that would otherwise be lost), providing low-carbon energy to supply 50% of the town's hot water and heating requirements. The Le Ray programme in France's south-eastern city of Nice was launched in early 2018 by VINCI Immobilier. The project and materials used meet NF Habitat certification standards and comply with the Bâtiments Durables Méditerranéens (Sustainable Mediterranean Buildings) approach. The building's green structure was awarded the BiodiverCity® label.

Some Group companies have also created their own labels, such as Attitude Environnement by VINCI Construction France and Environmental Excellence by Eurovia. Eurovia's label is awarded to projects that meet the 45 assessment criteria reviewed in an internal audit. These criteria are grouped into five categories: soil and water conservation, climate change, waste management and recovery, biodiversity conservation, and local residents. To obtain the label, each worksite must not only comply with a set of basic requirements that applies to all projects, but also identify one or more specific issues in the project that reflect how it demonstrates this excellence. In 2018, the Bailly Romainvilliers worksite outside Paris was awarded the Environmental Excellence label for taking into account issues such as users, retail outlets and local residents, managing surface water, reducing energy consumption, and using digital tools to improve acceptance of the project by the local community. In 2018, 19 worksites obtained the Eurovia Environmental Excellence label.

2.2 Prevention and restoration

2.2.1 Preventing environmental incidents

VINCI continuously works to improve practices at Group companies to avoid and reduce as much as possible the impact of its business activities on the environment. This commitment, supported at the highest level of the Group's organisation, is adapted and monitored in line with the Group's decentralised management structure to meet each company's specific needs and take appropriate measures. Each Group entity prepares and updates environmental incident prevention plans that address its specific environmental risks. Under regulations passed in France (Law no. 2017-399 of 27 March 2017), VINCI is establishing a duty of vigilance plan (see section E.4, "Duty of vigilance plan", page 228). The Group's major environmental issues have been analysed and prioritised. This review showed that the most significant issue was environmental incidents. Assessment procedures and measures taken to mitigate environmental incidents were reviewed at Group subsidiaries and some subcontractors. Findings show that appropriate measures are in place, and VINCI companies provide staff with regular training on these issues.

Many projects undergo a preliminary analysis of environmental risks to determine the appropriate prevention equipment and procedures. Specific documents and equipment are provided to help prepare for and respond to emergency situations.

A large number of prevention measures are taken to limit the pollution risks related to the Group's business activities. To prevent accidental oil and chemical leaks into soil or water, machine operators are provided with containment trays that they can place under fuel tanks when working in high-risk natural environments. The concentration of suspended solids in drainage water is also checked as the water flows out of the settling basins at worksites and airport, quarry and motorway operating sites before these solids enter nearby watercourses.

Emergency response procedures have been established if pollution is detected at worksites or operating sites. For example, machine operators working at most sites are provided with anti-pollution kits to respond if a machine pollutes the natural environment. For cases of major pollution, companies are required to rehabilitate the site and environment affected. Companies prepare for these response situations with the 15-minute environment sessions regularly organised at worksites to raise staff awareness.

In 2018, VINCI or its subcontractors were involved in one major environmental incident (three in 2017). A major incident is defined as one that creates extensive pollution requiring clean-up by external specialists and has consequences stretching beyond the entity's responsibility. This incident occurred at the beginning of the year in Peru (at the concession operator Lamsac) and involved a fuel leak, which contaminated the soil. All available resources were implemented to repair the damage caused, in accordance with applicable regulations.

2.2.2 Legal and regulatory compliance

In regard to France's Grenelle II Environment Act, VINCI implements processes to comply with changing legislation. Special IT tools for managing regulatory and QHSE risks are also used, such as VINCI Energies' Préventéo®, which supports regulatory monitoring and the standardisation of criteria for the Group's regulatory audit. The Group pools this expertise and environmental regulation monitoring efforts within cross-business working groups.

In application of the French law on the duty of vigilance (Law no. 2017-399 of 27 March 2017 and Order no. 2017-1162 of 12 July 2017), whistleblowing procedures were strengthened to support staff members who report environmental incidents arising at any Group project. These procedures are part of the Group's whistleblowing system set up by the Ethics and Vigilance Department (see paragraph 4.5).

2.2.3 Prevention of environmental impacts and associated costs

Expenditure on protecting the environment (e.g. soil remediation at Soletanche Bachy, cleaning and decontamination of structures at Freyssinet, environmental offsetting policy at VINCI Concessions, and recovery of organic materials at VINCI Environnement) is generally included directly in each project's operating expenses and is not consolidated centrally.

2.2.4 Environment provisions and guarantees

Due to the Group's wide range of business activities, costs and investments made to prevent these risks are not monitored at a consolidated Group level. However, identified risks are analysed on a case-by-case basis and provisions set aside if necessary. At 31 December 2018, provisions set aside by Eurovia, covering most of the company's environmental risks, represented €20 million, of which €10 million for business operations carried out in France. Provisions set aside by other VINCI subsidiaries are immaterial.

Nine VINCI facilities, all operated by Eurovia, are concerned by phase III of France's National Allocation Plan under the EU emissions trading system. Of these nine sites, Eurovia's CIFC plant at Fos sur Mer near Marseille accounts for most of these emissions, which totalled 215,090 tonnes of CO₂ in 2017. As this quantity exceeded emissions allowances, Eurovia purchased an additional allowance of 50,000 tonnes to cover its requirements until 2020.

2.2.5 Damages paid in 2018 following legal decisions on environmental matters and lawsuits filed for damage to the environment

Legal decisions regarding the environment are handled directly by the business units concerned and the amounts paid are not consolidated at Group level. No VINCI companies appear to have paid any significant damages in 2018 subsequent to a court decision on an environmental matter.

2.3 Resource conservation and the circular economy

Sustainable management of resources, in line with the concept of a circular economy, is a fundamental component in VINCI's environmental policy, which focuses on the three key areas and seven pillars defined by Ademe, the French environment and energy management agency. The circular economy concept is incorporated into a variety of aspects of VINCI's business, ranging from the eco-design strategy used in its products and services to the management of resources (water, soil, waste, energy, etc.). VINCI firmly believes that the circular economy must be central to its business activities, drawing on three main concepts: eco-design, a systemic and regional approach, and inclusive and collaborative methods.

2.3.1 Sustainable use of resources

2.3.1.1 Protecting water resources

VINCI answered the CDP Water Information Request for the seventh time, to be once again among the 2,113 companies worldwide capable of replying to the information request supported by 656 global investors. The Group achieved a rating of C for 2017, outscoring many other companies in its sector in the area of water management. The Group's water strategy is based on its environmental policy: it includes water consumption and pollution prevention in risk analyses; measures and reduces water consumption resulting from its business activities and products; and protects aquatic environments and their ecosystems. A Marine and Inland Waterway Works Pivot Club identifies expertise and designs new, specific offerings that account for approximately 5% of VINCI Construction's revenue. Many opportunities are developing in this sector. The demand for fresh water is expected to result in huge investment, and extreme weather events (flooding, tsunamis, etc.) are likely to require large-scale works in the future.

Group companies monitor water resources particularly carefully. Subsidiaries have adopted a number of specific initiatives to reduce their consumption. Leak detection programmes have been implemented at VINCI Autoroutes. VINCI Construction has introduced a wastewater recycling policy in France. About 100 closed-loop concrete mixer washing stations have significantly reduced water consumption at worksites. All of their concrete batch plant installations feature settling basins to treat effluents and recycle water. On Reunion Island (France), almost all of the process water from prefabrication sites is collected on the worksite of the new coastal highway so that it operates as a closed-loop system.

Conserving water resources also involves protecting wetlands. For example, of all the VINCI motorways in service in France, 78.6% have been equipped with either natural water protection systems or engineering structures that address potential problems to prevent accidental pollution in the surrounding natural environment.

The life cycle analysis tools used by VINCI provide a detailed assessment of the water footprint of specific neighbourhoods, with particular emphasis given to ground permeability, rainwater harvesting and wastewater treatment. Some subsidiaries have created specific products and services to conserve fresh water resources. VINCI Construction Terrassement developed Aqua-eco, a new technology that applies technical processes to reduce by up to 40% the amount of water used for hosing down civil engineering project worksites. VINCI Construction Grands Projets set up Water Management International, a structure designed to manage and optimise drinking water systems outside France. The research on urban rainwater management led in 2018 under the VINCI-ParisTech Chair in the Eco-design of Buildings and Infrastructure came up with several solutions that could be applied to urban agriculture and the creation of green roofs. As a result, 65% of rainwater runoff can be collected in planters installed on roofs.

Consumption of water purchased (in cubic metres)

	2018	2017	Change
Concessions	2,778,392	2,482,359	+11.9%
VINCI Autoroutes	811,742	792,587	+2.4%
VINCI Airports	1,870,792	1,635,207	+14.4%
Other concessions	95,858	54,565	+75.7%
Contracting	7,839,213	9,796,878	-20.0%
VINCI Energies	326,170	312,630	+4.3%
Eurovia	3,085,122	3,192,610	-3.4%
VINCI Construction	4,427,921 ^(*)	6,291,638	-29.6%
VINCI Immobilier	4,123	3,344	+23.3%
Total	10,621,728	12,282,581	-13.5%

(*) Scope does not include Seymour White (VINCI Construction International Network).

In the Contracting business, the marked variation in consumption is explained by the significant differences in the types of project from one year to the next. Consumption rose for the Concessions business, partly due to the inclusion of new airport concessions in the reporting scope and to the integration of Lamsac by VINCI Highways. Many of the Concessions business companies have taken steps to reduce their water consumption. For example, ANA, part of VINCI Airports, is the only airport operator in the world that measures its water footprint across all 10 of its airports. An action plan has been defined for each airport to control and reduce consumption and pollution throughout the value chain.

VINCI continues to improve its monitoring of water consumption by consolidating the monitoring of consumption of water from boreholes and of water pumped directly from the natural environment. The programme at VINCI Autoroutes to monitor its consumption of water from boreholes now covers most of its network.

Consumption of water taken directly from the natural environment (in cubic metres)

	2018				2017			
	VINCI Autoroutes	VINCI Airports ^(*)	Other concessions ^(**)	Total Concessions	VINCI Autoroutes	VINCI Airports	Other concessions ^(**)	Total Concessions
Water from boreholes and taken directly from the natural environment	399,454	197,954	3,376	600,784	392,235	206,884	3,550	602,669

(*) Scope includes Lyon-Saint Exupéry Airport as of 2017.

(**) In Other concessions, the Le Mans stadium is the only one with its own borehole.

Measuring the consumption of water purchased or taken directly from the environment by drilling or pumping remains complex. Measurements should be combined with a qualitative analysis to assess the actual impact of water use and how it returns to the natural environment. By way of an example, earthworks activities use water mainly for hosing down work areas to reduce the amount of dust produced. In Africa, water is often pumped using electric generators installed near villages so that communities can have easy access to water. The water itself undergoes no transformation whatsoever. It either evaporates or runs back to the water table without being polluted. For foundations operations (tunnels, metro lines), the underground water is pumped before returning into the water table, unpolluted, after analysis and treatment if needed. These examples show the complexity of measuring consumption given the diversity of VINCI's businesses.

2.3.1.2 Raw materials consumption

In the Concessions business, most raw materials consumption is monitored and consolidated. In 2018, 1,629,378 tonnes of asphalt mix, including nearly 743,100 tonnes of recycled mix, were used for motorway maintenance. Due to harsher weather conditions in the first quarter of 2018, 42,032 tonnes of de-icing salt were used (against 24,033 tonnes in 2017) and enhanced preventive measures were implemented to guarantee user safety.

In the Contracting business, raw materials purchasing is decentralised, with purchases generally not consolidated at Group level. Efforts to manage raw materials consumption include purchasing recycled materials that have equivalent performance to new materials, recycling waste produced by business activities (see paragraph 2.3.2) and sourcing local products. For its property development businesses, VINCI Immobilier is developing a sustainable product library for choosing raw materials and materials for finishing work on residential buildings based on a set of social and environmental criteria.

There is also a focus on designing products that use fewer raw materials. VINCI Construction France implements this approach in developing eco-designed housing, offices, student accommodation and other projects. The Pulse project, to be delivered in early 2019 in Saint Denis outside Paris and built by Bateg (subsidiary of VINCI Construction France), will feature 20,000 sq. metres of false flooring made by reusing deconstruction materials. The project aims to achieve the certifications HQE® Passeport Excellent, BREEAM® Excellent, BBCA® Excellence and E+C- (for energy positive and low-carbon buildings).

Arbonis, the subsidiary of VINCI Construction France specialised in timber design and construction, generated revenue of €46 million in 2018. Over the year, Arbonis developed its expertise in renovation, with its wood-frame wall product featuring an external thermal insulation system. The company also strengthened its positioning in 3D modular construction (Arbo 3D) and the creation of multi-storey buildings in wood. A prime example is The People Hostel, a youth hostel located at Les Deux Alpes, a ski resort in eastern France, where the wooden structure was renovated, raised and extended. The work of Arbonis fully contributes to the Group's efforts in advancing towards the ecological and energy transition.

Eurovia's Granulat+ programme is its sector's first experiment in industrial ecology and has been recognised by France's Ministry of the Environment, Energy and the Sea as a leading initiative in the circular economy since 2013. For its first phase adopted at quarries in the Mediterranean area, the aim of the programme is to recover all the resources needed to produce aggregates used in construction. It is based on the combined effort of quarry managers, local waste producers and raw materials users. In addition to its direct benefits, the programme provides a way for regional actors to integrate environmental issues into their processes. Since 2015, Granulat+ has been rolled out and adapted in the Greater Paris region and Normandy. Further strengthening its relations with its stakeholders, Eurovia continued its involvement with the French Circular Economy Institute in 2018. Eurovia continues to develop its expertise in reclaimed asphalt pavement.

VINCI set up focus groups to advance its study of the circular economy. More specifically, it aimed to find new ways of integrating reused or recycled materials and recycling waste produced by construction activities in line with the French law on the energy transition for green growth. The next step is to develop Group-wide tools or initiatives that can facilitate the operational implementation of the circular economy throughout the project life cycle. At the La Samaritaine refurbishment worksite in Paris, all of the wooden steps from the building's historical staircase were reused, and a half tonne of soundproof wooden false floor tiles were reused for a concert venue less than a kilometre away from the worksite.

To gain a better understanding of the environmental impact of raw materials, VINCI collaborates with professional groups to prepare life cycle inventories (LCI) of its materials and works with France's energy, environment and transport observatory (OEET) and the French underground tunnel association (Aftes). Recybéton, France's nationwide collaborative research project to promote concrete recycling, published its findings in November 2018. In parallel, advances have been made to develop low-carbon concrete, which significantly reduces the CO₂ emissions produced by the concrete industry.

2.3.1.3 Energy consumption

VINCI actively participates in the debates launched by French and European government authorities on the energy transition, in particular on retrofitting buildings and developing eco-mobility.

To meet stricter requirements while remaining competitive, VINCI is developing new systems for both housing and offices, drawing on the expertise of VINCI Construction to minimise energy losses through the building shell and on that of VINCI Energies to install innovative equipment such as all-air heating using the Green Floor process. VINCI Construction France is taking an active role in co-developing the regulations set to pass in 2020 that will take into account all of a building's impacts throughout its life cycle. Two calculations will have to be made – energy costs and costs to reduce greenhouse gas emissions – for each building use to assess the project's environmental impact more accurately. Every player involved over a building's complete life cycle – from material manufacturing to construction, operation and deconstruction – will have to determine the best possible balance between energy performance and greenhouse gas emissions reduction. That is the idea behind the E+C- label (for Énergie Positive & Réduction Carbone) to promote energy positive, low-carbon buildings. VINCI Construction France is taking part in this new certification through test projects such as the La Canopée residence in Nantes in western France and the Origine & Nouvelle Vague combined-use urban complex in Nanterre near Paris.

VINCI Energies' activities in facilities management are using their expertise in areas such as energy diagnostics and audits, monitoring and optimisation work to develop energy efficiency contract solutions for their clients through their dedicated structure, Hub Energy, and an energy monitoring tool.

Within the framework of the Chair in the Eco-design of Buildings and Infrastructure, Mines ParisTech has developed an energy and environmental performance simulation tool, NovaEquer. A spin-off under the Chair, the startup Kocliko has developed a platform that uses dynamic energy simulation and artificial intelligence to assess a building's energy consumption more accurately based on user behaviour and weather averages. The system then measures and checks performance once the building is completed or renovated.

