

The One MAESTRO framework requires the Group's operational entities to deploy **procedures to manage stakeholder grievances** related to the Subsidiary's activities (excluding business claims). This provides residents and local communities with a preferential channel to voice their concerns and grievances. Handling these grievances locally makes it possible to offer a response to anyone who feels that they have been negatively affected by the Activities and to improve internal processes in order to reduce impacts that may be caused by the Activities. Managing grievances consists of:

- Informing the stakeholders of this free process;
- Receiving and registering grievances;
- Acknowledging receipt of the grievances and informing the stakeholders about the follow-up actions;

3.6.7 Monitoring procedures

Multi-disciplinary committees review the implementation of measures within their purview. Indicators are used to measure the effectiveness of the measures, progress made and to identify ways of improvement.

Committees

The Ethics Committee is closely involved in monitoring compliance with the Code of Conduct and can be called upon for advice on its implementation.

The **Human Rights Steering Committee** is made up of representatives from different departments (including security, procurement and societal) and business segments. It is chaired by the Group's head of *Civil Society Engagement*. It meets four times a year to coordinate the actions on human rights and fundamental freedoms taken by the business segments and the Subsidiaries, as part of the implementation of the human rights roadmap submitted to the Executive Committee. All **country chairs** contribute to this monitoring process, notably by acting as the local point of contact for the Security division with respect to compliance with the VPSHR.

Representatives of the Management Committee of Total Global Procurement and of the Civil Society Engagement, HSE and Legal divisions as well as of the Ethics Committee are invited at least once a year to participate to the **Responsible Procurement Committee** which monitors the implementation of the Group's Responsible Procurement roadmap. The roadmap defines TOTAL's guidelines for

3.6.8 Implementation report⁽¹⁾

3.6.8.1 Human rights

This section is primarily intended to present implementation of measures with respect to Subsidiaries, while the implementation of measures specific to Suppliers is described at point 3.6.8.5 of this chapter.

Mapping

As part of the assessment of the local societal context of Subsidiaries, which is based on dialogue with stakeholders (authorities, neighbouring communities, local business players or civil society), the internal Stakeholder Relationship Management methodology (SRM+) is deployed in most Subsidiaries and is being gradually rolled out in recently incorporated or acquired subsidiaries.

Subsidiary assessments

TOTAL carries out different types of assessments:

- Human rights and ethics assessment of Subsidiaries, in particular regarding the working conditions of TOTAL employees,

- After any necessary internal research, proposing a means of settling the grievances in collaboration with the stakeholders;
- Monitoring the handling of the grievance and analyzing it to see where improvements can be made.

These mechanisms can also be used to implement the **VPSHR**. In addition, **in the event of an incident, a reporting process** requires the Security division to be informed, that an internal analysis be performed to establish the facts resulting in a report. This allows the Subsidiary to re-assess its VPSHR process and to take measures to reduce the risk of incidents.

2019-2023 in terms of respecting human rights throughout the supply chain, environment and economic development.

The HSE division has set up cross-functional committees of experts, including in the fields of safety, the environment and crisis management, and monitors the ongoing coordination of HSE issues (see point 3.6.8.2 in this chapter).

Reporting

Internal reporting and indicators for monitoring implementation of the actions undertaken in the Group in the areas of human rights, safety, health and the environment is based:

- for social indicators (including health), on a guide entitled the *"Corporate Social Reporting Protocol and Methodology"*;
- for safety indicators, on a Group rule regarding HSE event and statistical reporting; a return on experience analysis process identifies, notably, events for which a formalized analysis report is required in order to draw lessons in terms of design and operation; and
- for environmental indicators, on a Group reporting procedure, together with activity-specific instructions.

Consolidated objectives are defined for each key indicator and reviewed annually. The business segments apply these indicators as appropriate to their area of responsibility, analyze the results and set out a plan of action.

- Impact assessments to analyze the issues and societal context of industrial projects,
- Specific Human Rights assessments,
- Subsidiary self-assessments.

In 2019, **human rights and ethics assessments** were conducted in seven Subsidiaries representing 2,700 employees (Egypt, Brazil, South Korea, Russia, Nigeria, Cameroon). These entities were identified, in particular, on the basis of criteria related to each country's human rights risks. Entities were identified according to several criteria, including indicators of levels of risk of human rights violation in each country, the date of the previous assessment of the Subsidiary and the number of alerts received the previous year. These assessments were conducted by Good Corporation⁽²⁾. They help identify Subsidiaries' best practices, allow them to be shared within the Group and identify areas for improvement. For example, recommendations covered supplier relations and support for projects. The Group uses these assessments as an opportunity to verify knowledge of Code of Conduct, to encourage its employees to voice any ethical concerns in a confidential manner

(1) In accordance with Article L.225-102-4 of the French Commercial Code, the report on the effective implementation of the Vigilance Plan is presented below. Since the identification of risks and the prevention of severe impacts on human rights, human health and safety and the environment overlap partially with certain risks covered in the non-financial performance statement (refer to chapter 5), TOTAL has chosen to report below on the implementation of its Vigilance Plan by incorporating certain aspects of its non-financial performance statement although the latter includes risks of varying degrees.

(2) An independent third party - This British company proposes assessment and advisory to its customers on ethical and compliance-related matters.

and report behavior potentially contrary to the Code of Conduct. These assessments confirmed that the Code of Conduct is known by Group employees. The implementation of the Subsidiaries' action plans is monitored. Following Good Corporation's assessment in Brazil in 2019, anti-discrimination training helped raise the awareness of more than 200 Group employees.