Total energy consumption (including natural gas and electricity), with change

	2018			2017		Change
	Natural gas (MWh)	Propane / LPG (MWh)	Electricity (MWh)	Total energy (MWh) ^(*)		
Concessions	55,408	3,629	392,582	600,259	544,288	+10.3%
VINCI Autoroutes	5,512	1,824	126,640	226,072	223,871	+1.0%
VINCI Airports	49,303	1,733	233,702	330,379	297,875	+10.9%
Other concessions	592	72	32,241	43,807	22,542	+94.3%
Contracting	1,045,369	7,324	848,043	7,677,091	7,533,703	+1.9%
VINCI Energies	55,926	738	97,464	935,264	886,693	+5.5%
Eurovia	956,995	358	352,656	3,930,776	3,849,334	+2.1%
VINCI Construction	32,448	6,228	397,923	2,811,051	2,797,676	+0.5%
VINCI Immobilier	4	-	1,919	4,692	4,251	+10.4%
Total	1,100,781	10,953	1,242,544 <input checked="" type="checkbox"/>	8,282,042 <input checked="" type="checkbox"/>	8,082,242 <input checked="" type="checkbox"/>	+2.5%

^(*) The total includes consumption of fuel, natural gas, propane, electricity, heavy fuel oil, coal and used oils.

Data checked to a level of reasonable assurance.

Group companies pay close attention to their energy consumption, the absolute value of which had risen 2.5% at the end of 2018 compared with 2017. In relative terms, Group energy intensity totalled 190 MWh per million euros of revenue for the reporting period, compared with 201 MWh in 2017 and 206 MWh in 2016. This decrease rewards the efforts made by Group companies. Improvements to reporting methods since 2016 have made it possible to consolidate the monitoring of new energy sources, such as propane, and for Eurovia to extend its reporting to encompass liquefied petroleum gas (LPG).

Due to the industrial nature of its business, Eurovia accounts for a large proportion of total energy consumption. It was the first Group business line to set up an ambitious energy and CO₂ reduction plan, including improvements to the energy efficiency of coating plants, quarry equipment and worksite machinery. Energy consumption is monitored at different operational levels (delegation, region, etc.) using a dashboard and six priority actions based on the energy life cycle. The Eurovia business line also develops products and services that reduce energy consumption, such as the Tempéra® warm mix process that enables energy savings of between 20% and 40%.

One of the four main goals of the environmental policy developed by VINCI Airports in 2015 is to reduce energy intensity by 20% between 2013 and 2020. To meet this target, VINCI Airports is boosting the energy efficiency measures taken at all its airports in operation. In 2018, measures taken under this environmental policy included the launch of an extensive relamping campaign to switch to LED lighting at the airports in Rennes, Dinard, Chambéry, Grenoble, Toulon and Clermont Ferrand, and the installation of more than 3 MWp (nominal power) in solar PV systems for self-consumption in the Dominican Republic. The policy includes an action plan that lets each airport define its own performance targets in line with its activities. Energy consumption and associated greenhouse gas emissions are one of the seven environmental performance criteria.

Fuel consumption, with change

(in thousands of litres)	2018	2018	2018	2017	Change
	Diesel ^(*)	Petrol	Total		
Concessions	14,059.0	233.3	14,292.3	13,352.2	+7.0%
VINCI Autoroutes	8,847.6	7.8	8,855.4	8,663.7	+2.2%
VINCI Airports	4,212.2	176.4	4,388.6	4,150.1	+5.7%
Other concessions	999.3	49.0	1,048.3	538.4	+94.7%
Contracting	492,239.1	16,975.3	509,214.5	503,908.1	+1.1%
VINCI Energies	71,120.5	3,988.8	75,109.2	71,318.0	+5.3%
Eurovia	198,311.8	8,479.7	206,791.6	195,066.7	+6.0%
VINCI Construction	222,806.8	4,506.8	227,313.7	237,523.4	-4.3%
VINCI Immobilier	266.3	-	266.3	231.2	+15.2%
Total	506,564.4	17,208.6	523,773.0	517,491.5	+1.2%

^(*) Since 2011, the "diesel" indicator has taken into account diesel and heating oil.

The 1.2% increase in fuel consumption in 2018 is mainly due to the inclusion of new companies in the reporting scope. Group companies continue their efforts to reduce consumption.

VINCI Autoroutes provides its customers with tools and services to help them reduce their fuel consumption, such as no-stop electronic toll lanes and carpool parking facilities located near toll plazas. In autumn 2018, 31 car parks providing over 2,545 parking spaces were reserved for carpooling, up from 28 car parks with 2,241 spaces in 2017.

VINCI Highways is also taking steps to reduce the energy consumption of its concessions. In 2018, a programme was implemented to upgrade the lighting in the Patras bypass tunnels and Kakia Skala tunnels in Greece. The programme is expected to reduce the electricity consumption of these tunnels by 60%, thereby lowering the resulting greenhouse gas emissions.

2.3.1.4 Use of renewable energy

For a number of years, VINCI companies have been substantially increasing their purchases of electricity generated from renewable energy sources. In 2018, these purchases, at both fixed sites and worksites, totalled 98,338 MWh compared with 57,793 MWh in 2017.

VINCI Energies' business units have expertise in and are expanding their activities in the design, supply, installation and connection to renewable energy power plants. Omexom, the VINCI Energies brand specialised in electrical power generation, transmission, transformation and distribution, takes part in developing renewable energy, contributing to the installation of more than 20% of the wind power in France and 30% of that in Morocco. In 2018, Omexom continued to expand its international operations, for example in Indonesia where it built the country's first wind farm, with a capacity of 70 MW. The company is also involved in tackling new challenges in the development of renewable energy, such as stabilising the power grid. Omexom was selected to build the synchronous condenser at the Kiamal solar farm in the state of Victoria in south-eastern Australia. This unit will help regulate the voltage at the connection point of the 200 MW facility with the grid. VINCI Construction is developing technical solutions to industrialise construction and optimise the installation of onshore and offshore wind farms.

VINCI Autoroutes has 3,464 renewable energy installations generating solar, thermal and wind power (excluding heat pumps).

Eurovia also increasingly uses renewable energy. The largest photovoltaic installation in Belgium's Walloon region opened at Carrières Unies de Porphyre in June 2018. The facility will cover 40% of the quarries' annual consumption by using 70% of the solar power generated.

2.3.1.5 Land use

Combating the loss of natural and agricultural land and maintaining an attractive habitat for the species living there are factors taken into consideration before project implementation and throughout the operating life of infrastructure. More detailed study goes into projects with a significant or long-term impact on the land, such as linear infrastructure or Eurovia's quarries. Some Group companies specialise in ecological engineering, including Eurovia's subsidiaries Cognac TP and Sethy, and Equo Vivo, the new brand developed by VINCI Construction Terrassement. They take measures to restore the ecological balance of land and environments affected by construction works, such as planting native species, combating invasive non-native species, and restoring wetlands and waterways with diminished ecological functions. The operations of extraction companies such as Eurovia are likely to have a lasting impact on the land's biological balance. These long-term changes to the biological balance also offer the opportunity to create new environments and bring back new, even protected, species. The initial diagnostics are now improved by taking inventories while infrastructure is in operation to assess the effectiveness of measures that are implemented at sites to protect species. Biodiversity is even more carefully taken into account during the rehabilitation of quarries, a phase essential for remediating the site so that it regains its original ecological function.

Extract, a subsidiary of VINCI Construction France, is the French leader in the treatment of sediment. Its polluted site and soil remediation activities are primarily carried out at its recovery facility near Paris, which can treat up to about 230,000 tonnes of sediment a year. Its operations align perfectly with the circular economy and improved use of land.

In 2018, VINCI extended its partnership with the Institute for Sustainable Development and International Relations (IDDRI). Research focused on the loss of natural land, more specifically through the construction of business and retail parks. Based on this work, a discussion group on the issue will be formed and led by IDDRI in 2019.

2.3.2 Waste prevention and management

VINCI's general policy is based on a circular economy model and focuses on three aims: producing less waste at the source; waste sorting and traceability; and recovering waste to use as a resource. Waste management is important to both Contracting entities – which deal mainly with construction site waste – and Concessions entities, which have to dispose of their customers' waste at airports, motorways, etc. The Group's subsidiaries implement waste management plans at their worksites in accordance with local waste management procedures and systems. VINCI makes an annual count of the amounts of waste it generates and recovers.

Once sorted, the waste from operations produced by VINCI Autoroutes is delivered to external recovery and treatment facilities; 79% of VINCI Autoroutes waste was recovered in 2018 versus 68.5% in 2017. As for waste produced by users, all of the rest areas along VINCI Autoroutes motorways are equipped with sorting bins. The staff at VINCI Autoroutes emphasise awareness and guidance campaigns to fight littering and encourage users to sort their waste, especially through summertime activities and events along motorways. In France, the Revalo programme was instituted by VINCI Construction France and is supported by Ademe and France's Ministry for the Ecological and Inclusive Transition. This programme increases materials recovery while reducing the carbon impact of worksites by optimising waste sorting. The Optidéchets platform is used to improve waste management and prevention by applying key indicators (sorting rates, cost, average volume, density, etc.) throughout an organisation and provides each worksite with a regulatory registry and report for its customers. This solution has been implemented at 200 worksites per year since 2016. The waste recovery rate is 80%, surpassing the French and European regulatory requirements of 70%. In 2018, VINCI Construction France continued to work with Circolab, an organisation that promotes the circular economy, focusing on the reuse of construction materials.

In June 2018, stadium operators Consortium Stade de France, MMArena in Le Mans, Allianz Riviera in Nice and Matmut Atlantique in Bordeaux signed the Eco-responsibility Charter of Sports Facility Operators, co-written with the Ministry of Sports and WWF. The charter is comprised of 15 commitments for 2020, covering diverse issues such as responsible food management, sustainable mobility, renewable energy and access for people with disabilities. Targets in the area of waste management include a 15% reduction in waste by 2020; the reuse, recycling or recovery of 40% of waste; and biowaste treatment of 60% of food waste.

Hazardous and non-hazardous waste

(in tonnes)	2018					2017				
	VINCI Autoroutess	VINCI Airports	Other concessions	VINCI Energies	VINCI Construction ^(*)	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	VINCI Construction ^(**)
Non-hazardous waste (customers + operations)	22,885	30,630	19,702	452,995	1,201,212	18,777	12,559	2,464	397,996	567,145
Hazardous waste (customers + operations)	897	748	21	4,514	30,250	784	1,355	153	4,019	16,483

^(*) Scope includes VINCI Construction UK and 42% of the revenue of VINCI Construction Grands Projets.

^(**) Scope includes VINCI Construction UK and 50% of the revenue of VINCI Construction Grands Projets.

Waste is monitored at all Concessions businesses. In the Contracting business, the increase at VINCI Construction in 2018 is due to the types of project undertaken. A number of large-scale infrastructure projects, such as the Grand Paris programme, require extensive excavation works. The soil excavated may be polluted, which results in a significant amount of inert and hazardous waste.

Recycling has been a priority at Eurovia for some 20 years and has garnered increasing interest from customers in the development of innovative products and processes that use smaller amounts of natural resources and energy. Eurovia now has 130 platforms that recycle most of the waste produced by worksites. In 2018 the company forged ahead in its transition to promote the circular economy and recycling in its business. Eurovia has set a target to increase the use of reclaimed asphalt pavement in its total asphalt mix production to over 20%. In France in 2018, the percentage stood at 14.8%. After over two years of research and development, the world's first "fully recycled road" opened in 2018. This achievement results from the collaboration between Eurovia and VINCI Autoroutes on a 1 km section of the A10 motorway between Pons and Saint Aubin in south-west France. The research project won the "Route du futur" call for projects launched by Ademe as part of the French government's "Investissements d'Avenir" (Investment for the future) programme. To build the road, an innovative mobile continuous asphalt plant was designed in partnership with Marini-Ermont (Fayat group), which makes it possible to recycle up to 100% of products from pavement milling operations. The plant's mobility also contributes to reducing the carbon footprint of the construction work, cutting greenhouse gas emissions by 50%. Other projects integrating recycled materials are already under way. For instance, in Alberta, western Canada, a project to upgrade 15 intersections involves milling 440,000 sq. metres of asphalt, of which 90,000 tonnes of recycled mix will be used out of the total 190,000 tonnes required.

Waste recycling and recovery at Eurovia, with change

	2018			2017		
	World	2018/2017 change	France	2018/2017 change	World	France
Percentage of asphalt mix made with reclaimed asphalt pavement	16.1	+1%	14.8	+9.6%	16.0	13.5
Production of recycled material ^(*) (in millions of tonnes)	10.6	-89%	6.9	-100.0%	5.6	4.6
Total recycled material as a percentage of total aggregate production	10.4	-60%	11.2	-100.0%	6.5	7.9

^(*) "Recycled material" includes total production of recycled aggregates and reclaimed asphalt pavement in Eurovia production facilities.

The law introduced by the French government to combat food waste does not have a significant impact on VINCI's activities, as the Group does not directly manage any catering enterprises. However, Group companies take action when possible, and its concession companies that are in direct contact with customers and users put measures in place. The Stade de France for example set up a partnership with Le Chainon Manquant. The day after an event at the Stade de France, this non-profit organisation collects sandwiches and desserts that have been maintained in the cold chain to redistribute them. In 2018, 2,325 tonnes of unsold food, the equivalent of 4,650 meals, were collected and redistributed.

2.3.3 Measures to prevent, reduce and offset pollution

2.3.3.1 Air pollution

VINCI companies focus on issues concerning both indoor and outdoor air quality. The VINCI business lines most concerned with the problem of atmospheric emissions are the Concessions business and the Eurovia and VINCI Construction business lines. In Concessions, especially VINCI Airports and VINCI Autoroutes, most air emissions are generated by users of cars, trucks, aircraft, etc. To reduce traffic congestion and combat air pollution, VINCI Autoroutes has introduced speed limitation measures and no-stop electronic toll lanes, and promotes shared mobility.

Group companies also encourage reducing emissions from their own vehicles generated during their business activities. For instance, Spiecapag (Entrepose) has introduced an in-vehicle monitoring system (IVMS). Along with improving safety, the IVMS effectively manages fuel use for the project, for an average reduction in fuel consumption of 15%.

Nine VINCI facilities are concerned by phase III of France's National Allocation Plan under the EU emissions trading system (see page 204). Eurovia's CIFIC plant at Fos sur Mer near Marseille accounts for most of these emissions, which totalled 138,894 tonnes of CO₂ in 2018.

To treat road surfaces, Eurovia has developed NOxer®, an innovative air pollution treatment process that removes nitrogen oxides. The process removes between 15% and 25% of total air pollution and eliminates up to 75% of nitrogen oxides for local residents. The solution has been adapted and combined with noise barriers to abate noise pollution as well. VINCI Construction France and the facilities management business units of VINCI Energies are developing new techniques that guarantee air quality in the buildings they build and operate. VINCI Construction France is moving forward with its indoor air quality management plan that integrates this factor into each project from the briefing phase until after handover.

VINCI companies also develop solutions to measure and control urban air quality for government organisations. For example, the VINCI Energies company Citeos, with its partner Clarity, came up with a novel micro-sensor system to monitor air quality. The project won the City of Paris Air Quality experimentation programme, a bid to encourage new, innovative solutions. Installed on public lighting poles in sensitive areas, the micro-sensors are designed to work with Airparif stations, which monitor air quality in the Paris region. The innovation features a dashboard showing real-time data on a hypervisor.

2.3.3.2 Water and soil pollution

Substances released into the environment due to VINCI business activities are carefully monitored by Group companies and project stakeholders. Government services, local residents, civil society, customers and investors develop advanced tools to monitor the impact of Group operations and check compliance with anti-pollution regulations on the ground. Discharges are gauged in preliminary studies before projects are implemented, and are measured throughout the project. The concentration of suspended solids in drainage water is checked as the water flows out of the settling basins at worksites, quarries, and airport and motorway operating sites, before these solids enter nearby watercourses.

A large number of prevention measures are taken to limit the pollution risks related to the Group's business activities. To prevent accidental oil and chemical leaks into soil or water, machine operators are provided with containment trays that they can place under fuel tanks when working in high-risk natural environments.

Emergency response procedures have been established if pollution is detected at worksites or operating sites. For example, machine operators working at most sites are provided with anti-pollution kits to respond if a machine pollutes the natural environment. For cases of major pollution, companies are required to rehabilitate the site and environment affected.

2.3.3.3 Noise and light pollution

All VINCI projects are subject to a preliminary noise study to limit the pollution generated by urban construction sites, motorway traffic and so forth. VINCI companies systematically offer technical solutions during the construction phase, including changing a motorway route, erecting noise barriers and embankments, and using special low-noise road surfacing materials such as Eurovia's Viaphone®. This quiet, fine-graded asphalt concrete substantially reduces road traffic noise, enhancing acoustic comfort.

For its project to extend Paris metro Line 12, VINCI Construction set up a "truck-free" worksite, using two-way underground and waterway transport to reduce noise pollution for local residents.

VINCI Airports takes measures to reduce noise pollution as much as possible for local residents at all of its airports in operation.

These measures include a system that continuously monitors noise and flight paths, noise insulation for nearby housing, and studies and action plans to reduce noise.

Noise levels on motorways in France are measured regularly to enable VINCI's motorway concession companies to identify and reduce noise black spots. Affected homes may then be protected using noise insulation in their facades, or noise barriers or embankments planted with shrubs or trees. In 2018, 2,545 new homes were protected from noise on VINCI Autoroutes motorways, making a total of 7,753 since 2010.

Opaque screens can be installed along motorways and adapted lighting systems (light directed only towards the ground) set up to limit light pollution caused by the operation of infrastructure. Citeos (VINCI Energies) has incorporated measures into its contracts for operating public lighting networks. These measures include efficient anti-light pollution equipment, smart lighting systems, automatic shut-down of certain light sources, and respect of "dark corridors" provided for in lighting plans to reduce the impact on biodiversity. On the worksite of the new coastal highway on Reunion Island, lighting systems were installed to protect marine birdlife. Lights are a yellow-orange colour and directed towards the ground to avoid attracting and disorienting birds, limiting the risk of them being washed ashore. The lights are turned off during periods when this risk is high, in line with recommendations from local naturalists.

2.4 Combating climate change

In 2007, VINCI initiated a proactive programme to reduce and control greenhouse gas (GHG) emissions and to anticipate and monitor legislation worldwide. The impact of current carbon emissions regulations on VINCI's activities is mainly indirect. VINCI has nine facilities that are subject to phase III of the European emissions trading scheme's National Allocation Plan (see page 204) and must comply with the Carbon Reduction Commitment in the United Kingdom. VINCI Autoroutes continued to work on the CO₂ impact of its business activities and supports the actions of the Shift Project. New regulations are opening up opportunities for VINCI, whose companies now offer their customers climate-adapted solutions that enable them to reduce their own GHG emissions. VINCI has been committed to green growth since 2012, with a target to reduce GHG emissions 30% by 2020. This target covers the Group's like-for-like Scope 1 and 2 CO₂ emissions and uses 2009 as its base year (the first year when coverage exceeded 90%). The Group is also taking initiatives to reduce its indirect energy emissions. The Concessions businesses monitor their customers' emissions, which qualify as Scope 3 emissions. A new methodological tool was developed in 2018 to estimate indirect emissions resulting from VINCI's construction businesses, covering materials used, the energy performance of buildings completed and sold, and the energy performance of buildings operated. Monitoring these indirect emissions from Group operations not only measures them, but enables their source to be identified and the most effective ways of reducing them to be found.

2.4.1 Greenhouse gas emissions

The methodology used to determine the greenhouse gas (GHG) emissions of VINCI's businesses is based on the Group's environmental reporting data and measures ISO 14064 Scope 1 and 2 emissions. Scope 1 includes direct emissions from the use of fossil fuels (fixed sites, worksites and company vehicles), as well as non-energy emissions. Scope 2 includes indirect emissions produced to make energy (mainly electricity) purchased and used at fixed sites and for projects. VINCI's CO₂ emissions in 2018 amounted to about 2.7 million tonnes based on the new methodology and updated emission factors (2.3 million tonnes of CO₂ equivalent based on the emission factors applied up to 2015). The Group's emissions are calculated using factors included in the Base Carbone® database administered by Ademe. The most recent factors used by VINCI date from 2015.

Greenhouse gas emissions (Scopes 1 and 2), with change

	Actual values (emissions updated based on new emission factors)	Monitoring of the reduction target (applying previous emission factors)		2018/2017 change
	2018	2018	2017	
<i>(in tonnes of CO₂ equivalent)</i>				
Concessions	176,737	157,351	147,349	+6.8%
VINCI Autoroutes	40,176	32,709	32,133	+1.8%
VINCI Airports	128,401	117,875	110,780	+6.4%
Other concessions	8,160	6,767	4,436	+52.6%
Contracting	2,492,990	2,151,362	2,169,363	-0.8%
VINCI Energies	275,432	236,391	221,791	+6.6%
Eurovia	1,261,443	1,096,178	1,146,892	-4.4%
VINCI Construction	956,116	818,794	800,680	+2.3%
VINCI Immobilier and holding cos.	1,002	831	735	+13.1%
Total	2,670,730 <input checked="" type="checkbox"/>	2,309,546 <input checked="" type="checkbox"/>	2,317,447 <input checked="" type="checkbox"/>	-0.3%
Carbon intensity (tonnes of CO₂ equivalent per million euros of revenue)	-	53.1	57.6	-7.9%

Data extrapolated to cover 100% of VINCI's revenue – excluding acquisitions in 2018.

Data checked to a level of reasonable assurance.

The Group's direct greenhouse gas emissions (Scope 1 and 2) fell slightly compared with 2017 using the methodology that applies the same emission factors from one year to the next to monitor the reduction target. This decrease in emissions, a factor in climate change, results from the reduction in energy consumption in the Contracting business, especially at Eurovia. Carbon intensity in tonnes of CO₂ equivalent per million euros of revenue also fell in 2018 to 53.1 tCO₂eq. In 2009, carbon intensity stood at 71 tCO₂eq, with the target of reaching 50 tCO₂eq per million euros of revenue. Since that year, the figure has decreased 25%. These figures have fallen due to the many measures taken over the past few years to control and reduce carbon intensity.

To broaden its range of low-CO₂ solutions, VINCI continues to develop specific tools and carry out studies to better quantify and control GHG emissions resulting from its business (ISO Scope 1, 2 and 3). In 2016, the Group began a study to create a methodology for measuring the Scope 3 emissions of its buildings business in all countries where it operates. The work carried out was applied to better quantifying Scope 3, especially through the use of a purpose-designed reporting tool for VINCI's construction business. VINCI's long-term plan is to come up with new methodologies for assessing Scope 3 that account for the diversity of the Group's businesses. In doing so, the Group will not only meet the requirements of Article 173 of the French law on the energy transition for green growth but will also gain more insight into its carbon impact throughout the value chain and contribute to the objectives of the Paris Agreement signed in 2015. By working to create the criteria of the French experimental label Énergie Positive & Réduction Carbone, or E+C- (for energy positive and low carbon) with other organisations from the construction industry, VINCI combines energy performance targets with carbon footprint reduction.

CO₂ emissions (Scope 1, 2 and 3) of VINCI Concessions companies, customers and end users

<i>(in tonnes of CO₂ equivalent)</i>	VINCI Autoroutes		VINCI Airports ^(*)	
	2018	2017	ACA 2018	ACA 2017
ISO Scope 1 and 2 emissions	40,176 ^(**) <input checked="" type="checkbox"/>	39,485 ^(**) <input checked="" type="checkbox"/>	256,481	45,328
User/third-party emissions (Scope 3)	13,906,030 <input checked="" type="checkbox"/>	13,865,424 <input checked="" type="checkbox"/>	1,008,782	764,182 ^(**)

^(*) Scope includes ANA airports and Lyon-Saint Exupéry Airport, year Y-1 emissions taken into account in the Airport Carbon Accreditation (ACA) of year Y.

^(**) Scope includes only ANA airports, 2016 emissions taken into account in the Airport Carbon Accreditation of year Y.

^(***) Emissions based on the new methodology using Ademe's 2015 emission factors.

Data checked to a level of reasonable assurance.

Since 2014, the GHG emissions produced by VINCI Autoroutes companies have been verified by a third party with a reasonable level of assurance, providing the highest level of transparency a company can achieve. The no-stop 30 km/hour electronic toll lanes lowered CO₂ emissions by 78,697 tonnes over the year (71,390 tonnes in 2017), or 360,886 tonnes since they opened in 2010. VINCI Airports operates 35 of the 251 airports with Airport Carbon Accreditation (ACA) certification in the world, including 13 Level 2 (Reduction) airports (all 10 ANA Group airports in Portugal, along with the airports in Rennes, Dinard and Kobe). The Kansai and Osaka Itami airports achieved Level 3, which reflects stakeholder engagement in carbon footprint reduction, and the calculation and verification of their carbon footprint for the three scopes. Lyon-Saint Exupéry Airport renewed its Level 3+ accreditation, carbon neutrality, which is the highest certification level in the ACA programme. In 2018, VINCI Airports calculated virtually all emissions from the aircraft LTO (Landing and Takeoff) cycle, which accounts for around 60% of Scope 3 emissions. LTO emissions totalled 236,246 tonnes of CO₂ equivalent for the year (emissions calculated over the same period as for environmental reporting).

Investors have responded positively to the measurement of GHG emissions and actions taken to reduce them. VINCI was again included in the Carbon Disclosure Leadership Index (CDLI) France in 2018, attaining level A- with its response to the Carbon Disclosure Project (level B in 2017). This project, which is conducted on behalf of 658 investors representing \$87 trillion in assets under management, assesses how large companies are responding to climate change.

2.4.2 Adapting to climate change

VINCI has adopted France's plan for adapting to climate change and takes a forward-looking approach. The Group plans in advance for any necessary changes to cities and buildings, particularly through eco-design projects in which studies span the structure's whole life cycle. Similarly, VINCI companies use scientific scenarios predicting a 50 cm rise in sea levels by 2050, according to the Intergovernmental Panel on Climate Change (IPCC). Although they cannot take action regarding political strategy on receding coastlines, they are developing expertise in technical improvements, notably to strengthen sea walls. VINCI plays a central role in making new and existing structures more resistant to extreme weather events, ensuring long-term durability and providing innovative construction solutions. It carries out extensive research, both internally and through its scientific partnerships, in areas such as adapting neighbourhoods to heat waves, handling urban heat spots and flood prevention. Launched as part of the Leonard intrapreneurial programme, the startup Resalliance is a design office that provides consulting, modelling and business strategy services to adapt projects and regions to climate change.

In 2018, following an internal study conducted to assess the impact of extreme weather events on the Group's business, a campaign was implemented to raise the awareness of VINCI's operational managers to the issue. The Group's goal is to instil a true culture of adaptation to extreme weather events caused by climate change. Due to their growing frequency, these events are managed at each stage of a project. VINCI companies are often called on following extreme weather events to restore the normal operation of transport and energy infrastructure.

2.4.3 Reduction targets and resources implemented

Group companies have introduced ambitious policies to achieve the target of reducing greenhouse gas (GHG) emissions 30% by 2020. Since 2016 Eurovia has developed and deployed a new environment and green growth strategy, based on achieving high energy efficiency for each business segment in order to meet the Group's emissions reduction target for 2020. A number of solutions have also been developed to reduce emissions, such as the plant-based fuel Dertal G. The fuel is derived by distilling pine resin and can replace the fuel oil used at production facilities to dry asphalt mixes. The use of Dertal G is also in line with circular economy principles. After one year in use and 150,000 tonnes of asphalt mix produced, no heavy metal or polycyclic aromatic hydrocarbons (PAHs) were detected in the air.

Other levers for reducing GHG emissions are mainly to be found in how structures are used by customers and end users: operations account for over 50% of lifetime emissions for a rail line, 90% for a building and over 95% for a motorway. Reducing the CO₂ emissions of VINCI structures is part of an eco-design approach that takes into account the construction, operation and end-of-life phases to compare and select the most appropriate technologies during the design phase. The approach uses life cycle analysis (LCA) tools that measure CO₂ emissions and other indicators such as water consumption, depletion of natural resources and impacts on human health. These tools allow the Group to ensure that CO₂ reductions do not generate other impacts at any point in the life cycle of its structures. LCA tools, primarily developed within the framework of the Chair in the Eco-design of Buildings and Infrastructure, are used in numerous subsidiaries. The CO₂NCERNED methodology developed by VINCI to measure a project's carbon footprint is deployed across all Group business lines to assess construction options at VINCI Construction, the effectiveness of solutions at VINCI Energies and motorway routes in the Concessions business, and to optimise the carbon footprint of rail infrastructure.

VINCI Energies companies have developed significant expertise in supporting local government authorities with the implementation of energy performance contracts for cities, through actions such as optimising public lighting, monitoring building energy consumption and installing smart grids.

VINCI is an active member of national and international working groups within its industry (Association Bilan Carbone and Encord) that are defining standards for quantifying Scope 3 emissions. VINCI Construction shows building occupants how they can consume less energy through its OXYGEN® solution, an eco-commitment that guarantees performance and assistance for building users. To date, 80 design-build and property development projects have been awarded the label. VINCI Construction France and the facilities management business units of VINCI Energies continued to work together in 2018 to develop the Oxygen® energy performance guarantee for the in-use phase of buildings, focusing on indoor air quality.

In 2018, VINCI Construction France took part in the new Énergie Positive & Réduction Carbone, or E+C-, programme, to prepare for the new environmental regulations that will go into effect in 2020. Test projects led as part of this experiment include the Origine & Nouvelle Vague combined-use urban complex in Nanterre near Paris, the housing worksite on Rue Obert in Wambrechies in northern France, the La Canopée residence in Nantes to the west, and the Bastide Bondoux office buildings in Chapanost in the east of the country. Energy consumption and carbon impact are tracked for each building use. The new calculation covers the entire life cycle of a building, from material manufacturing through to deconstruction, over a theoretical life span of 50 years.

2.5 Biodiversity conservation

2.5.1 General biodiversity policy

The Biodiversity Task Force, which implements the Group's biodiversity policy, brings together about 40 ecology experts and environment managers from the Group's different activities. It is primarily responsible for monitoring the regulatory environment, developing scientific expertise, analysing risks, promoting initiatives and sharing best practices. The task force encourages organisations, engineering and design departments, government authority representatives and companies to transmit information on what they do and the tools they use. The Group has developed a network of more than 500 biodiversity coordinators, who come together once a year in a day-long meeting to discuss technical issues. In 2018, some 100 people attended the meeting, which focused on plant-based engineering (using local plants, combating invasive non-native species and biomimetics).

In the six years since the Biodiversity Task Force was formed, a number of Group-wide initiatives have been launched at the Group's business lines. In 2018, the Group developed a location-based system specifically designed to address biodiversity conservation issues. The system will eventually hold data from inventories and monitoring surveys conducted near Group projects and infrastructure.

2.5.2 Measures to promote biodiversity

Several Group companies with long-cycle business activities that directly impact natural environments – notably those involved in the concession-construction of transport infrastructure (motorways, airports), earthworks and quarries – have been deploying a biodiversity action plan for many years.

Measures to avoid and reduce impacts on natural environments or, as last choice, to offset them are developed and applied in partnership with the most appropriate stakeholders, depending on the project, location, species and ecosystems. Across all VINCI companies, more than 430 partnership agreements on biodiversity issues with non-profit organisations, research centres and engineering and design firms were signed or in effect in 2018.

For example, a whole region-wide network of partners – government services, environmental organisations, scientific partners, chambers of agriculture, hunting and fishing federations, and so on – is involved in the environmental management of the South Europe Atlantic high-speed rail line. They bring together the ecological and local expertise necessary to make sure environmental measures are implemented properly along the entire line.

The target to submit 3,500 hectares of compensatory mitigation land for review by government services was surpassed (3,548 hectares) in September 2018. Fifty-two environmental restoration projects were launched in 2018 as part of compensatory mitigation measures. The effectiveness of environmental measures, environmental transparency structures and compensatory mitigation measures can only be judged over the long term. As such, the LISEA environmental observatory monitors all environmental measures throughout the duration of the concession and all regions crossed by the South Europe Atlantic high-speed rail line. This provides an overarching perspective of the steps taken to support the environment and address the impact of the infrastructure. Forty-five ecological monitoring tools were launched in 2018.

To maintain a continuous hands-on approach, the Group gave special focus to deploying training and awareness modules on biodiversity issues in 2018. Eurovia has integrated specific modules on biodiversity into its training programmes for young quarry and technical engineers and its environmental regulations training for operational staff. At certain worksites, “15-minute biodiversity sessions” were introduced to make sure that employees understand and properly take into account the signage used concerning biodiversity. As part of its Attitude Environnement label, VINCI Construction France continued rolling out its training modules on factoring biodiversity into projects, especially in urban settings. A technical manual on green roofs is also provided for company employees. VINCI Construction Grands Projets devotes a large portion of its environmental training programme to biodiversity conservation.