When a new **industrial project** is developed, an **initial impact assessment** is conducted in advance to identify potentially affected stakeholders and to describe and assess the main socio-economic and cultural issues in the impacted area. It is complemented by societal impact assessments that measure and analyze –actual and potential impacts, positive and negative, direct and indirect, in the short, medium and long term– of the project. In 2019, eight assessments were conducted, seven by Exploration & Production and one by Integrated Gas Renewables and Power (Benin).

Example: Tilenga and EACOP projects, Uganda and Tanzania

The development of the Tilenga project (oil development project in Uganda: crude oil treatment plant, underground pipelines and infrastructures) and the EACOP project (an oil pipeline across Uganda and Tanzania carrying oil to the port of Tanga) involved the purchase of land to build infrastructure. These projects were designed to minimize relocation and ensure that people concerned were informed and involved in the implementation of the projects, and ultimately were able to enjoy satisfactory living and working conditions. These plans are regularly monitored by the Group's project team.

Land acquisition in Uganda by the Ugandan government

The voluntary sale and resettlement process is conducted in line with accepted international standards, including of the IFC (International Finance Corporation – World Bank Group). Affected people are invited to declare their property (lands and crops) in order for an offer of compensation to be proposed by the Subsidiaries' contractor. Compensation covers both the land value and subsistence. The amount of compensation must be approved by the Ugandan government.

- The land value assessment is based on compensation rates established by an independent entity appointed by the Ugandan authorities. Several market studies carried out by the Subsidiary and an independent committee are used.
- The crop value assessment is based on compensation rates proposed to an independent entity appointed by the Ugandan government, by the committees of representatives of the District's residents, and on market studies carried out by the Subsidiary and an independent committee.

Affected persons may choose between monetary compensation or compensation in kind. For compensation in kind, special attention is paid to the choice of alternative land to ensure that access to infrastructure (main roads, schools, water networks, medical centers) is maintained or improved.

Questions were raised in relation to the "cut off" date, as part of the land acquisition process, and the proper understanding of this date by the affected population. Indeed, in line with certain international standards⁽¹⁾, a cut-off date for eligibility was established. After that date, no further improvements to land can be taken into account in calculating compensation. However, even after this date, people concerned are encouraged to continue to cultivate their land until receipt of a notice to vacate. Different means were used to give details on the effects of this date (notice boards, radio announcements and local newspapers advertisements). However, following feedback that the "cut-off" date may have been misunderstood, during the summer 2019, the Subsidiary took additional measures.

In addition to these societal impact assessments, **assessments of human rights impacts** may also be carried out in higher-risk areas or conflict zones with the support of independent experts, including the Danish Institute for Human Rights, a Danish public non-profit organization. These assessments identify stakeholders, people and communities that may be affected by the project, and particularly those that are vulnerable to human rights impacts, measure the potential positive and negative impacts, propose measures to mitigate negative impacts and measures to maximize the positive impacts. These factors can then be taken into consideration in the definition of the project or the execution of the operations.

As an example in 2019, the Group responded to specific questions raised by external stakeholders in relation to two projects: the Tilenga and EACOP in Uganda and Tanzania, and the acquisition of assets in Mozambique.

Several relocation plans were made in accordance with the progress of the project.

A total of 622 persons, including owners and occupants, were affected by the **first relocation plan** for Tilenga. Thirty-one opted for compensation in kind: one owner of land without a house and 30 homeowners, who will be rehoused under similar or better conditions. 582 persons opted for financial compensation, the amount of which was determined on the basis of studies by independent experts and approved by the relevant authorities.

Other measures have been implemented to support local communities, and more are planned. A support program ("livelihood restoration") has been implemented. This is an ongoing initiative to support people concerned, by proposing training and activities linked to agriculture, supporting families in managing their budget, contributing to the improvement of their quality of life through access to education, health, and water, helping to diversify household income sources by helping individuals acquire skills to pursue opportunities in the oil and tourism industries, etc.

Impact assessments

Environmental and societal impact assessments (ESIA) of the Tilenga and EACOP in **Uganda-Tanzania** were conducted with external experts. These were widely communicated and made available to stakeholders. These assessments were conducted in accordance with domestic and international standards, including those of the IFC (International Finance Corporation – World Bank Group) in particular. They entailed questioning almost 70,000 people in Uganda and Tanzania. The assessments covered environmental aspects, such as biodiversity, water, soil and landscapes, as well as societal aspects, and in particular, local life styles, land and the health and safety of local workers. The ESIA's were approved by the competent authorities.

Dialogue with local stakeholders – Community Liaison Officers (CLO) – Grievance mechanisms

In 2019 in Tanzania, a team of 30 CLOs conducted more than 2,800 meetings on the EACOP project and interviewed more than 50,000 people in 226 villages and 533 hamlets. In parallel, quarterly meets were held with the regional authorities concerned and a monthly information letter regularly informed the authorities of the status and activities of the project.

In Uganda, a team of 35 CLOs is in permanent contact with local communities.

A grievance mechanism has also been set up at the local level.

(1) Fifth standard of the International Finance Corporation (IFC), an institution of the World Bank Group focused on private sector, regarding land acquisition and involuntary resettlement.

Impact on heritage

A team of archaeologists from the University of Dar es Salam assisted the project teams during the geophysical and geotechnical acquisition, resulting in adjustments to the acquisition zones and unexpected discoveries of pottery shards and flint, which were promising for increasing knowledge of these areas.