Operators of linear infrastructure concessions are primarily concerned with limiting the fragmentation of natural habitats during construction work, focusing their efforts on the ecological transparency of their infrastructure, the reversibility of barriers and the restoration of ecological connectivity. This includes installing wildlife crossings, making improvements to hydraulic structures, restoring and enhancing sites of ecological interest, redeveloping slopes, sustainable roadside grass mowing, and so on. Several wildlife crossings opened in 2018 along VINCI Autoroutes motorways A89, A52 and A8. VINCI Autoroutes also worked to keep users informed about biodiversity conservation at the environmental awareness spaces it sets up at rest areas along summer routes, and invited children from nearby schools to visit wildlife crossing construction sites.

VINCI Autoroutes has also taken steps to reduce the impact of the operation phase of motorways on natural environments. For example, the considerable efforts engaged to limit the use of phytosanitary products have led to a 64% decrease in their use since 2008.

Wildlife crossings and fenced sections on the motorways of VINCI Autoroutes companies

	2018	2017	2016
Crossings for small and large wildlife (in number)	956	883	806
Fenced sections (in km)	8,730	8,651	8,543

The main biodiversity issue faced by Eurovia is the production of aggregates at quarries currently in operation or during the site rehabilitation phase. Eurovia established a partnership with the natural heritage department of France’s Natural History Museum (MNHN) in 2012, which was renewed in 2016. They developed a methodology used to analyse natural environments and a study of the balance of plant and animal life at each site. Using this approach, Eurovia sites can be mapped based on their natural environment and species living there. Measures can then be determined to conserve and provide a favourable environment for new plant and animal species.

At these sites, Eurovia implemented an assessment methodology designed by the MNHN to determine their ecological potential and environmental quality index (IQE). This approach helps define actions to improve how biodiversity is taken into account during both operation and rehabilitation phases. In addition to the MNHN, other local partners (non-profit organisations such as those approved as Permanent Centres for Environmental Initiatives) have gradually been trained and authorised to use this methodology. The IQE was tested on 26 quarries from 2013 to 2018.

Eurovia’s biodiversity indicators specific to quarries

	2018	2017	2016
Quarries that have set up a CLCS ^(*)	44%	39%	19%
Quarries that have formed partnerships with local naturalists	18%	35%	25%
Quarries that have joined the Unicem Environment Charter ^(**)	68%	47%	72%
Number of data on flora and fauna sent to the INPN by Eurovia quarries ^(***)	12,867	12,120	9,800

^(*) Commission Locale de Concertation et de Suivi (local consultation and monitoring commission).

^(**) National Union of the Quarrying and Construction Materials Industries.

^(***) Inventaire National du Patrimoine Naturel (national inventory of natural heritage).

With the Equo Vivo brand, VINCI Construction Terrassement brings together its technical expertise, know-how and experience in environmental improvement projects to better serve its customers. Equo Vivo services cover three areas: ecological connectivity, restoration of aquatic environments and wetlands (streams, marshes, ponds, etc.), and plant-based engineering. In 2018, some 30 new environmental improvement projects were launched or completed by VINCI Construction Terrassement with Equo Vivo. A number of operational staff members (site managers and machine operators) gained and developed significant experience in biodiversity conservation techniques and methods.

The environmental policy at VINCI Airports includes a section on biodiversity conservation that involves conducting an assessment of biodiversity issues at all of its airport sites by 2020. This assessment can then be applied to adapt action plans to the local context, primarily addressing wildlife hazards. The methodology and assessment tool were completed in 2017, and used at Nantes Atlantique, Clermont Ferrand Auvergne, Grenoble Alpes Isere, Chambéry Savoie Mont Blanc and Poitiers-Biard airports. In 2018, VINCI Airports signed a partnership with France's national beekeepers association (Unaf) to show that, if managed properly, land surrounding airports can provide a particularly favourable habitat for pollinators.

2.5.3 Sponsorship, research and development to promote biodiversity

The LISEA Biodiversity Foundation, set up at the end of 2012 with a budget of €5 million for the period 2012-2020, helps to finance local projects submitted by non-profit organisations, companies or research centres located in any of the six French administrative departments crossed by the Tours-Bordeaux rail line: Indre et Loire, Vienne, Deux Sevres, Charente, Charente Maritime and Gironde.

Under the sponsorship programme of the Chair in the Eco-design of Buildings and Infrastructure, the students of AgroParisTech have developed a number of tools and solutions designed to conserve biodiversity in the urban environment.

Biodi(V)strict® is a diagnostics and decision-making tool used to measure the biodiversity potential of an urban or peri-urban development project. This solution is the result of a collaborative project that teamed up urban development experts with scientists under the partnership between VINCI, VINCI Construction France and AgroParisTech within the framework of the VINCI-ParisTech Chair initiated in 2008. A Biodi(V)strict® study of a construction or renovation project determines points that can be improved and suggests ways to promote local plant and wildlife. Biodi(V)strict® is used for projects under public-private partnerships, development or design-build projects and can be applied at various project stages (planning, design, bidding, etc.). This tool has been used on more than 40 projects since 2014 and was tested as part of the implementation of HQE® Performance standards for housing, offices, retail space, schools and university campuses. Created in 2017, Urbalia is the culmination of a unique partnership initiated by AgroParisTech and VINCI under the Chair in the Eco-design of Buildings and Infrastructure to promote biodiversity and urban agriculture. Urbalia supports property professionals in creating spaces that strengthen biodiversity and integrate local agriculture. These spaces are not only more resilient to climate change, but also provide a better setting for people to live in, along with numerous services (urban cooling, rainwater management, local production, and health and well-being areas). In the 12 months since it was founded, Urbalia has supported more than 30 projects ranging from the level of the building to the neighbourhood.

The Chair's research on urban agriculture was published in 2018 and applied to Group programmes relating to this area, especially to develop new dedicated solutions. The thesis entitled "Technosols built using urban waste: ecosystem services and evolution", presented in December 2017, offers guidelines for VINCI companies that want to develop productive green roofs on buildings. Six scientific articles were published in 2018 based on this thesis.

Since 2014, VINCI has been part of the Strategic Guidance Council at the Foundation for Research on Biodiversity (FRB), whose members (non-profit organisations, research centres, government services, businesses, etc.) work to support dialogue and exchange on best practices to address biodiversity issues. The Group has also formed a partnership with the Institute for Sustainable Development and International Relations (IDDR) and is contributing to a thesis on issues relating to the loss of natural land.

3. Social information

3.1 Social commitments to promote sustainable development

3.1.1 Impact of VINCI's business on employment and local development

3.1.1.1 Group companies with strong local roots

VINCI is made up of a network of local companies that have long-established roots in their operating regions (nearly 68% of Group companies have fewer than 100 employees). Owing to these local roots, as well as the autonomy and opportunities for initiative made possible by the Group's decentralised management model, VINCI companies play an important part in the life of surrounding communities. In 2018, VINCI had operations in 104 countries through more than 1,500 companies.

Size of Group companies by number of employees at 31 December 201

	2018							VINCI Immobilier and holding companies	Total	
	VINCI Autoroutes	VINCI Airports	Other concessions	VINCI Energies	Eurovia	VINCI Construction				
From 1 to 99 employees	1	9	13	536	164	286	21	1,030	68%	
From 100 to 499 employees	-	6	4	184	70	134	1	399	26%	
More than 500 employees	3	6	1	19	25	36	1	91	6%	
Total	4	21	18	739	259	456	23	1,520	100%	

3.1.1.2 Promoting the sustainable development of regions

Always taking a long-term perspective, VINCI companies design, finance, build and operate bridges, tunnels, roads and other infrastructure in the public interest that contributes to the sustainable development of regions. Group companies therefore help to structure territories and improve their coherence while playing a key role in economic and social development. Whether engaged in construction or concession activities, Group companies create value that cannot be delocalised and generate significant local benefits in the form of revenue, subcontracting, the development of ancillary activities, local tax contributions and support for local non-profit organisations.

Apart from economic contributions in the form of locally generated revenue and tax payments by companies at local level, the types of activity pursued by the Group promote the growth and attractiveness of regions through the construction or upgrading of infrastructure. In addition, at a time when the requirements of customers – especially those of public sector or quasi-public sector customers, which generated €14.4 billion in revenue for VINCI in 2018 (more than 33% of total revenue) – are increasingly focusing on the environmental and social impacts of projects, Group companies are constantly working to provide innovative solutions, particularly in terms of energy performance, the design of urban eco-districts, promoting the sustainable city, as well as mobility and end-user services.

In 2018, VINCI participated in a working group organised around the theme “Co-construction of relationships between businesses and communities” that was launched by the sustainable development consultancy Utopies®. The working group brought together several large companies in order to discuss the strategic and practical approaches that may be used by them and their peers to drive the growth of sustainable entrepreneurship opportunities at the local and regional levels. In fact, Group companies are already contributing to successful economic development and working to improve economic vitality in the areas where they operate, notably by forging relations with local startups and pursuing open innovation initiatives.

As regional actors, Group companies are key contributors to development, stimulating local and regional economies and spurring entrepreneurship.

As part of the Group’s actions in connection with its strong local presence, VINCI entities in the Loire Atlantique administrative department conducted a study in 2018 to measure the socioeconomic impact of their business activities at the local and regional levels. The report on this study, produced by Utopies®, shows that VINCI’s business activities create many direct and indirect jobs in this region, and by extension and in the same proportions throughout the rest of France. At local level, the salaries paid by VINCI, its other expenses for purchases, taxes and duties, together with those of its staff, help support jobs in government agencies and across the subcontractor chain, owing to the consumer activities of employees. The report also examines the wide range of sectors affected and opens up new ways to think about VINCI’s impact on the development of communities and regions.

For many years, VINCI Concessions has worked closely with startups on the development of pilot projects to test and evaluate new services for customers and new approaches to improve the user experience. VINCI Airports continued the testing of Business in the Air at the Porto and Lisbon airports during the year. This application feature helps business passengers awaiting their flights find and establish new professional contacts or even organise business meetings at the airport via their LinkedIn profiles.

Also in 2018, VINCI Energies stepped up the development of La Factory, a space dedicated to innovation where its teams can come together to work out concepts, exchange ideas and co-construct its future offerings alongside startups as well as the Group’s partners and customers. La Factory houses VINCI Energies’ brand management staff, its personnel focusing on the service sector and smart cities, as well as its Development and Innovation Department, and has a number of startups in residence.

On 5 March 2018, VINCI Energies inaugurated the Hermes platform as a means to link up all of its companies in order to facilitate exchanges on topics relating to innovation. Hermes includes details on all innovative projects being carried out at VINCI Energies, along with their proofs of concept, as well as information on the startups considered as particularly of interest for its various business activities. To date, 276 startups have been selected, out of a total of 2,500 candidate companies.

Along these same lines, VINCI Energies has also launched Energize, its accelerator programme for innovative in-house projects. Any VINCI Energies employee can submit a proposal for an innovative project to the Development and Innovation Department, which will then be reviewed by a selection committee. If the project is approved, the department offers operational support to the employee. By joining the Energize programme, employees seeking to develop a project benefit from mentoring, training and/or financial assistance, as well as support provided by VINCI Energies’ international network of technology experts.

To lend further support to startups, VINCI Energies has also established a managerial investment fund called Inerbiz.

This programme aims to build long-term industrial and commercial partnerships by investing in startups working in areas closely linked to the business challenges faced by VINCI Energies. The Inerbiz programme offers startups:

- made-to-measure operational support (mentoring);
- platforms to test prototype designs for innovations alongside VINCI Energies business units.

Any VINCI Energies employee can recommend a startup to the Development and Innovation Department, which will then be reviewed by a selection committee. If the startup is approved, VINCI Energies acquires a non-controlling stake in the startup, offering the latter access to its innovation ecosystem.

Lastly, among other initiatives to promote innovation, VINCI continued the development of Leonard in 2018, its new cross-activity platform dedicated to insight, innovation and foresight, which is open to both Group employees and partner startups.

3.1.1.3 Social and economic impact of VINCI’s activities

For several years, VINCI companies have had access to tools developed by the Group to measure the social and economic effects of their projects. They have applied this type of assessment to specific sites as well as projects for infrastructure, facilities, upgrades and other works. These studies allow companies not only to highlight the operations being carried out, but also to better take into account the operating environment and adapt their strategies for upcoming phases. They are also helpful when engaging in dialogue with local and regional stakeholders and other key actors (elected officials, business leaders, etc.).

In 2012, LISEA, the concession company for the South Europe Atlantic high-speed rail line (SEA HSL) connecting Tours and Bordeaux, set up a monitoring unit in partnership with the concession grantor, SNCF Réseau, designed to record socioeconomic data for a period of 10 years from the opening of the line to traffic. Its core mandate is to analyse the challenges and opportunities brought by the arrival of the high-speed rail line as they relate to geographical mobility, the local economy and regional development. This monitoring unit involves the participation, alongside the concession company and grantor, of French government agencies, regional and local authorities, chambers of commerce, universities, and all other stakeholders legitimately considered as experts in the chosen research areas.

In addition, studies have been carried out since 2014 by an external partner to measure the direct, indirect and induced impacts of both planned and ongoing operations, using the Local Footprint® tool developed by Utopies®. As examples, this type of study was conducted on:

- the Solignac sur Loire quarry and the quarries managed by Jalicot (Eurovia);
- the project to upgrade the Bambeto roundabout, in Guinea;
- the Stade de France operation;
- QDVC's worksites in Qatar;
- the airports operated by VINCI Airports in France;
- the works and operational phases of the western Strasbourg bypass;
- the T3C works package of the Paris metro's Line 15 South, as a validation of the consortium's Grand Paris SME strategy.

Given the social situation in France and in response to the French government's call for companies to take part in measures to boost purchasing power for workers, VINCI's Executive Management asked the various entities in each of the Group's business lines to award a special year-end bonus to employees, which was paid in January 2019.

The terms for awarding this special bonus, offered to employees at the lower end of the wage scale, were defined by each entity and resulted in individual payments of between €300 and €500, depending on the employee's gross annual salary, the number of working hours actually completed in 2018 and the annual working time stipulated in his or her employment contract. The special bonus was received by more than 50,000 employees out of the Group's total workforce of about 100,000 in France.

3.1.1.4 Social integration through work

In France, public procurement contracts include social integration clauses requiring the recruitment of the long-term unemployed. The French construction industry accounts for 70% of these clauses, corresponding to between 2 and 3 million work hours per year for VINCI companies. To help companies honour their commitments in this area, VINCI created VINCI Insertion Emploi (ViE) in 2011, a social enterprise focused on employment and the only one of its kind in France. ViE recruits locally and currently covers 90% of France.

Activity of the ViE social enterprise, and change

	2018 ^(*)	2017	2016	2018/2017 change
Number of people benefiting from social integration measures	2,107	1,941	2,157	+8.6%
Number of hours of integration employment	804,678	777,238	921,135	+3.5%
Number of hours of training	20,999	22,852	16,716	-8.1%

(*) Data provided reflects information at 30 November 2018.

To help those benefiting from social integration measures build their skills, ViE seeks to lengthen their periods of employment with the Group. In 2018, about 21,000 hours of training were delivered, together with 6,170 hours corresponding to the Group's 15-minute safety sessions, an increase of 9% compared with 2017. Furthermore, 21% of people taken on under social integration clauses were offered an additional contract once their first project was completed (18% in 2017, 14% in 2016, 12% in 2015). Over the year, 614 of the 2,107 people benefiting from these measures (thus nearly 30%) were subsequently hired by the Group or one of its subcontractors, thanks to the effective and ongoing support provided to teams. The increase in the number of hours of integration employment in 2018 was due to the start of work on some of the projects with which ViE was associated, including those initiated under the Grand Paris programme, as well as the opening of a new ViE office for the Normandie Centre region.

For the last five years, ViE has been developing an innovative approach to the mapping of skills and competencies that are transferable to all types of work at a basic level. It puts this approach to use either directly for the long-term unemployed entering the workforce or in its relations with social and solidarity economy (SSE) organisations in order to facilitate stable employment for the individuals involved. Currently, ViE receives no public funding and is continuing to test solutions to improve employability while exploring the ways in which it can promote social innovation and the most effective forms of assistance it can provide.

Given the fact that positive social integration outcomes for people benefiting from these measures who are employed by Group companies sometimes prove difficult to achieve, ViE has been working on a new integration programme entitled "Stratégie territoriale pour l'emploi" (Territorial strategy for employment), known by its French acronym Step, based on the nurturing of talent and the identification of particularly promising candidates. Step is structured as a 12-month programme, including various periods of training, business immersion and support measures to secure lasting employment for the long-term unemployed. The aim is to ensure that these individuals are able to successfully join the workforce, while developing their personal and organisational skills so as to improve their employability; Step is an integration policy "by companies and for companies". Following a first successful experiment in a major city in the northern French region of Hauts de France in 2017, the Group decided in 2018 to extend the coverage of the programme to 10 priority neighbourhoods for urban policy throughout the metropolitan area.