Questions raised by NGOs

After being questioned by certain NGOs about the Group's projects in Uganda, in September 2019, TOTAL published its responses on its website, with documents explaining the socio-economic benefits of these projects for Uganda and Tanzania, the information provided to local population and the involvement of local players, the support for the local population and environmental conservation throughout the projects. In October 2019, TOTAL S.A. received a summons to appear before the *Tribunal judiciaire* of Nanterre (local French civil court), at the behest of two French NGOs and four Ugandan NGOs, regarding the content and the implementation of the Vigilance Plan. On 30 January 2020, the *Tribunal judiciaire* declared itself incompetent in favor of the *Tribunal de commerce* (local French commercial court), as requested by TOTAL S.A.

Continuous improvement of internal processes

As part of its approach to continually improve its internal processes, verifications were carried out by TOTAL teams and an independent analysis was conducted in November 2019 at TOTAL's request. These revealed that the Subsidiary had followed procedures to mitigate the risks related to access to the land required to build the infrastructures for the Tilenga project.

Example: Mozambique LNG Project

TOTAL finalized the acquisition of a 26.5%⁽¹⁾ interest, previously held by Anadarko, in the Mozambique LNG project in September 2019. A Subsidiary of the Group is the new operator of the Mozambique LNG Project.

Mozambique LNG is the first onshore development of a liquefied natural gas (LNG) plant in the country.

The Subsidiary is working on the basis of work done by the previous operator and its partners, with the aim of implementing this project in the best interest of all actors concerned, including the government and population of Mozambique.

Context

This project is part of a global plan for economic development and transformation of the region of Cabo Delgado and of Mozambique. It involves many stakeholders, including intergovernmental development agencies. Land acquisitions and the implementation of relocation and livelihood restoration programs for the Afungi peninsula's population are required.

Impact assessments

The societal and environmental impact assessment began in 2011 and was approved by the government of Mozambique in 2014, since then it has been periodically updated.

A first human rights impact assessment was carried out in 2015. A new human rights impact assessment is currently being conducted.

Societal and stakeholder engagement team

The local societal team is made up of more than 100 persons, engaged in the different neighboring communities, including a CLO network which has an excellent local relationship with residents. A grievance mechanism has been put in place. It is accessible and used by local communities.

The HSE division assists the local societal team. An on-site mission was conducted in November 2019, and others are planned in 2020.

Relocation and livelihood restoration plans

The relocation plan was approved by the government of Mozambique in 2014.

This project is monitored by third parties:

- The government set up a resettlement committee which monitors the project on an ongoing basis. The Mozambique Human Rights Commission is also involved in a monitoring process of the project;
- There is also a civil society platform coordinated under the coordination of Mecanismo de Apio a Sociedade Civilis (MASC), a Mozambican organization. This forum will conduct independent monitoring, through visits of the area and meetings with stakeholders, and will issue a monitoring report. The international standards set by the IFC (International Finance Corporation – World Bank Group) were presented to the platform, in order to support the capacity building of these organizations regarding large industrial projects.

The relocation plan is currently being implemented in accordance with the IFC international standards for the management of social and environmental risks.

A village and related facilities (water, electricity, education institutions and healthcare) for around 600 families are currently being built. Approximately 160 families have been resettled to date, and the process will continue in 2020.

In parallel, a livelihood restoration program is ongoing to support impacted households. This support is implemented in collaboration with specialized partners (fishing and farming professional training, other professional skills, etc.).

Access to agricultural land is also being provided to impacted households.

Working conditions

The Subsidiary monitors issues such as workers housing, working conditions, hiring processes and wages. In addition to the Subsidiary personnel, approximately 35 companies (national and international) work on the construction site of the LNG plant, which amounted, at the end of 2019, to about 6,500 workers, of which 90% are Mozambican and more than 1,000 come from neighboring communities. Some positions are offered in priority to local communities.

(1) TOTAL, operator, holds a share of 26.5 % in the Mozambique LNG project, and partners with ENH Rovuma Area Um. S.A. (15 %), Mitsui E&P Mozambique Area1 Ltd. (20 %), ONGC Videsh Ltd. (10 %), Beas Rovuma Energy Mozambique Limited (10 %), BPRL Ventures Mozambique B.V. (10 %), and PTTEP Mozambique Area 1 Limited (8.5 %).

An ONG report was published on 7 November 2019 raising a number of questions relation to the Balhaf (Yemen) site, operated by Yemen LNG. This company, in which TOTAL holds a 39.62% share, is not controlled by TOTAL, and therefore falls outside the Vigilance Plan. Nevertheless, given that this was reported by the press, TOTAL decided to provide the following clarifications in a press release dated 7 November 2019:

In addition to Subsidiary and industrial project assessments, two types of **subsidiary self-assessment** are used.

VPSHR self-assessment and risk analysis tools are deployed annually, in particular in the Subsidiaries located in countries identified as being at higher risk.

In the field of **societal governance**, a self-assessment questionnaire is used to measure the extent of deployment of societal governance in the field. These questionnaires are analyzed by the HSE division in order to adapt the support it provides to Subsidiaries (offers of training, assistance, etc.). In 2019, more than 90% of the Subsidiaries within the One MAESTRO perimeter had used the questionnaire.

Actions to mitigate risks and prevent serious impacts

TOTAL has numerous tools to **raise employee awareness** of issues related to human rights.