Several Group entities are also applying this proactive approach to promote employment and integration at local level. The dedicated unit for the Grand Paris project has set up a training programme for drafting technicians in partnership with the Greater Paris GEIQ (one of several regional employers' groups formed throughout France to promote social integration through work and qualifications) and the Compagnons du Tour de France (a French organisation of craftsmen and artisans dating back to the Middle Ages). Five individuals divided among various VINCI Construction companies are taking part in this programme, having begun a one year work-study contract in early November 2018.

Another example in this area is the programme launched by VINCI Energies in Morocco, with the assistance of Anapec, the country's national agency for the promotion of employment and skills, to improve access to employment for young people. In 2018, 17 people under the age of 25 were recruited under this 24-month training/integration programme.

3.1.1.5 Partnerships and sponsorships to promote social entrepreneurship and local development

Wherever they operate, Group companies support solidarity and development initiatives. Tailored to address local challenges, these initiatives vary depending on the region and its socioeconomic circumstances. They are also tied to the nature of the work carried out by Group companies (large-scale projects completed in short time frames or recurring work), as well as to the presence or not of Group companies over the long term, etc. As these initiatives differ widely, this information is not consolidated at Group level.

Since it was launched 11 years ago, Initiatives Sogea-Satom pour l'Afrique (Issa) has supported social entrepreneurship projects to improve access to essential services through both financial assistance and skills-based sponsorship by employees. It involves local projects initiated in various areas (education, health, energy, local crafts, food production self-sufficiency, etc.) with a special focus on female project initiators. To date, Issa has supported 226 projects for a total amount of more than €3.5 million in some 21 countries and involving the participation of 230 employees. In 2018, Issa supported 30 new economic and social initiatives in 13 countries.

Activities of Issa (Initiatives Sogea-Satom pour l'Afrique) in 2018, with change

	Number of projects supported		Total	Number of countries involved	Total amount paid (in € thousands)
	Access to essential services	Social entrepreneurship			
2018	12	18	30	13	557
2017	4	21	25	8	480
2016	8	15	23	8	412

New initiatives supported by Issa in 2018 include setting up a complete production facility to manufacture shoes made from textile industry waste, operated by the social enterprise K-Shoes in Nairobi, Kenya. Near Natitingou in Benin, Issa funded the acquisition of a rice colour sorter for eight women's cooperatives, increasing their daily production capacity for parboiled rice from 200 to 800 tonnes. At Koubri, in Burkina Faso, 50 women will soon have access to a suitable parcel of land and technical assistance for onion and papaya farming through the Yennega project, an initiative sponsored by the startup Jardin Green Hope. In Douala, Cameroon, Issa is funding the construction of a multi-purpose space in a medico-educational centre for children with motor difficulties and learning disabilities. Lastly, the Umama centre in Uganda received a grant to build a training facility offering classes in sewing and digital design.

The widespread commitment by Sogea-Satom (VINCI Construction) to the fight against HIV/AIDS, malaria and cholera is demonstrated by initiatives at all of the company's sub-Saharan agencies, including the organisation of information meetings and awareness campaigns targeting employees as well as local residents. These meetings are led by project supervisors together with the company's occupational health and safety specialists, who may be assisted by local associations, NGOs or doctors. They often take the form of 15-minute health sessions, on the model of the Group's similar sessions focusing on safety concerns, and are sometimes complemented by more in-depth presentations and exchanges.

In Cambodia, VINCI Airports is a long-standing partner and shareholder of Artisans Angkor, an organisation created to perpetuate and encourage the development of Khmer traditional crafts while offering career opportunities to the underprivileged populations of the Siem Reap region. The 700 craftspeople hired by the organisation each receive a contractual salary and a full benefits package. Artisans Angkor, a social enterprise with 2018 revenue of €8 million, supports some 2,000 families and promotes economic vitality in the local area.

3.1.2 Impact of VINCI's activities on local populations

In terms of employment, the activities of Group companies contribute to the creation of direct jobs, indirect jobs (temporary employment and subcontracting) and induced jobs. In addition to furthering local employment opportunities, VINCI companies help to support regional development through training initiatives and social integration of the long-term unemployed. Internationally, and particularly in emerging economies, they also promote local skills development, focusing their efforts on both production and managerial staff.

3.1.2.1 Employment and local skills development

As they are highly labour intensive, VINCI's Contracting activities (the Energy, Construction and Roads business lines) have substantial direct, indirect and induced effects on regional employment. For employment at its worksites, the Group encourages the use of local resources, thus contributing to training efforts in regions. Furthermore, practices in the Group's business sectors and the relatively short duration of projects encourage professional and geographical mobility. Accordingly, training efforts of VINCI companies address the needs and issues raised by these skills transfers. The mobility of VINCI employees thus benefits the entire industry, promotes regional development and is encouraged by all Group companies.

In Africa, Sogea-Satom, which uses local resources whenever possible for the work carried out on its sites, once again demonstrated its long-standing commitment to the training of local managers. More than 70% of Sogea-Satom's managers were from the continent in 2018, accounting for 40% of agency directors and 90% of supervisory personnel working in Africa. The year also saw further growth for the Africa Pro campus, established in 2015 by Sogea-Satom in Morocco to expand training opportunities for its employees in Africa and reinforce the company's shared culture. In all, 25,039 hours of training were delivered at the campus in 2018. In addition, more than 2,000 people took part in local recruitment forums organised by Sogea-Satom in Côte d'Ivoire and in Cameroon, where the company also signed a partnership agreement with the Fonds national de l'emploi (FNE), the main agency implementing the country's national employment policy.

VINCI Construction Grands Projets continued the rollout of its Skill Up programme, which aims to develop the knowledge and skills of operational and supervisory staff (manual workers, team leaders and site managers) around the world by setting up training centres tailored to the requirements of each project. These centres are designed to serve local teams employed on the projects. In 2018, new Skill Up training centres were set up in three countries: Egypt, Malaysia and Morocco. With courses delivered to over 307 project participants (employees, subcontractors and partners) during the year, this training has also helped to improve their employability upon completion of work at the sites. The courses dealt with various subjects, such as slinging, scaffolding installation, concrete pouring, the use of concrete pumps and the operation of machinery. Given its scale and time frame as well as its considerable training requirements in the initial period, the construction project for the third phase of Line 3 of the Cairo metro was selected for the establishment of a permanent training centre for the entire duration of works at the Abu Rawash site, where a total of 14,857 hours of training were delivered to 1,278 trainees. In Qatar, the QDVC Training Academy delivered 39,463 hours of training to 2,126 workers.

VINCI Airports Academy, which helps disseminate the company's shared culture as well as its specific know-how, continued its international rollout, in particular by expanding its offering of e-learning modules.

VINCI Construction put in place an internal training course entitled "La ville sous la ville" (The City under the City) in response to the unusual nature of the sites for the Grand Paris project and the company's considerable experience in this type of project. The course aims to foster a culture of special and underground works, thereby anticipating its needs in the area of skills development for its employees in relation to very specific techniques. The first session of this course opened in July 2017. By December 2018, 150 people had received training, in connection with five projects: Eole, the T3C works package for Line 15, T2D, Line 14-2 South, and the T03 works package for Line 14. An introduction to the course is provided as an e-learning module, which may be accessed by all staff.

3.1.2.2 Relations with educational institutions

Even during periods of economic difficulty, VINCI companies recruit new staff and therefore maintain long-term partnerships with educational institutions and academic circles. These partnerships involve a wide variety of initiatives: sponsoring of graduating classes, support for specific degree programmes, site visits, recruitment fairs, sporting events, internships, etc. The general policy in this area is to further develop VINCI's employer brand to underpin the recruitment strategies of Group companies. In France and other countries, Group companies forge many local partnerships with apprenticeship centres, schools, universities and other institutions of higher learning. Group employees also play an important role in these relationships by serving as sponsors or mentors, giving presentations and organising visits, among other actions. VINCI also lends its support to the educational community through the allocation of the apprenticeship tax, which is coordinated both at Group level and by entities building relations with educational institutions in their local areas.

VINCI is a key partner for various schools and universities, both within and outside France. For example, VINCI is the sponsor of the class of 2018 at École des Ponts, one of the three ParisTech engineering schools. New partnerships have also been forged with French engineering schools outside the Paris region (HEI and Polytech Orléans). The regional human resources Pivot Clubs, which bring together HR managers from across the Group, provide essential support in furthering these initiatives. In 2018, VINCI entered into a new type of partnership with Fondation Insa, covering all six of its engineering schools. In addition, many actions are carried out on behalf of students at every stage of their studies by human resources professionals and operational staff to improve their knowledge of the Group and its businesses, but also to assist them in shaping their career plans and help with their personal development.

Several of the Group's subsidiaries are developing their own networks of relations with educational institutions in the regions where they operate. Eurovia, which has long been a partner of the Paris engineering school ESTP, is the sponsor of the school's class of engineering students for the 2017-2020 period. Its aim is to forge personal relationships with each and every student thanks to the involvement of nearly 200 of its employees who offer one-to-one mentoring. Over the course of their studies, students are thus able to deepen their real-world business knowledge in areas such as accident prevention, innovation and international operations. Eurovia's sponsorship aims to demonstrate its growth, wide-ranging business activities and company culture to these future engineers.

VINCI Energies also continued to develop its partnerships with educational institutions and its student sponsorship policy during the year. Given its increasingly acute recruitment needs, along with the unique challenges due to the presence of its subsidiaries in sub-Saharan Africa, VINCI Energies entered into new agreements with several schools and universities during the year: Gamal Abdel Nasser University and Kofi Annan University, both in Conakry, Guinea; École Supérieure Polytechnique de Dakar and École Polytechnique de Thiès in Senegal; and EIGSI Casablanca in Morocco. VINCI Energies also held its popular Young Talents Day recruitment event in Paris again in November 2018, an opportunity for final-year students at engineering, business, management and computer science schools to meet with company staff to discuss their interests and learn more about VINCI Energies' business activities, with several hundred internships on offer, both within and outside France. For the first time in 2018, this event was repeated in Casablanca.

VINCI Construction also maintains close ties with the academic community, especially with top French engineering schools (CentraleSupélec and ESTP) and universities in other countries. The business line has maintained its local recruitment policy in Asia and Oceania by strengthening its ties with the following universities: Hong Kong University of Science and Technology, the National University of Civil Engineering in Hanoi (NUCE), Ho Chi Minh City Polytechnic University (HCMUT), the University of Malaya in Kuala Lumpur (UM), Nanyang Technological University (NTU) in Singapore, the National University of Singapore, the University of Queensland in Brisbane and Monash University in Melbourne.

In 2018, keeping pace with the digital age, VINCI Construction inaugurated The Trail, a worldwide student competition to encourage innovation in the construction industry. Students at VINCI Construction's partner schools and universities were invited to take the construction industry to the next level, with the initial selection of teams based on proposals submitted online, followed by a finals event in France, including project pitches at Leonard:Paris and sports challenges in Annecy. Separate semi-finals were also held in Singapore, bringing together three teams from across Asia (Malaysia, Singapore and Vietnam), and in Brisbane, bringing together three Australian teams from Queensland and Victoria. The two winning teams (from Malaysia and Queensland) took part in the finals in France in May. Specific efforts are brought to bear to help all the participants find internships or jobs in their regions at the conclusion of their studies. Thanks to The Trail, Sogea-Satom was able to recruit three young construction engineering graduates in Uganda.

VINCI Construction also organises initiatives to communicate its environmental knowledge. In October 2018, one of its engineers, currently a Leonard intrapreneur, shared his expertise in the area of climate resilience with students at four universities in Asia (NUCE, HCMUT, UM and NTU).

In Latin America, VINCI Construction continues to develop its close partnerships with educational institutions, notably with the National Autonomous University of Mexico and the country's National Polytechnic Institute, the National University of Colombia and the Antioquia School of Engineering in this same country, as well as the University of Chile and, most recently, Pontifical Catholic University of Chile. Lastly, VINCI Construction frequently takes part in forums, events and conferences organised by academic institutions across Europe and around the world. Each year, dozens of graduates from these top universities and schools join the Group's companies. In Colombia, the Group pursued discussions with the National Training Service (SENA) on employability, training, innovation and R&D.

In Africa, Sogea-Satom supports several educational programmes at a number of engineering schools, including École Polytechnique de Dakar in Senegal, Institut Supérieur de Technologie d'Afrique Centrale (Istac) in Cameroon and Institut International d'Ingénierie de l'Eau et de l'Environnement (ZIE) in Burkina Faso. Sogea-Satom has signed a partnership agreement with Centrale Nantes and the International Campus for Sustainable and Innovative Africa (Icsia) in Mauritius to sponsor female African students admitted to Icsia's Bachelor of Science (Hons) in Engineering programme. Similarly, following the signature of an agreement with the University of Douala, students began working with Sogea-Satom's QHSE team in Cameroon and completed a number of practical internships at its various project sites. VINCI Energies has entered into agreements with five schools and universities in West Africa.

3.1.3 Relations with civil society stakeholders and procedures for dialogue with them

3.1.3.1 General policy relating to dialogue with stakeholders

Owing to their position in the value chain, VINCI companies are continuously engaged in dialogue and consultation with all project stakeholders. Public authorities have responsibility for decisions on transport and energy infrastructure and on facilities to improve the living environment, including where they are to be located. However, VINCI companies serve as a liaison with local communities, residents living near the structures they build, non-profit organisations and users. In order to better identify stakeholder needs and propose solutions that will be satisfactory for all concerned, VINCI has developed an easy-to-use mapping tool called Reflex. This tool was updated in 2018 and its latest version will be made available to all entities in early 2019. Interactive websites developed specifically for major projects round out and help bring a fresh perspective to the more traditional consultation processes, such as public meetings, site visits, etc.

The Group's approach in this area is enshrined in the "Together" Manifesto, which encourages Group companies to strengthen openness and dialogue with stakeholders as an opportunity and a means to create value with a positive impact. As an example, Omexom (VINCI Energies) has launched a project, the first of its kind in France, with SDE 18, the authority that is in charge of energy supply for the Cher administrative department, for the collective generation and on-site consumption of electricity from renewable sources. The project is based on a co-construction process involving stakeholders across Cher. Similarly, VINCI Immobilier is developing innovative solutions to better gather, analyse, understand and take into account the expectations of future buyers at an earlier stage in their processes, with a view to offering homes and configurations precisely tailored to the needs of these customers. In 2018, VINCI Immobilier delivered the iLink property development in Nantes, which breaks new ground by offering scalable and affordable homes, allowing lower-income customers to enlarge their homes as their needs evolve and their income improves. For this project, VINCI Immobilier worked in collaboration with the future residents to design the district and the homes. Community gardens for flowers and vegetables, a holiday rental apartment, a function room and a caretaker's lodge are among the features of the development having resulted from this co-construction process.

In line with this approach, VINCI regularly consults with its stakeholders in the field of social innovation and human rights as a participant in two collaborative initiatives to which all of its companies adhere: the Leadership Group for Responsible Recruitment, convened by the Institute for Human Rights and Business (IHRB), and Building Responsibly. VINCI is a founding member of this coalition alongside five other leading construction and engineering companies from around the world, together representing over 400,000 employees. Its aim is to collaborate globally to raise the bar on workers' rights in the industry. This initiative has received generous support from Humanity United, a US-based foundation dedicated to identifying innovative solutions to address global problems related to human rights.

3.1.3.2 General policy relating to dialogue with customers and users

The majority of VINCI's customers are public authorities or companies. With these customers, the objective embraced by VINCI companies involved in long-term partnerships – for motorways, airports, stadiums and other infrastructure – is to build relationships founded on trust over time, particularly through the services they offer. Except in the case of the Concessions business, the public-private partnerships of the Contracting business or the services provided by VINCI Facilities (VINCI Energies), private individuals are only rarely direct customers. Nevertheless, close working relationships with them are vital, right from the initial design phase, owing to the potential impact of projects on nearby residents. Also, the resulting exchanges can provide important insights into the acceptance of planned structures by communities.

3.1.3.3 Consultation initiatives and relations with local residents and associations representing users

When carrying out their activities, Group companies apply strategies and undertake initiatives in a spirit of dialogue, consultation and exchange with project stakeholders and other key local and regional actors, including elected officials, associations representing users of the infrastructure and facilities they build or operate, as well as people living or working nearby.

LISEA, the operator of the South Europe Atlantic high-speed rail line, fully mindful of the impact on the local noise environment, honoured its commitments by launching an acoustic measurement campaign once the line opened to traffic. The aim of this campaign is to evaluate the adequacy of the procedures put in place under real traffic conditions. LISEA is thus engaged in direct and ongoing consultation with local and regional actors, making sure that transparency remains central to its process. Actions include listening and responding to residents' questions and concerns, and involving mayors in the identification of measuring positions. The mayors were informed of the launch of the measurement campaign in June 2017, before the line opened to traffic. Local consultation meetings in 70 municipalities resulted in the final determination of the measuring positions for the campaign, which ran until spring 2018. All claims, whether they are sent to LISEA, the departmental prefects or the mayors, are centralised so that they can be processed in consultation with all stakeholders in accordance with the specific characteristics of population areas.

Through its activities in quarrying and roadworks, Eurovia builds strong and lasting relationships with local stakeholders – residents, local government authorities, non-profit organisations and government agencies – using approaches such as information meetings, local committees for consultation and monitoring (CLCS), open days, and partnerships with non-profits and NGOs at local level. For the coating plants, a specific and more formal approach is implemented to forge these relationships, involving the use of a dedicated tool for the presentation of activities, in order to best facilitate communication between the company and its stakeholders.

For VINCI Airports in France, the preferred means to pursue consultation with communities living in proximity to airports is the environmental consultation committee (CCE). These committees are chaired by the prefect of the French administrative department where each airport is located and bring together aviation professionals, local authorities and civil society representatives such as local resident associations and environmental organisations. A specific and formal procedure has been set up at each airport for the management and handling of claims. In France, a claims report is presented at every CCE meeting, indicating the number of claims received, the average response time, as well as the breakdown of complaints by municipality and type of disturbance (noise, flight paths, etc.). In Portugal, at all airport facilities managed by ANA, nearby residents are also consulted. The number of claims is consolidated every year at the level of VINCI Airports.

3.1.3.4 Initiatives to promote strong and lasting relationships with users and customers

Alongside their ambition to build and maintain strong and lasting relationships with their stakeholders, Group companies also seek to anticipate the needs and expectations of both their customers and the end users of the infrastructures and facilities they design, build or operate. They do so by developing innovative solutions, in particular to promote the well-being and safety of end users or improve the information provided to them.

To meet the growing demand for new homes and facilitate home ownership for the broadest possible segment of the population, VINCI Construction France has introduced Primméa, a concept to provide high-quality and well-located affordable new homes selling at 20% below the market price, on average. Resolutely focused on its future residents, Primméa is developed with the support of a collaborative platform, through which it is able to regularly obtain feedback from a representative panel of first-time homebuyers across the region. In addition, Primméa involves consultation processes with local authorities, driven by the shared desire to complete each development within a controlled time frame and in keeping with its surroundings, particularly from an architectural standpoint. Primméa is also grounded in a strong commitment: absolutely no reservations raised at the handover of the development.

Among the initial batch of Leonard projects, a VINCI Construction intrapreneur is developing Rehalib, an augmented reality (AR) application for the renovation of buildings and infrastructure. In the early design and consultation phase of a project, the application allows users to visualise the possible changes to a building, including a strong emphasis on co-design, fixtures and fittings for renovation, and personalisation. Users can select materials, colours or furniture in order to virtually refurbish the premises, whether they are looking at a home, a building or even an entire district. The virtual plan thus created can be viewed from a computer, a smartphone, a tablet or by using AR glasses. In sum, customers are offered a realistic, interactive and made-to-measure preview of possible deliverables, which can be very helpful for decision-making and consultation processes. The application can also be useful for landlords in their relations with tenants. In the initial phase of a project, the scale model, combined with architectural elements, makes it possible to create a virtual tour of the premises, thus garnering support for the project among future residents.

Based on an idea that emerged from customers' suggestions, ANA (VINCI Airports) has developed a solution for managing passenger flows, in partnership with Thales Portugal, that monitors the dynamics of occupation within a space and the movement of people through it in real time.

At Lisbon airport, the implementation of this solution helped ANA and the airport's partners improve indicators relating to passenger flows. As a result, waiting times were reduced by 20%, raising passenger satisfaction levels. At Lyon-Saint Exupéry Airport, in association with the French government agencies concerned, an alternative solution to the destruction of items confiscated during passenger checks has been developed. Called See You Later, this paying service is the only one of its kind in France; it offers the option for confiscated items to be mailed to the passenger's home address, at his or her request.

VINCI Autoroutes aims to cultivate constructive relationships with its customers, remaining attentive to their usage patterns and needs, in particular through the development of specific communications materials. VINCI Autoroutes has continued to set up Twitter feeds to deliver real-time and local information on traffic conditions, travel times or even weather alerts. The aim of this approach is to improve responsiveness and help drivers anticipate and make better decisions in the event of an incident. The Twitter feeds round out the range of VINCI Autoroutes services: dedicated website, VINCI Autoroutes app, Radio VINCI Autoroutes, customer service number (3605), and VINCI Autoroutes' main Twitter account.

Contactless toll payment is now possible at a growing number of sites across the VINCI Autoroutes network. Quick and secure, this payment method is another new practical service offered by the company and gets users through toll plazas faster. Alongside the development of electronic toll payment, it is part of the move to paperless transactions and reflects VINCI Autoroutes' ambition to constantly adapt its services to new usage patterns and the expectations of motorway users.

As part of its efforts to strengthen its offer of everyday mobility services, VINCI Autoroutes has also continued its actions to encourage carpooling. At the end of 2017, the motorway section crossing Lyon (on the A6 and A7) was downgraded. After recovering the management of these 16 km of motorways, Métropole de Lyon, the local authority for the Lyon metropolitan area, decided to proceed with experiments to encourage more sustainable mobility behaviours. On behalf of Métropole de Lyon, the technology research institute System X will be running a three-year pilot project to promote carpooling. It will be testing the implementation of reserved lanes in the downgraded section in partnership with several transport operators, including VINCI Autoroutes. Vehicles with at least two passengers, green vehicles (displaying the Crit'Air sticker), taxis, private hire vehicles or express buses would be able to use this reserved lane, thus enjoying faster access to the centre of the city. This project is to be supplemented by car parks reserved for carpooling and transport hubs strategically positioned at points leading up to the section including the reserved lanes. Teams from VINCI Autoroutes are taking part in forward-looking studies on carpooling, dynamic traffic regulation and lane enforcement. The initial findings of these studies are expected by mid-2019.

VINCI Immobilier has introduced new tools to enhance the value in use of its products. To make the purchasing process for a property more fluid and intuitive, the customer experience is now entirely paperless, from the virtual tour to the electronic signature. An extranet site is made available, on which individual customers can follow the progress of construction on the development and of their purchase offer. Thanks to a 3D modelling system, customers can visualise and stroll through their future homes as if they were actually inside them, and can also personalise the premises by changing the flooring options and the decorative elements. Student Factory, another recent initiative, is a service that designs, develops and operates student residences in France, providing a solution to meet the growing demand for student housing, applying an innovative concept. Student Factory residences offer co-working spaces and a lounge as well as a range of services. They are specifically conceived for the "digital native" generation. The customer experience, from the choice of the apartment to the contract signing, is entirely paperless and an online community organises the life of the residence.

3.1.4 Initiatives, partnerships and sponsorships to protect the environment and cultural heritage

In the area of sponsorship and partnerships, VINCI companies focus their initiatives on three main fronts: (i) the environment and research, (ii) culture and heritage assets, and (iii) social integration through work/solidarity (see pages 221 to 223). In accordance with the Group's decentralised administrative model, VINCI does not consolidate either its reporting on sponsorship actions or the total budget allocated. However, a low-range estimate suggests a total amount of about €15 million in 2018.

3.1.4.1 Partnerships and sponsorships that support scientific research and advance scientific knowledge

Ensuring access to reliable and scientifically validated information, and being able to interpret and use this data productively, are essential to VINCI's ongoing operations and the Group's performance. These imperatives also underpin the Group's approach emphasising openness and dialogue in its relations with stakeholders. Since 2008, VINCI has demonstrated its commitment to advance scientific knowledge by creating the VINCI-ParisTech Chair in the Eco-design of Buildings and Infrastructure. This partnership has resulted in the delivery of new tools and reference guides to better understand the issues relating to energy, mobility and biodiversity conservation. Access was offered during the year to a wider range of expertise through collaboration with architects/urban planners, sociologists and big data experts. International partnerships were also forged with about a dozen teams specialising in life cycle analysis (LCA) and simulation platforms. Over these last 10 years, nearly 30 research programmes have been carried out, involving 70 researchers. They have resulted in the publication of more than 150 articles in scientific journals. All of these published articles and other materials presenting work carried out as part of the chair's programme (prepared for conferences or the annual seminar) are available on its website: www.chaire-eco-conception.org. In 2018, the budget allocated for the chair was €800,000. The Group's Executive Committee has decided to renew this partnership for a further five years, in order to continue developing the necessary tools to help address these challenges in the construction industry and those relating to mobility.

The Fabrique de la Cité (www.lafabriquedelacite.com), a think tank set up in December 2010 at the Group's initiative to examine emerging urban issues, takes an interdisciplinary and international approach to studying trends in developments taking place in cities. It received funding from VINCI and its subsidiaries in the amount of €2.1 million in 2018. Energised by its move into new premises at Leonard:Paris during the year, La Fabrique de la Cité held two events on average in the French capital each month across its five research areas (mobility, buildings, energy, new technologies and new uses). It also continued to raise its international profile through events such as its Learning Expedition in Pittsburgh and an international seminar in Vienna, and kept up ties with other large French cities, with events including a workshop on improving mobility for medium distances in Toulouse and a panel discussion on affordable housing in Bordeaux. In 2018, La Fabrique de la Cité's work involved intelligence and research activities as well as publications and events focusing on the following topics: mobility (solutions for medium distances, the potential of digital to resolve congestion, the new geographies of urban mobility, train stations of the future); affordable housing in Europe's growing cities (Paris, Bordeaux, London, Stockholm, Berlin, Munich and Warsaw); continuation of the work begun in 2017 on temporary housing for asylum seekers in German and Swedish cities; quality of life in the city (at the international seminar in Vienna, a three-day event bringing together 90 participants from around the world); urban resilience examined through four viewpoints on this complex subject and a city portrait of Pittsburgh as a former industrial leader being transformed into a technology powerhouse; the role of cities in improving public health, etc.

3.1.4.2 Partnerships and sponsorships to protect the environment

Nature protection organisations continue to raise their expectations in relation to reducing the impacts of the VINCI Group's business activities. Group companies favour partnerships with these organisations at local level, depending on where they are operating, the specific characteristics of projects and the type of business being performed.

A number of Group companies have entered into long-term voluntary partnerships in the area of environmental protection. Since 2012, Eurovia has teamed up with France's Natural History Museum (MNHN) in a partnership to which the MNHN contributes its scientific expertise, assisting Eurovia in its ongoing efforts to further embed biodiversity management within its long-term business strategy. This partnership has established a solid, scientific foundation for Eurovia's approach, a move commended by stakeholders and that supplements the local partnerships still being developed by the company with environmental organisations. As part of this partnership, Eurovia has implemented a methodology designed by the museum's teams to assess the ecological potential of its sites. The method calculates a site's environmental quality indicator (IQE) and helps define the actions to be put in place to improve how biodiversity is taken into account in the operations phase and during site rehabilitation. In addition to the MNHN, other local partners (non-profit organisations such as those approved as Permanent Centres for Environmental Initiatives) have gradually been trained and authorised to use this methodology.

Several Group entities have also forged partnerships with the Bird Protection League (LPO). For example, VINCI Autoroutes promotes collaborative and sustainable management of biodiversity, in particular through its long-standing partnership with this organisation, in order to protect ecosystems near its motorway network during the construction and operation of motorway sections. Under a three-year partnership agreement, VINCI Autoroutes will be funding a number of environmental protection initiatives carried out by LPO France and its network. In addition, VINCI is a partner of the LPO's U2B programme focusing on urban planning and biodiversity for the 2016–2019 period. This programme's main focus is the preservation and rehabilitation of ecological continuity in urban settings.

Apart from their partnership or sponsorship initiatives in support of environmental protection organisations, Group companies also undertake user awareness campaigns focusing on environmental issues or the promotion of biodiversity with the assistance of partner organisations. Such campaigns include those conducted by VINCI Autoroutes at rest and service areas on its networks. Under its partnership with Unaf, the French apiculture trade organisation, in connection with its programme on bees as the sentinels of the environment, VINCI Autoroutes organised information campaigns at several rest and service areas and installed a new apiary at the Lançon de Provence rest area on the A7 motorway. Six apiaries have been installed across the VINCI Autoroutes network since 2012. Today, green spaces around the network are home to 100 beehives, supervised by some 20 beekeepers.

Other initiatives of Group companies to protect the environment include the creation of specific corporate foundations, such as the LISEA Biodiversity Foundation and the LISEA Carbon Foundation. These two foundations seek to provide long-term support to local projects along the route crossed by the South Europe Atlantic high-speed rail line between Tours and Bordeaux, respectively to restore natural habitats and reduce greenhouse gas emissions in the vicinity of the line.

3.1.4.3 Partnerships and sponsorships for cultural production and the preservation of world heritage

Across the Group, many companies are partners or sponsors of non-profit organisations protecting built heritage or supporting cultural institutions and events. Their initiatives take the form of skills sponsorship or financial assistance for projects aimed at restoring cultural heritage assets, improving the dissemination of culture and promoting debate, or support for specific exhibitions, museums or other cultural institutions.

Group companies also take part in cultural sponsorship actions. VINCI Construction is thus a member of the group of Grand Paris Express endowment fund sponsors, lending its support for the programme of upcoming artistic and cultural events along the entire 200 km length of the system's new metro lines.

The endowment fund aims to build a new urban cultural heritage without equal anywhere in the world: the first collection of public art, architecture and urban innovation to span an entire metropolitan area. It supports artistic projects able to mobilise young people in the areas covered by the new network, events held at the construction sites to bring together the public at large, and the creation of original works in the stations.

3.1.4.4 Initiatives and sponsorship actions to promote social integration and solidarity

VINCI encourages civic engagement on the part of its employees and companies, mainly through its corporate foundations and endowment funds. Local projects that help with the social and professional integration of the underprivileged are a key focus. In order to facilitate civic engagement by all Group employees around the world to address problems of general interest, 12 structures have been created since 2002.

In 2018, the foundations granted a total of €5 million to support 500 projects promoting the social, professional and economic integration of the most vulnerable people, with nearly 700 employee volunteers across the Group acting as sponsors.

VINCI's Chantiers et Territoires Solidaires fund is the driving force to promote a lasting partnership between VINCI's Grand Paris construction sites and all their local stakeholders. A first call for projects was launched in 2017 and resulted in the funding of 11 organisations working to create and maintain employment opportunities. In 2018, the funding was maintained and a hackathon held in June helped the organisations create their websites. A second call for projects launched in December 2018 will result in the funding of three new organisations beginning in January 2019.

In 2018, Fondation VINCI pour la Cité, a key player in social innovation, was behind the creation of Liva, a social enterprise to encourage integration. Established as a social joint venture by its two founding shareholders, VINCI Construction France and Association pour la réinsertion économique et sociale (Ares), LIVA is a back-to-work structure serving the long-term unemployed by offering them training in worksite logistics as well as personalised socio-professional support. By the end of 2018, LIVA had taken on a total of 21 employees under its social integration project.

The foundation's Cité Solidaire (solidarity in the community) programme, which targets very small non-profits working in disadvantaged urban areas, saw a fresh burst of activity, with eight new initiatives in Nîmes, Saint Étienne, Valenton-Villeneuve Saint Georges, the Rouen Normandie metropolitan area, Angers, Reims and Lille in France, and Mannheim in Germany. Since its launch in 2010, this exemplary programme has been conducted at 31 sites and has enabled the funding of 281 initiatives to strengthen social ties.

Since 2017, the Fondation VINCI pour la Cité has been developing new ways for employees to demonstrate their civic engagement – through one-off or more regular actions – thus encouraging more of the Group's employees to get involved in solidarity initiatives. As one example of this, the foundation began offering Congés Solidaires® (solidarity leave) opportunities in 2018: international solidarity outreach projects completed by Group employees during their leave periods. Opportunities under this programme were made available in all of the countries served by VINCI's funds and foundations.

Also since 2017, the Fondation VINCI pour la Cité has worked to expand civic engagement opportunities for employees under its Parcours Citoyen (citizen leadership) programme, including occasional or regular coaching sessions, academic support, career assistance for the long-term unemployed and refugees, etc.