In 2019, the Group organized **training tailored to the challenges faced in the field** by employees who are particularly exposed to these issues:

- annual training in human rights for the Group's societal experts, including the Community Liaison Officers (CLOs), at their annual seminar;
- annual training for members of the Human Rights Steering Committee (HRSC) by the Danish Institute for Human Rights;
- annual training in ethics and human rights for newly appointed senior executives (32 participants in 2019);
- as of 2019, a dedicated module is integrated into the e-learning training for the Country Chairs for the Group's 112 representatives worldwide;
- two training courses in the United Kingdom on the 2015 UK Modern Slavery Act, in particular for in-house lawyers of that country's subsidiaries, in partnership with SHIFT (36 participants).

In response to the key issues related to the Group's activity, specific training courses on Human Rights at the workplace have been developed, such as the e-learning course on the Fundamental Conventions of the ILO, launched by a member of the Executive Committee on Business Ethics Day in 2019, the year of the ILO's 100th anniversary. This training is mandatory for all the Group's management personnel.

Specific training is given to managers and operational personnel in charge of societal matters, such as "The basics of societal engineering" (two sessions in 2019, with 30 participants), or advanced and specific training modules Exploration & Production operations (two sessions in 2019 in Nigeria with 20 trainees).

In certain situations, intervention by **government security forces or private security providers** might be necessary to protect Subsidiary staff and assets. In order to prevent any misuse of force, the Group's requirements include the training of employees and security staff.

When government security forces are deployed to ensure the protection of the Group's staff and assets, an ongoing **dialogue** is maintained with the representatives of national or regional authorities in order to raise their awareness on the need to respect the VPSHR and encourage them to sign memorandums of understanding that comply with these principles. The Group **promotes** the VPSHR requirements to the private security

companies it hires in connection with its activities. These companies incorporate them, for example, through the training they provide to security staff.

TOTAL organizes **training sessions and awareness-raising actions dedicated to the VPSHR** for its employees and stakeholders, and more particularly, on the risk of misuse of force. At the 2019 Business Ethics Day, the Security division organized presentations about the VPSHR to raise awareness amongst TOTAL's employees.

In 2019, the Security division gave a VPSHR seminar to 27 security employees worldwide.

In addition to this seminar, there were training courses at the Subsidiaries for private security companies (PSC) and awareness-raising activities for governmental security forces (GSF). These activities organized by each Subsidiary took place, for example, in the Democratic Republic of the Congo (people trained: 563 PSC and 189 GSF), in Uganda (people trained: 51 PSC), in Papua New Guinea (people trained: 13 PSC and 27 GSF), in Gabon (people trained: 110 PSC) and in Angola (people trained: 458 PSC). The Security division also helped the Subsidiaries develop training adapted to the local context. In addition, the subsidiaries may take additional local VPSHR initiatives. For example, a Subsidiary in Nigeria produced a VPSHR training video that has since been widely distributed to other Subsidiaries facing the same types of complex situations.

The annual **Business Ethics Day** is organized by the Subsidiaries all over the world. In 2019, the *Business Ethics Day* was held in December on International Human Rights Day. The theme of the event was "Speak Up", in an effort to combat all forms of discrimination in the workplace. 2,000 people logged into a specially organized chat session and more than one hundred questions were asked.

Whistle-blowing mechanisms

TOTAL has set up several levels of whistle-blowing mechanisms that cover the entire Group, or are specific to certain projects.

In 2019, the **Ethics Committee** handled almost 190 referrals (**internal, external, anonymous**) in relation to compliance with the Code of Conduct. 50% of these reports were about questions related to human resources. Approximately one third of the cases result in corrective measures. Irrespective of whether the referral is well founded, mediation may be necessary. When the Ethics Committee observes a breach of the Code of Conduct, management draws the necessary conclusions and sanctions may be imposed in keeping with the applicable law and the procedures negotiated locally with staff representatives (examples include verbal reminders, written warnings, suspension or dismissal). In parallel, a new tool to centralise statistics gathered by the network of ethics officers was launched in 2019. It covers referrals that are handled locally and is currently being deployed.

The Subsidiaries have also developed **mechanisms to manage grievances raised by external stakeholders**. Deployment is being rolled out throughout the Group.

- At Exploration & Production for example, the Bolivian subsidiary made changes to its grievance management system in 2019 as part of a continual improvement process. Strict deadlines were introduced to analyze the grievances, based on the average processing time: 30 days for simple cases, and 45 days for complex cases, which are handled by the grievance management committee. 27 complaints were registered in the year, of which five through this committee. All the registered complaints were processed and resolved in the course of the year. A plan to inform the stakeholders of the procedure was also drawn up, with a new, graphically styled brochure that illustrates the steps to be followed to access the mechanism.

- At Refining & Chemicals, grievance management systems are in place on all the ISO 14001-certified platforms, and local residents are involved in searching for solutions to control the impacts of activities.
- At Marketing & Services, a kit has been developed to help Subsidiaries set up dedicated grievance mechanisms that are separate from the business grievances circuit. In particular, it contains a recap of the useful internal documents, with the direct intranet links, an explanation of steps to be followed to set up a grievance management system in a Subsidiary, to identify the internal contributors, etc.

Incidents related to the implementation of the VPSHR are quickly reported to the Security division, and a report is compiled after internal analysis to assess the facts and to determine the measures to be taken to reduce the risk of future incidents.

Monitoring procedures

At regular intervals, a **human rights roadmap** is presented to the Executive Committee, highlighting the priority improvement areas. The 2019-2020 roadmap was presented to the Executive Committee in April 2019. The **Human Rights Steering Committee** is responsible for monitoring the implementation of this roadmap. For each specialty or business segment, the roadmap addresses questions of governance (for example, an internal procedure to be updated), new training to be developed, the prioritization of salient issues in a given specialty or segment, dialogue with stakeholders (for example, by appointing and training CLOs), risk assessment (for example, in the impact assessments of new projects), preventive and remediation actions, monitoring and communication. The Human Rights Department and the Ethics division rely on a **network of Ethics officers** (104 worldwide at the end of 2019) in charge of promoting the values set out in the Code of Conduct among employees working in Subsidiaries and ensuring that the Group's commitments are correctly implemented at the local level.

Regarding the **VPSHR**, TOTAL took part in **follow-up** meetings with the other members of the initiative as part of the process of continual improvement. In February 2019, TOTAL published its 2018 VPSHR report, which contains information on the implementation of VPSHR in Subsidiaries worldwide, and reviews progress made. The information set out in the report is based on annual reporting organized by the Security division that brings together the results of a VPSHR questionnaire, and of the risk and compliance analyses for each Subsidiary operating in a sensitive context. It contains examples of action taken to raise awareness and process incidents. The 2019 VPSHR report will be published in 2020. In April 2019, at the 13th forum on responsible mineral supply chains, organized by the OECD in Paris, TOTAL shared its experience of implementing the VPSHR.

3.6.8.2 Health and safety

This section is primarily intended to present implementation of measures with respect to Subsidiaries, while the implementation of measures specific to Suppliers is described in 3.6.8.5 of this chapter.

Subsidiary assessments

In addition to HSE self-assessments by Subsidiaries at least once every two years, the Group also audits sites operated by Subsidiaries at least once every five years. Based on an analysis of repeated findings, auditors pay specific attention to global risk management, how risks are taken into account in operations, and the involvement of management.

Actions to mitigate risks and prevent serious impacts

Prevention of major industrial accidents

For the Group's operated Activities, accident risk management systems are in place from the early stage of design and construction of facilities or any modifications to these, as well as during the conduct of activities. They also cover control of integrity of the installation over time as well as the effective and appropriate management of accidents if these do, nevertheless, occur.

As part of the risk prevention of major industrial accidents, with regard to the design and construction of facilities, the Group has defined technical standards which include applicable statutory requirements and refer to good industry practices.

In addition to applying these standards, the Group implements a policy for the management of the risk of major industrial accidents in order to minimize the potential impacts associated with its Activities. This policy provides for an analysis of the risks related to the Group's industrial operations at each operated site, based on incident scenarios for which the probability of occurrence and the severity of the consequences are assessed. Based on these parameters, a prioritization matrix is used to determine whether further measures are needed. These mainly include preventive measures but can also include mitigation measures and may be technical or organizational in nature.

The construction of the Group's facilities is entrusted to qualified contractors that undergo a demanding internal selection process and ongoing monitoring. In the event of a modification to a facility, the Group's rules define the management process to be adopted.

With regards to the management of operations and integrity of facilities, the Group has defined rules to prevent specific operating risks that have been identified either by means of risk analyses or by feedback from the Group and industry. For works in particular, the preliminary risk analysis may lead to the establishment of a permit to work, the process of which, from preparation to closure, is defined. The Group's rules also provide a process to manage the integrity of facilities, which includes preventive maintenance, facility inspections, identification of safety critical equipment for special monitoring, management of anomalies and downgraded situations, as well as regular audits. These rules are part of the Group's One MAESTRO reference framework. Operational teams receive periodic training with a view to controlling operations, in the form of companionship or in-person trainings.

In addition to support from the Major Risk division, the Group requests Subsidiaries' operating sites with the potential for a major industrial accident to identify an integrity function to manage this transverse process.

HSE training

Preventive actions in the field of health, safety and the environment require all employees to adhere to the Group's safety policies. To this end, the Group provides **training intended for various target groups** (new arrivals, managers, senior executives and directors) in order to establish a broad-based, consistent body of knowledge that is shared by all:

- **Safety Pass**: these safety induction courses were started on January 1st, 2018, for new arrivals within the Group. Various courses exist depending on the position and cover the Company's main HSE risks, the risks linked to specific activities on site as well as those linked to the workplace. The theoretical content is supplemented by practical "life-saving" training sessions;

- *HSE for Managers* is aimed at current or future operational or functional managers within one of the Group's entities. Sessions are offered on all continents where TOTAL operates. In 2019, seven sessions, including four held internationally, brought together more than 287 managers;
- *Safety Leadership for Executives* is intended for the Group's senior executives. Its objective is to give senior executives the tools to communicate and develop a safety culture within their organization. The updated version of this course was validated during pilot sessions held in 2019. Five sessions were attended by more than 85 senior executives in 2019. The target is for all senior executives to have taken the new training within three years.

In order to ensure and reinforce knowledge of HSE framework documents, a tool designed to evaluate HSE-related knowledge and containing over 3,000 multiple-choice questions was developed in 2018 for use by the Group's HSE managers. This tool makes it possible to assess their knowledge and decide on a suitable training plan, if necessary. In 2019, 125 managers took part in this knowledge assessment, which corresponds to about half of the target population. The goal is to have the entire population assessed within three years.

These trainings are complemented by local actions in the Subsidiaries, which take into account the specificities of their Activities.

In addition to the training measures, the Group HSE division is responsible for **regular communication and coordination of HSE-related topics**. Each month, central experts and specialists communicate on rules and good practices, both internal and external. In addition, 24 seminars, webinars or symposia involving the Group's Subsidiaries were led by the HSE division in 2019.