Actions of Group foundations in 2018 to combat exclusion and foster integration

	Number of projects supported	Number of employee sponsors	Amount distributed to foundations (in euros)
France	319	564	3,934,935
<i>of which Parcours Citoyen et Ambassadeurs programme</i>	28	218	-
<i>of which Cité Solidaire programme</i>	96	106	710,749
<i>of which Sillon Solidaire programme</i>	13	16	150,000
<i>of which Chantiers et Territoires Solidaires programme</i>		-	284,935
Germany	23	29	187,500
<i>of which Cité Solidaire programme</i>	10	15	106,000
Belgium	15	21	255,000
Spain	4	4	65,000
Greece	5	5	25,000
Netherlands	3	8	40,500
Czech Republic	9	13	29,250
United Kingdom and Ireland	36	40	259,581
<i>of which Isle of Wight Foundation</i>	12	14	88,634
Slovakia	13	13	189,500
Total	427	697	4,986,266

A telling example of the Group's sports solidarity sponsorship initiatives is that involving the Paris Football Club (Paris FC): VINCI is the main partner of the club's training centre, the Paris FC Academy, having entered into a five-year partnership in 2015, in the total amount of €5 million. Beyond the financial assistance provided, VINCI serves as a genuine partner for the club's players, helping them to plan their careers once they leave the world of high-level competitive sports. This educational and social partnership aims to promote the professional integration and vocational training of the club's young players. Specific modules and workshops (business immersion opportunities, workshops on preparing CVs, job interview simulations, etc.) are included in the training courses for players. VINCI employees are key actors in this partnership by mentoring players.

VINCI Energies has continued its partnership with Initiatives-Cœur, a project combining humanitarian and sports sponsorship in the world of sailing to benefit the non-profit Mécénat Chirurgie Cardiaque - Enfants du Monde. Its aim is to raise public awareness of children with congenital heart defects in developing countries who lack access to life-saving surgical care. Launched in 2008, the funds raised by the Initiatives-Cœur adventure have financed heart surgery for 155 children. The partnership between VINCI Energies and Mécénat Chirurgie

Cardiaque includes both a financial component (€120,000 per year since 2017) and joint actions, such as the raising of funds by VINCI Energies employees or students. In 2018, VINCI Energies set up a public platform to facilitate the collection of funds: any employee or other individual who wishes to do so may organise sports challenges to raise money for the non-profit more easily and by reaching a wider audience.

Group companies are involved in many other sports sponsorship initiatives. For example, Eurovia is an official partner of the French Athletics Foundation (FFA) and a number of clubs are supported by Group companies at local level.

3.2 Subcontracting and suppliers

Group companies generally occupy positions in the value chain that foster balanced, long-term relationships with partners, both suppliers and subcontractors. For several years, the proportion of purchases has remained stable, representing 57% of the Group's revenue at end-2018. In 2018, they were comprised, in particular, of €9.8 billion for materials, €5.5 billion for external services and €8.2 billion for subcontracting.

Percentage of revenue allocated to purchases

(in € billions)	2018	2017	Change
Total amount of purchases	24.7	22.7	+8.8%
Percentage of revenue allocated to purchases	57%	56%	+0.6%
<i>Of which purchases consumed</i>	9.8	8.6	+14.0%
<i>Of which purchases of external services</i>	5.5	5.3	+3.0%
<i>Of which subcontracting</i>	8.2	7.7	+7.2%

3.2.1 Taking social and environmental issues into account in purchasing processes

In 2018, the Group continued its efforts to measure and take into account workforce-related, social and environmental factors in the overall value chain. The Purchasing Coordination unit, which reports directly to VINCI's Executive Committee, works with the purchasing departments of business lines and subsidiaries through a central purchasing network. All of the Purchasing Coordination unit's buyers have an individual target for including sustainable development criteria in each contract they negotiate.

Tasked with rolling out the Group's international purchasing policy, the VINCI International Purchasing Committee comprises purchasing representatives from five countries (Germany and the United Kingdom, the two countries after France where the Group has the most extensive operations, together with the Czech Republic, Belgium and Poland); it also includes representatives from the international divisions of two Group business lines (VINCI Energies and Eurovia).

Introduced in 2012, the Group's Supplier Performance Charter explicitly specifies VINCI's expectations of its partners and reaffirms the Group's own commitments as a signatory to the UN Global Compact since 2003. Widely disseminated since 2013, this charter now forms an integral part of the framework agreements developed by the Group. To ensure the continuity of these actions, the Group's Purchasing Coordination unit established its Responsible Purchasing Committee, which brings together about 20 representatives of purchasing, human resources and sustainable development departments from the Group's business lines. In 2016, this committee focused on communicating the priorities of VINCI's responsible purchasing policy while educating buyers in responsible purchasing procedures. Since then, it has worked to develop two tools: a practical guide to responsible purchasing and a responsible purchasing checklist. These documents will be distributed at the Purchasing seminar in January 2019. To accompany publication of the guide, a visual presentation currently in preparation will be disseminated to raise awareness among all Group employees engaged in purchasing activities.

3.2.2 Encouraging suppliers and subcontractors to promote sustainability principles

In 2018, the Group further reinforced its responsible purchasing process. Sustainable development criteria are now addressed both when selecting products and suppliers and when drafting framework agreements and specifications at Group level. These criteria take into account the environmental impact of products and services, the workforce-related arrangements for producing or providing them, and the social commitments made by suppliers. Specific criteria are used for evaluating suppliers in each purchasing category, depending on the issues faced by the sector in question.

The Purchasing Coordination unit issued a new invitation to tender in 2018 for the selection and approval of heavy construction equipment rental companies. A personalised questionnaire was developed to evaluate suppliers with respect to workforce-related and social performance.

In recent years, the Purchasing Coordination unit has strengthened the integration of the Group's responsible purchasing policy in the selection of its suppliers. A tour of regional purchasing committees was conducted to raise awareness among teams as to the expectations for responsible purchasing.

The due diligence process is under way at the level of the Purchasing Coordination unit. It involves identifying the risks specific to each purchase category and then implementing prevention procedures using appropriate criteria in the specifications for each category.

Key figures for the Group's responsible purchasing initiative within the Purchasing Coordination unit

	Total at 31/12/2018
Contracts including the Group's Supplier Performance Charter or the Global Compact's 10 principles	98%
Contracts including one or more clauses on workforce-related, environmental or social themes	77%
Contracts having involved the completion of a responsible purchasing questionnaire during the tender process	74%
Contracts integrating a progress plan for responsible purchasing	50%
Number of on-site responsible purchasing audits conducted over the last five years	682

At central level, and in each of its projects, VINCI develops partnership-based approaches with its suppliers and favours relationships at local level with small and medium-sized enterprises (SMEs). In its selection and bidding processes, the Group prefers suppliers with strong roots in their regions. This policy also involves expanding purchases from social integration structures and from social enterprises, sheltered workshops and other organisations that specifically employ people with disabilities. In 2018, the volume of purchases from these entities was €6.1 million.

3.2.3 Managing relations with subcontractors

The Group places a priority on retaining and expanding in-house expertise. However, the many public procurement contracts won by the Group, together with its growing presence in general contracting for projects demanding highly technical and specialised skill sets, require the use of a certain percentage of local subcontractors. These actions contribute to the development of local businesses and the local economy as a whole, over and above the other contributions made by the Group's business activities. Given a competitive landscape outside France that is frequently characterised by low standards in this area, VINCI pays attention to ensuring that its subcontractors comply with regulations in force in the countries where Group companies operate.

The Group's general policy is to build balanced relationships with its partners over the long term. This involves a commitment to cooperate with local companies, facilitating their integration in projects and encouraging the transfer of know-how to ensure the successful completion of projects. Rolled out in 2014, VINCI's Subcontractor Relations Guidelines sets out the implications of this commitment. In addition to cooperation with local companies, VINCI aims to guarantee safety conditions of subcontractors' employees that are comparable to those of the Group's personnel, and to ensure respectful business relationships, fair bidding processes, transparency in business dealings and compliance with VINCI's core values. To assess the acceptance and application of these principles, some 30 interviews were conducted with individuals likely to act as contracting authorities across all business lines, in France and abroad.

The issues faced by VINCI are not limited to regions beyond Europe: tensions in the building and public works market and the problem of heightened competition in developed countries have led the Group to strengthen its duty of vigilance approach, in particular with respect to the management of social risk by all of its subcontractors in France. To this end, VINCI launched a number of pilot projects in 2018 to evaluate the practices already in place to manage social risk and identify areas in need of improvement as well as an operational method to assess, prioritise and manage risks.

In some geographic regions, increased vigilance of recruitment agencies is required when outsourcing of the recruitment process can be considered as high risk. Workers in some countries are hired extraterritorially, entailing the use of intermediaries outside these countries. In these cases, it is important to ensure that the recruitment process is secure in order to avoid any risk of forced labour.

The guidelines communicated in VINCI's Guide on Human Rights indicate the actions to be put in place and the fact that applicants must not bear any of the costs for the recruitment procedure. Furthermore, in June 2017 VINCI joined the Leadership Group for Responsible Recruitment, a collaborative initiative between leading companies and expert organisations to promote responsible recruitment practices.

3.3 Measures to promote the health and safety of customers and users

The business activities of VINCI's companies have an impact on the areas where they take place. To limit the effects, research and development investments are stepped up annually to lessen impacts and pollution. The main efforts are in relation to environmental impacts such as exposure to noise, dust, vibrations, etc. that could have an effect on the health and safety of employees, customers and all stakeholders concerned.

Work is continuously carried out on improving the service quality of VINCI infrastructure for customers and satisfaction surveys are regularly conducted. In the Group's activities involving mobility, road risk is the main category of risk affecting users. VINCI employees drive more than 35,000 company vehicles and several thousand site machines. They are all exposed to road risk, as are the hundreds of millions of people using motorways, roads and other infrastructure operated under concession contracts every year (more than 2 million per day), as well as the airports operated by VINCI Airports (nearly 195 million in 2018). Campaigns are organised to raise awareness and specific training is provided for the employees most exposed.

In France, the VINCI Autoroutes Foundation for Responsible Driving renewed its commitment to its many actions to promote road safety among motorcyclists and car drivers, such as the organisation of special rest areas for the 24-hour motorcycle race in Le Mans as well as its partnership with the Third National Rescue Challenge and the Second National Trauma Challenge, both part of the Extraction Challenge 2018 event held at the National Velodrome in Saint Quentin en Yvelines.

In line with its commitment to the reduction of road risk, the Foundation focuses in particular on drowsiness and inattentiveness at the wheel. Through its research programme, the Foundation takes part in the funding of several scientific studies and investigations looking at road user behaviours. It also plays a leading role in making information on these two areas of concern available to drivers and the general public.

Just before the summer holiday period in 2018, the VINCI Autoroutes Foundation for Responsible Driving published the findings of the fifth edition of its European barometer survey on responsible driving. At the same time, an affiliated team of scientific contributors to the magazine *Cerveau & Psycho* published an article offering insights into patterns of brain activity when driving.

Accident figures for the VINCI Autoroutes network

	2018	2017
VINCI Autoroutes motorway networks (in km)	4,412	4,412
Traffic (in billions of km travelled)	51	51
Number of accidents per billion km travelled	248	232
Number of fatal accidents per billion km travelled	1.5	1.4
Number of deaths per billion km travelled	1.8	1.6

In partnership with the VINCI Autoroutes Foundation, Christophe Bourroux, a well-known motoring journalist at the RTL radio station, agreed to take part in an experiment in July 2018 to evaluate the risks relating to drowsiness and inattentiveness at the wheel. Wearing sensors, he drove from Paris to Biarritz during the day and returned during the night. On the southbound trip, Bourroux looked away from

the road to check his smartphone for a total of 32 kilometres. On the return trip to the capital, he showed signs of drowsiness for a total of 101 kilometres (thus over one-seventh of the distance). The sensors were able to record a period of sleep lasting 24 seconds. The media widely broadcast the results of this experiment at the start of the summer holiday period in France.

In 2018, the VINCI Autoroutes Foundation published the results of a study on the behavioural impacts of driver-assistance systems, in particular fatigue, inattention or drowsiness at the wheel, which was carried out by the University of Strasbourg's Centre for Neurocognitive and Neurophysiological Investigation (CI2N). During the year, the Foundation also launched the second phase of a study conducted by Inserm, Hospices Civils de Lyon (HCL) and the Lyon Neuroscience Research Centre (CRNL) on biological screening for drowsiness using saliva. In all, 400 drivers volunteered to take part in this study. Their saliva samples were collected at the Saint Rambert d'Albon rest area on the A7 motorway in June and October 2018. The findings of this study, due to be released in 2019, will be useful in developing more effective ways to combat the deleterious effects of sleep deprivation on behaviour at the wheel by adapting preventive measures. In particular, this might involve the development of preventive tools allowing drivers to test their own level of drowsiness. Across the entire VINCI Autoroutes network, many awareness actions concerning road safety and the safety of personnel working on motorways were conducted over the course of the year, directed at different categories of road user.

3.4 Information relating to ethical practices

3.4.1 General policy relating to ethical practices

The second commitment of the VINCI Manifesto states as follows: "Ethical behaviour is key to our contracts and our customer relations. Our companies apply our Code of Ethics and Conduct around the world. We commit to ensuring total transparency in our own practices and in those of our subcontractors."

VINCI's Code of Ethics and Conduct sets out the rules of conduct that apply to all Group companies and employees. Since its first version, the code has included a section on the prevention of corruption, an issue brought to the fore in France by Law no. 2016-1691 of 9 December 2016 relating to transparency, anti-corruption measures and the modernisation of economic life (known as the "Sapin 2" law).

An updated version of the code was released in 2017, primarily to reaffirm the Group's commitments to its duty of vigilance, the prevention of corruption and the protection of personal data.

It is now accompanied by a specific Anti-corruption Code of Conduct, written at the end of 2017, which lays down the Group's rules for the prevention of acts of corruption, in particular through the identification of corruption risks in business processes and by setting out specific examples of conduct to be avoided.

These two documents are the foundation for the Group's directives in this area. They have been translated into 26 languages and are available for more than 99% of the Group's employees in the official language of their country. They are also published on the Group's website (www.vinci.com) and its intranet site (www.vinci.net).

In line with its efforts in prior years to present and explain these two codes, a new, digital campaign was organised in February 2018 for the dissemination of the latest versions, endorsed by the Group's Chairman and Chief Executive Officer, Xavier Huillard, and targeting the members of the Executive Committee. It was then relayed gradually through the chain of command to senior executives, operational and functional executives, and business line managers including those responsible for specific agencies and activities, projects, purchasing, human resources, accounting and finance, thus a total of 18,457 individuals at 31 December 2018.

In addition to acknowledging receipt of the codes, all of the recipients have expressly agreed to "apply and enforce" the rules and principles set forth therein.

Furthermore, the Anti-corruption Code of Conduct is now included in the welcome pack for all new employees and as an annex to the Group's internal rules.

Since 2018, the Group has worked to better structure its measures to prevent and detect acts of corruption, to ensure that employees understand the related domestic, and even international, legal regimes and are fully aware of the issues involved and their responsibilities. Possible corruption scenarios and the associated risks are clearly presented, along with the procedures to be carried out to limit risks, examples of conduct to be avoided, the best ways to respond to an inappropriate demand, the procedures for reporting suspicions concerning corrupt conduct, as well as the disciplinary actions that may be taken or the criminal penalties that may be imposed on individuals for any infringement of rules or regulations.

Training programmes are developed and rolled out at each of the Group's organisational levels. An e-learning module on the fight against corruption, followed by a quiz to test the learner's knowledge, is now available to all employees on Up!, VINCI's online learning management system, in the Group's four main working languages (French, English, German and Spanish). At 31 December 2018, more than 6,000 employees had completed this module.

The Group has set up a whistleblowing procedure that can be used by any employee to report any serious failure to comply with the rules and commitments of the Group as set forth in the Code of Ethics and Conduct, the Anti-corruption Code of Conduct, the Guide on Human Rights and the Joint Statement on Workplace Health and Safety. Whistleblowing at VINCI is a multimodal procedure. Initially, employees must inform their direct or indirect supervisor, or an officer designated for this purpose within the entity to which they belong. They may also submit their report via the entity's online whistleblowing system, if it has one. Employees can also contact the Group's Ethics Officer directly or use VINCI Integrity, the Group's online whistleblowing system, set up at the end of 2018 after receiving the go-ahead from the European Works Council.

Whatever the means used, all exchanges are kept strictly confidential. VINCI guarantees that no employee of the Group will be penalised or dismissed, and that no disciplinary action will be taken against the employee, whether directly or indirectly, for having reported or given evidence, in good faith, under the whistleblowing procedure, concerning acts of which the employee obtained personal knowledge during the course of his or her duties. This remains the case even if the allegation made is determined to be false after investigation.

To accompany the implementation and rollout of compliance programmes in the business lines and ensure fair practices, the Group's corporate governance bodies have been reconfigured. The procedures for the operation of these governance bodies are described in paragraph 2.2.2 ("Organisational structures involved in risk management and internal control") of chapter D, "Risk factors and management procedures" in the Report of the Board of Directors.

The Ethics and Compliance Club, which brings together the legal heads of the Group's business lines, the Internal Control Director and the Ethics and Vigilance Director, aims to keep abreast of changes in legislation relating to ethics and foster exchanges of best practices, in particular with respect to training tools. It thus contributes to the prevention of actions contrary to business ethics. The club met eight times in 2018.

Lastly, the GDPR Representatives Club was created in early 2018. It brings together the representatives designated by each of the Group's business lines. Its aim is to provide support to the business lines in order to ensure the Group's compliance with Regulation (EU) No. 2016/679, known as the General Data Protection Regulation (GDPR). This body, coordinated by the Ethics and Vigilance Department, supports the sharing of tools and best practices. By way of example, the GDPR Representatives Club helped in the selection of a shared tool to maintain data processing logs at the entities of each business line. In addition, a mini-series consisting of six e-learning modules to raise awareness of the GDPR was made available to employees at the start of 2018, to familiarise them with the new rules in force and their new rights and obligations with respect to the protection of personal data. This club met eight times in 2018.

3.4.2 Practices relating to tax policy

As a global player in concessions and construction, the VINCI Group has operations in over 100 countries. Its highly decentralised organisation is structured around operating subsidiaries rather than by country or geographic region. The Group's substantial expense relating to taxes, fees and other obligatory payments represents a significant portion of its contribution to the economies of the countries where it operates. The Group meets its tax obligations, in full compliance with applicable local and international laws and in line with VINCI's intangible and universal commitments.

In accordance with VINCI's Code of Ethics and Conduct as well as its general guidelines, strict compliance with applicable laws and regulations is a core principle for the Group, one that must be followed in all circumstances by every employee and every business unit in the countries where they operate.

Due to the specificities of VINCI's business model as well as its activities, which are chiefly local in character, the Group's entities tend to favour local suppliers for their purchases of goods and services. For this reason, cross-border transactions between the Group's various companies are simple and not material. Furthermore, the invoicing principles applied follow the OECD Transfer Pricing Guidelines. These guidelines incorporate the recommendations resulting from the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project, and in particular Actions 8-10 "Aligning Transfer Pricing Outcomes with Value Creation", supplementing the Group's adherence to the arm's length principle.

Given the autonomy granted to the Group's subsidiaries, the main tax risks that may arise in connection with their activities relate to the diversity, scale and/or complexity of operations. These risks can be either financial or reputational:

- Financial risks:
 - Tax compliance and related risks: late filing of returns, inaccurate tax returns, failure of submission in due time of claims and options, or any other tax compliance failure whatever the reason may be (human error, system error, etc.);
 - Operational tax risks: technical or factual inaccuracies, lack of in-depth tax analysis, unanticipated changes in tax legislation, misinterpretation of complex or unclear tax rules;
- Reputational risks: these risks are triggered by financial risks that may impact the Group's relations with various parties, such as the tax authorities.

Tax issues, including tax risks, like all other financial information, are reviewed on a regular basis by the CFOs of all Group entities, in particular during calls for tender, at each budget phase, in connection with the preparation of annual and half-year financial statements, and as often as necessary. Each CFO reports directly to the entity's chairman, to the members of its Board of Directors or other competent supervisory body, as well as to the CFO at the next hierarchical level.

As expressly indicated in the Group's general guidelines, the CFOs must ensure that financial data is presented in accordance with the standards, principles and procedures in force. Financial data, which includes tax data, is reported, managed and verified using reliable accounting systems that are monitored on a constant basis to ensure that they are functioning efficiently. Data audits are carried out frequently and staff using data receive training on an ongoing basis.

For any tax issue, the CFOs can request assistance from in-house experts, at the main holding companies of each division, in the business lines and at the level of VINCI SA, and/or outside consultants, depending on the issue and its materiality. Any outside consultant providing assistance must pledge to abide by the values expressed by VINCI, in particular those set forth in its Code of Ethics and Conduct.

VINCI takes the tax aspects of its operating activities and/or its investments into account and may make use of the options provided by local regulations to alleviate its tax or administrative burden. Nevertheless, in all cases, the Group's fundamental principle is to reject the use of aggressive tax planning or other artificial structures designed in particular to avoid paying taxes, as well as any participation in other arrangements mainly for tax purposes that would offer no real commercial advantage. Similarly, whenever VINCI maintains a presence in a country considered as a tax haven, it is uniquely as a result of its operating activities.

If a tax risk is identified, proportionate solutions are designed and implemented at the appropriate level, in collaboration with the relevant tax and financial teams, so as to minimise this risk. These analyses and solutions are regularly updated in accordance with trends in projects, changes in the Group's organisation, as well as legal and regulatory developments. Whenever necessary, they are discussed and reviewed with auditors and/or the competent tax authorities.

One of the Group's key expectations of its subsidiaries is that they build and maintain good, transparent and constructive relations with tax authorities in each of the countries where they operate.

3.5 Information relating to actions taken in favour of human rights

VINCI's policy in the area of human rights, its framework and the specific actions implemented are described in more detail in the chapter devoted to the Group's duty of vigilance plan (see section 4, "Duty of vigilance plan", page 228).

3.5.1 General policy in the area of human rights

VINCI has been a signatory to the UN Global Compact since 2003. It is thus committed to supporting and promoting respect for human rights within its sphere of influence, and to ensuring that Group companies are not complicit in human rights abuses. VINCI refers to the UN Guiding Principles on Business and Human Rights in defining its strategy. In this vein, VINCI has updated its analysis of the human

rights risks associated with its business activities. The key issues identified were grouped into five categories, themselves divided into 17 themes, covering the entire life cycle of projects (from responses to calls for tenders to entry into service and operations). The five categories are recruitment practices and migrant workers, working conditions, conditions of accommodation, the practices of subcontractors in the area of human rights, and relations with local communities.

A Group-wide reference guide, VINCI's Guide on Human Rights, has been prepared by an ad hoc steering committee, comprised of human resources managers of all Group business lines and divisions. It provides an overview of the issues identified and their implications for the Group's companies. The guide also presents a shared set of guidelines, indicating the specific approaches to be adopted with respect to each of these 17 themes. The Group's guidelines are in keeping with the principles of the Universal Declaration of Human Rights, the eight fundamental conventions of the International Labour Organisation and the OECD's Guidelines for Multinational Enterprises. VINCI's Guide on Human Rights applies to all Group employees. Following its validation by VINCI's Executive Committee in April 2017, several translations of this guide were commissioned in 2018 to make it accessible to the largest possible number of employees. It is now available in 21 languages, thus covering more than 98% of the workforce, based on the official languages of the Group's operating countries. An internal document appended to the guide, intended for operational managers and human resources professionals within the Group, provides detailed descriptions of the issues and presents useful tools, recommendations and best practices.

The guide has been distributed to all of the Group's operating entities. It has been presented to the European Works Council as well as the management committees of all Group business lines and divisions, who took responsibility for cascading the information to their teams. Human rights are also a focus of the new version of Advance, VINCI's sustainable development self-assessment tool used by all management committees of Group companies. Lastly, the guide is a public document and may be accessed by any interested parties via the VINCI website. It has also been printed by the Group in a run of more than 5,000 copies in French and 4,000 in English. Its broad distribution is also ensured via electronic means, in a format allowing it to be printed or reproduced locally by the Group's companies.

In order to supplement the standard contractual clauses on human rights, a comprehensive and gradual approach has been defined by the Group to disseminate these guidelines to staff likely to have to deal with these issues in the course of their projects. As part of this approach, various risk and performance assessment tools were developed and tested in 2018, in advance of a broader rollout. The eight pilot countries selected to test these tools are Morocco, Cambodia, Vietnam, Egypt, Cameroon, Colombia, the Dominican Republic and Poland. This work is still in progress and supplements the actions being taken in other countries, like Qatar.

In relation to its airport concessions in Cambodia, VINCI also decided in 2018 to have an audit of psychosocial risks carried out by an independent third party, whose findings will be discussed with trade unions, and to renew the audits of its temporary employment agency partners. These measures were taken in the context of the mediation and conciliation platform provided by the French National Contact Point (NCP) set up to further the implementation of the OECD Guidelines for Multinational Enterprises. The French NCP found that the Group effectively observes the OECD Guidelines despite a sensitive context in the country and that it has taken the appropriate due diligence measures with respect to its Cambodian subsidiary. A specific monitoring procedure will be put in place in response to the NCP's conclusions and final recommendations, which were communicated in December 2018.

As part of the Group's focus on continuous improvement, an e-learning module to raise awareness and provide information about human rights issues for the Group's businesses was prepared in 2018 and is due to be launched for staff in early 2019.

As is the case for the guide, this comprehensive approach is supported and steered by a dedicated Human Rights committee, consisting of the human resources managers of all Group business lines and divisions, which meets on a quarterly basis.

Lastly, in support of its policy and in order to be able to exert its influence on the value chain, VINCI actively participates in collaborative initiatives, in particular Building Responsibly, a global business initiative co-founded by the Group that serves the engineering and construction industry. Launched in February 2017, Building Responsibly aims to bring together companies in the sector in order to develop common approaches and standards, share best practices, tools and experiences, and engage stakeholders and all actors in the industry's value chain to find concrete and collective solutions to the challenges faced in the sector in looking after the rights and welfare of workers.

In June 2017, VINCI also became a member of the Leadership Group for Responsible Recruitment's Steering Committee. This initiative convened by the Institute for Human Rights and Business (IHRB) focuses specifically on issues relating to recruitment and migrant workers.

In France, VINCI is a member, alongside 15 other leading companies, of Entreprises pour les droits de l'Homme / Businesses for Human Rights (EDH), a non-profit organisation offering a forum for exchanges to better embed human rights within the policies and practices of companies.

At the end of 2017, VINCI joined the Global Deal, a worldwide initiative that aims to foster and promote social dialogue as an important tool to generate decent work and quality jobs, thus leading to greater equality and inclusive growth. VINCI sees its declaration of support for this multi-stakeholder partnership, which brings together governments, businesses, trade unions and other organisations, as an additional opportunity to strengthen its efforts to disseminate and develop labour relations dialogue in all the countries where it operates and across its entire sphere of influence.

In 2018, VINCI continued to engage with its stakeholders on these issues. Ongoing dialogue was maintained with key civil society representatives, international organisations, professional associations, universities, etc. at local level, but also through participation in forums, working groups and collaborative initiatives.

3.5.2 Prevention of human rights risks in Qatar

VINCI is present in Qatar via its joint venture QDVC. For a number of years, this company has sought to ensure better working and living conditions for its employees, and fights against all infringements of fundamental human rights. In 2015, among other steps taken to verify that measures put in place by QDVC were effective, VINCI decided to enlist the services of an independent third party to conduct a human rights impact assessment (HRIA) at the company. The HRIA report concluded that "despite a challenging operating environment, QDVC has achieved a good level of performance that effectively helps to reduce the risk of negative effects on the human rights of its employees and subcontractors". A committee of independent international experts from institutions widely known for their work in this area (the International Labour Organisation (ILO), Building and Wood Workers' International (BWI), the Danish Institute for Human Rights, the Qatar Foundation, and the French National Consultative Commission on Human Rights) also assisted with this assessment. Furthermore,

missions to visit QDVC's worksites are regularly organised with the Group trade union representatives, the employee Board members or the Secretary General of VINCI's European Works Council.

More specifically, QDVC applies rigorous procedures to ensure that its employees enjoy freedom of movement. All of them are in possession of Qatari residence permits and have access to secure lockers where they may store their personal documents – passports, employment contracts, etc. QDVC also issues official no objection certificates (NOCs) to employees wanting to leave the company or seek employment elsewhere, and official exit permits if they need to leave the country for any reason (holidays, emergencies). To fight debt bondage, QDVC has put in place robust control processes for the monitoring of recruitment agencies in the countries of origin (Bangladesh, India, Nepal, etc.), involving precise rules about the expenses paid by QDVC (airfares, visas, medical visits, etc.), with the understanding that migrant workers must not bear any of these costs. Lastly, QDVC pays particular attention to the living conditions and conditions of accommodation of its migrant workers. The accommodation sites, which are owned and managed by QDVC, meet the standards of the Qatar Foundation.

QDVC has continued its actions to improve working conditions, with the introduction, in March 2016, of a system for reporting complaints (for collective as well as individual complaints) that guarantees its employees complete confidentiality, and with the election of 27 employee representatives in November 2016, chosen by their peers to represent them on the company's Workers' Committee. For a month, 75 candidates waged their campaigns. The election's participation rate was 72%, thus 2,894 voting employees out of a total workforce of 4,016. Although QDVC had already set up representative bodies for workers prior to this date, this was the very first time in the country that employee representatives had been elected by their peers.

In addition, following several years of constructive dialogue, VINCI, QDVC and Building and Wood Workers' International (BWI) signed an agreement on workers' rights in November 2017 at the ILO's Geneva headquarters, during a ceremony attended by its director-general. This agreement covers human rights in the workplace, accommodation, and issues relating to the fair recruitment and the employment rights of workers. It applies to all workers employed by QDVC in Qatar and stipulates a due diligence procedure for subcontractors. This agreement is the first of its kind in Qatar between a union federation and a Qatari company. The agreement also calls for an extensive verification system involving follow-up, reporting, monitoring, inspections and audits under the aegis of a reference group composed of representatives of the three parties. All aspects of the agreement's implementation will be reviewed by the parties. The agreement is a public document and may be accessed by any interested party via the QDVC website.

It is also made available by the company to its own employees as well as those of its labour suppliers and subcontractors. Following an initial meeting by the agreement's reference group in April 2018, the first on-site audit was conducted on 8 and 9 January 2019. The Group's trade union representatives also took part in this audit.

Lastly, the ILO Project Office in Qatar and QDVC signed a partnership agreement in May 2018, within the framework of the ILO-Qatar cooperation programme, to pilot a fair recruitment intervention between Bangladesh and Qatar aiming at ensuring a recruitment process that is free of charge for migrant workers recruited by QDVC's placement agencies and sub-contractors. The methodology is based in particular on an initial audit carried out by an independent third party in July 2018, followed by a capacity-building programme for recruitment and placement agencies in the sourcing country. This programme, implemented in October 2018, brings together QDVC, recruitment and placement agencies in Bangladesh and Qatar, the ILO, Qatar's Ministry of Administrative Development, Labour and Social Affairs (ADLSA), and the Fair Hiring Initiative. An impact analysis will be conducted subsequently by the ILO with the assistance of university researchers. This pilot project provides an opportunity for QDVC to generalise fair recruitment practices among its subcontractors and recruitment agencies.

4. Duty of vigilance plan

This section of the annual report aims to satisfy the requirements of French law no. 2017-399 on the duty of vigilance of parent companies and subcontracting companies to identify risks and prevent severe impacts on human rights and fundamental freedoms, on people's health and safety, and on the environment, resulting from the activities of the company, those of its subsidiaries, or those of subcontractors or suppliers with whom they have an established business relationship.

VINCI's duty of vigilance plan builds on the sustainable development commitments in the Group's Manifesto, the Code of Ethics and Conduct and, more broadly, Group policies that help prevent risks to people and promote the implementation of vigilance measures in each of the three areas covered by the law.

The Group's health and safety policy, which has been reinforced by a joint declaration of fundamental actions to promote occupational health and safety, is managed by the Health and Safety Coordination unit, which is under the supervision of the VINCI Executive Committee. Human rights risk prevention policy is disseminated through VINCI's Guide on Human Rights and coordinated at Group level by the Director of Human Resources and Sustainable Development, who is also a member of the VINCI Executive Committee. Environmental policy is promoted by the Manifesto and championed at Group level by the Sustainable Development Delegation and Committee, as well as working groups focusing on specific themes (biodiversity, circular economy, etc.), overseen by the VINCI Executive Committee.

As an additional resource, an Ethics and Vigilance Department, reporting to the Group's Executive Management, was set up on 1 January 2018 and an Ethics and Vigilance Committee was formed in March 2018. This committee, which consists of seven members, five of whom also serve on the Executive Committee, oversees the rollout and any further changes to the compliance systems covered by the Code of Ethics and Conduct, and in particular those relating to the fight against corruption and the prevention of serious breaches of human rights obligations and fundamental freedoms, of health, safety and security procedures in the workplace, or of environmental legislation and regulations, resulting from the Group's business activities.

The committee reports annually on its activities to the Strategy and CSR Committee of the Board of Directors and met eight times in 2018.

VINCI's duty of vigilance plan, encompassing all entities controlled by VINCI, is also underpinned by the Group's cross-activity policies on sustainable development and ethics, particularly the whistleblowing procedure that applies to all duty of vigilance issues.