On April 26, 2019, TOTAL teams all over the world joined in the **World Safety Day**, on the theme of "Target: zero fatal accidents". The suppliers present on their sites were also involved in this event.

Furthermore, the Group extended its **training program on managing risks of major accidents in 2019**. The training of operational teams was stepped up. On-site training in the Subsidiaries was added to in-person training provided at head office. For example, in the Marketing & Services business segment, the course on *Understanding of Major Risks and Integrity* on major risks was attended by more than 500 participants at 44 Subsidiaries between mid-2018 and the end of 2019.

Training on crisis management was followed by 349 persons in 2019. The training was entirely revised in 2019. The new complete course will include a preliminary e-learning module, a two-day in-person training session, a subsequent mobile learning module, as well as a one-day refresher course to be completed later. In addition, a "60-minute flat" application was gradually deployed in 2019. It is available on mobile phones, including offline, and allows participants, by going through a training based on a "crisis scenario", to revise the essentials learned in the e-learning module and the initial training, in a fun and interactive way. The course ranks the trainees to encourage them to reach the highest possible score, ensuring essential learnings have been assimilated. This application won a prize at the 2019 Mobile Learning Awards, which reward the best mobile training content.

In addition, the Group started to roll out the Incident Management System (IMS) in the Exploration & Production Subsidiaries in 2019. The IMS is a harmonized system for the management of emergency situations. It is described in an IPIECA good practices guide. In 2019, seven Exploration & Production Subsidiaries received training and performed a large-scale exercise implementing the system. A total of 314 employees have been trained in the Subsidiaries and at head office.

Return on experience (feedback) on HSE incidents is regularly collected. A return on experience document describes the HSE incident or the corresponding accident, includes an analysis and recommendations applicable to similar situations. In 2019, 111 documents (return on experience, best practices, alerts) were distributed in the Group. Best practices were also shared externally to help disseminate the safety culture and contribute to the improvement of the energy business segment, for example at the CEFIC (the European Chemical Industry Council), the *Ecole Nationale des Mines* of Alès, the International Association of Oil & Gas Producers (IOGP) and at the Bahrain Global HSE conference.

In 2019, TOTAL contributed to the creation and the development of the content of a **"ToolBox" application**, available on computers, smartphones and tablets, developed with the Energy Institute and other industry actors. It provides users with lessons learned from different situations and information on safety. The content can be viewed by type of activity or risk.

Monitoring procedures

The Group keeps track of the following health and safety indicators:

- confinement losses,
- safety indicators, including the TRIR (Total Recordable Injury Rate),
- the number of serious road accidents,
- health indicators.

The Group reports the number of Tier 1 and Tier 2 **losses of confinement** as defined by the American Petroleum Institute (API) and the International Association of Oil & Gas Producers (IOGP)⁽¹⁾. The Group set itself the aim of having fewer than 100 Tier 1 and Tier 2 events in 2019.

This target was comfortably met in 2019. In addition to the 73 Tier 1 and Tier 2 operational events indicated in the table below, the Group recorded 2 Tier 2 events due to sabotage or theft in 2019.

Loss of primary containment ^(a)	2019	2018	2017 ^(b)
Loss of primary containment (Tier 1)	26	30	28
Loss of primary containment (Tier 2)	47	73	75
Loss of primary containment (Tier 1 and Tier 2)	73	103	103

(a) Tier 1 and Tier 2: indicator of the number of losses of primary containment with more or less significant consequences (fires, explosions, injuries, etc.), as defined by the API 754 (for downstream) and IOGP 456 (for upstream) standards. Excluding acts of sabotage and theft.
 (b) Excluding TEP Barnett in 2017.

The Group's One MAESTRO framework covers three main areas with regards to personal safety: **the prevention of occupational accidents, the prevention of transport accidents**, and the prevention of major industrial accidents. It relates to all employees of Subsidiaries, employees of external contractors working on a site operated by one of these Subsidiaries, as well as employees of transport companies under long-term contracts. In all these areas, the safety results are monitored with the same attention for all.

Indicators measure the main results. In addition to its aim of zero fatalities in the exercise of its Activities, the Group has set itself the target of continuously reducing the TRIR⁽²⁾ and, for 2019, of keeping it below 0.85 for all personnel (Group and external contractors).

(1) Tier 1 and Tier 2: indicator of the number of loss of primary containment events, with more or less significant consequences, as defined by the API 754 (for downstream) and IOGP 456 (for upstream) standards.
 (2) TRIR: Total Recordable Injury Rate.

Safety indicators	2019	2018	2017
TRIR ^(a) : number of recorded injuries per million hours worked – All Personnel	0.81	0.91	0.88
Group company employees	0.74	0.82	0.89
External contractors' employees ^(b)	0.88	1.01	0.88
LTIR ^(c) : number of lost time injuries per million hours worked – All Personnel	0.48	0.59	0.58
SIR ^(d) : average number of days lost per lost time injury	34	26	28 ^(e)
Number of occupational fatalities	4	4	1

- (a) TRIR: Total Recordable Injury Rate.
(b) As defined in point 5.11 of this chapter.
(c) LTIR: Lost Time Injury Rate.
(d) SIR: Severity Injury Rate.
(e) Excluding Saft Groupe.

The efforts with regard to safety made by the Group over a period of more than 10 years have made it possible to reduce the number of accidents by a factor of four between 2009 and 2019. Following a stabilization in performances observed in 2016 and 2017, the year 2019 saw a 11% reduction in the number of accidents compared to the results for the previous year. This improvement is due to the Group's constant efforts in the field of safety and in particular, to:

- the implementation of the HSE frameworks, which are regularly updated and audited,
- the prevention of specific risks that are particularly liable to lead to accidents, such as handling loads (ergonomics), road transport, foot traffic,
- training in and general familiarization with safety issues for all levels of management (world safety day, special training for managers),
- the HSE communication work, towards all Group personnel,
- the introduction of safety objectives into the compensation policy for Group employees (refer to point 5.3.1.2 in chapter 5).

The SIR raise between 2018 and 2019 is explained by an increase in accidents with a number of days off more than 30 days especially in the M&S segment and a decrease in the number of accidents with a number of days off less than 10 days especially in the Integrated Gas, Renewables & Power segment.

Despite these measures, four fatalities occurred in 2019 among the personnel of contractors, during construction work or maintenance operations in Belgium, France, the United States and South Korea. All were related directly or indirectly to work performed at height: fall from a mobile platform while working on a pipe (Belgium), fall from a work floor following the breakdown of a guardrail (France), fall from a stepladder while disassembling equipment (USA), fall from a roof ongoing repairs (South Korea).

These fatalities have led the Group to update the One MAESTRO rule concerning working at height, and to focus specifically on reaching a new milestone in the prevention of fatal accidents and on achieving "Zero fatal accidents" in the Group. As they are particularly affected, representatives of contractors took part in the corresponding discussions together with operational employees and Group safety experts. Three high-priority areas have been identified in which the Group intends to strengthen its efforts:

- the incorporation in the permit to work process of a ritual to be performed prior to undertaking work at the Group's operated sites (*Safety Green Light*);
- the conduct of joint on-site safety inspections together with the contractors;
- the intensification of checks on site in order to measure compliance with the safety rules.

The progressive implementation of these measures at the sites operated by Subsidiaries, accompanied by familiarization campaigns to draw attention to the most widespread risks of fatal injury, started in the final quarter of 2019.

In addition, following a fatal accident associated with the explosion of a reservoir in Egypt in October 2018, the Group rapidly decided to roll out a large-scale accident prevention program focusing on the presumed causes of the accident, in anticipation of the investigation conclusions. Following webinar awareness-raising sessions, special training in the risks associated with work at oil tanks was deployed with the involvement of approximately 3,500 participants from 90 countries. This program ended in mid-2019 with the distribution of a feedback document for immediate and mandatory application throughout the whole of the Group.

In the field of **occupational safety**, the Group also introduced, in 2010, the document *Safety at work: TOTAL's Twelve Golden Rules*. According to the Group's internal statistics, in more than 32% of severe incidents or near misses with high severity potential in the workplace, at least one of the Golden Rules had not been followed. The correct implementation of these rules, and more generally of all occupational safety procedures, is emphasized during trainings and verified through site visits and internal audits.

The involvement of each employee in identifying anomalies or dangerous situations is an indicator of the employees' involvement and vigilance in accident prevention and reflects the safety culture within the Group. The reporting of anomalies and near-misses is strongly encouraged and is monitored (approximately 700,000 per year).

In addition, in 2016, the HSE department created a unit bringing together specialists on high-risk operations (work at height, lifting, high-pressure cleaning, excavations, etc.) in order to consolidate in-house knowledge and relations with contractors. The Group HSE division also includes a unit aimed at providing support for sites to improve their safety culture upon their request.

In the field of road transport, the Group long since adopted a policy intended to reduce the number of accidents by applying standards that are, in some cases, more stringent than certain local regulations. This policy applies to the Group's personnel and contractors. For example, it comprises a ban on telephoning while driving, including with a hands-free set, a ban on using motorized two-wheeled vehicles for business travel, mandatory training for drivers, and the definition of strict technical specifications for vehicles. Additional requirements are defined depending on the level of road traffic risks in the country in question and the nature of the activity. Thus, in countries with high road traffic risks, vehicles are equipped with devices that record driving parameters and the conduct of drivers is monitored. Since 2012, a large-scale inspection program of transport contractors has also been rolled out by Marketing & Services. This calls on independent transport experts who inspect the practices and processes adopted by transport contractors with regard to the recruitment and training of drivers, vehicle inspections and maintenance, route management, and the HSE management system. Depending on the results of the inspection, the transport contractor may be included in or excluded from the list of transporters approved by the Group. This program is gradually being extended to the Group's other business segments as required. Furthermore, a training center exists since 2015 in Radès in Tunisia. It offers transport trainings to the personnel of Marketing & Services Subsidiaries and to transport contractors that are interested.

To measure the results of its policy, the Group has, for many years, been monitoring the number of severe accidents involving its employees and those of contractors. The 27% reduction in the number of serious injuries between 2016 and 2019 is a testimony to the efforts that have been made. In 2019, the number of serious road incidents increased compared to 2018. However, there were no road fatalities.

The projects launched in 2018 on the use of new technologies for the prevention of road accidents were continued in 2019. In Marketing & Services, a new action plan has been introduced covering the fields of the driver behavior, vehicles and preparation for emergency situations. In particular, the decision was taken to outfit more than 2,500 vehicles with fatigue detection systems following conclusive tests performed over a period of several months. In addition, the second part of the SafeDriver video campaign was launched in 2019. The subjects chosen for 2019 were blind spots, driver tiredness and driving in difficult situations.

Example: Improving road safety, positive influence on contractors

Accidents involving trucks transporting TOTAL products account for a significant percentage (14%) of serious high-potential accidents recorded by the Group. The number of road accidents has declined significantly over recent years following the Group's efforts to improve road safety.

Since the Group itself rarely transports its products by road, it decided to liaise closely with its transport contractors to consider means to help reduce the numbers of accidents.

In 2012, the Marketing and Services segment launched a major Transporter Compliance Inspection program (TCI) in Africa and the Middle-East, identified as high-priority areas.

As part of TCI, the efforts of the inspection teams, made up of internal specialists and independent transport experts, led to the identification and disqualification as potential contractors of highest-risk transporters, and the definition of action and improvement plans for transporters qualified as potential contractors. The program defined requirements and good practices, including: regular inspections, monitoring by

Number of severe road accidents ^(a)	2019	2018	2017
Light vehicles and public transport ^(b)	9	7	11
Heavy goods vehicles ^(b)	24	23	26

(a) Overturned vehicle or other accident resulting in the injury of a crew member (declared incident).

(b) Vehicles on long-term contract with the Group (> 6 months).

Subsidiaries of the progress of action and improvement plans, and monitoring of consolidated results. All of which were structured around four pillars: driver management, vehicle management, trip management and HSE management.

The TCI program established a clear roadmap for transport contractors and deployed concrete tools to help improve safety: onboard computers, onboard cameras, vehicle inspection checklists, fleet renewal, partnerships for driver training, a points-based "driving license" as a pre-requirement to drive for the Group.

In 2017, the program was extended to other Marketing & Services areas (Asia-Pacific, Latin America) and, in 2018, to other business segments of the Group.

The program has yielded results: a clear improvement in the quality of the transporters in the area and a significant drop in the number of fatalities caused by heavy goods vehicles (five-fold drop in five years) as well as serious road accidents involving heavy goods vehicles (three-fold reduction in the Marketing & Services segment since the launch of the TCI program).

With regard to **air transport**, a carrier selection process exists to limit the risks relating to travel by Group and contractor's employees, if their journey is organized by the Group. This process is based on data provided by recognized international bodies: the International Civil Aviation Organization (ICAO), the IATA Operational Safety Audit (IOSA), the International Association of Oil and Gas Producers (IOGP), and civil aviation authority recommendations. Airlines that do not have a rating from an international body are assessed by an independent body commissioned by the Group.

With regard to the prevention of occupational health risks, the Group ONE MAESTRO framework provides that Subsidiaries identify and assess risks at the workplace in the short, medium and long term and also provides guidance for implementation. The analysis of these health risks relate to chemical, physical, biological, ergonomic and psychosocial risks resulting in the roll-out of an action plan. In addition, it requires that each Group entity sets out a formal medical monitoring procedure taking into account the requirements under local law (frequency, type of examination, etc.) and the level of exposure of its personnel to the various risks.

To complement this program, the Group has set up an employee health observation committee. The aim is to monitor the health of a sample of employees in order to identify the emergence of certain illnesses and, if applicable, suggest appropriate preventive measures. The data, which is gathered anonymously during medical examinations, covers approximately 10% of Group employees worldwide.

The Group also has a Medical Advisory Committee that meets regularly to discuss key health issues relating to the Group's activities. It decides whether there is a need for additional health protection strategies to be implemented. It consists of external scientific experts and also brings together the Group's senior executives and stakeholders concerned by these issues.

In order to share information on the Group's progress in the area of occupational health, as for previous years, in 2019 the Group organized a day of discussions with the Group's business segments.

The Group has put in place the following indicators to monitor the performance of its program:

Health indicators (WHRS scope)	2019	2018	2017
Percentage of employees with specific occupational risks benefiting from regular medical monitoring	98%	98% ^(a)	98%
Number of occupational illnesses recorded in the year (in accordance with local regulations)	128	154	143

(a) As an exception to the reporting principles described in point 5.11 (chapter 5), the 2018 rate does not include a company that did not report its data in time for the 2018 WHRS.

3.6.8.3 Environment

This section is primarily intended to present implementation of measures with respect to Subsidiaries, while the implementation of measures specific to Suppliers is described in 3.6.8.5 of this chapter.

Subsidiary assessments

HSE audits, which include the environment, are described in point 3.6.8.2 of this chapter.

The Group's internal requirements state that the environmental management systems of its operated sites that are important for the environment⁽¹⁾ must be ISO 14001 certified within two years of start-up of operations or acquisition: 100% of these 77 sites were compliant in 2019. Beyond these internal requirements, at the end of 2019, a total of 281 of the sites operated by the Group were ISO 14001 certified. In 2019, 7 sites were newly ISO 14001 certified.

Actions to mitigate risks and prevent serious impacts and monitoring procedures

The HSE division and the HSE departments within the Group's entities seek to ensure that both applicable local regulations and internal requirements resulting from the Safety Health Environment Quality Charter and the Group's additional commitments are respected. Group steering bodies, led by the HSE division, are tasked with:

- monitoring TOTAL's environmental performance, which is reviewed annually by the Audit Committee, for which multi-annual improvement targets are set;
- handling, in conjunction with the business segments, the various environment-related subjects of which they are in charge; and
- promoting the internal standards to be applied by the Group's operational entities.

Awareness raising and training actions on the environment are included in the HSE actions described in point 3.5.9.2 in this chapter. The 2019 World Environment Day focused on good practices that protect biodiversity on the Group's sites. To mark the occasion, instructive materials were developed to teach employees more about biodiversity.

To prevent accidental pollution risks and, in particular, spills that could impact the environment, TOTAL implements risk management policies. Risk management measures cover the design and construction of facilities, changes to existing facilities, operations and the control of the integrity of facilities over time.

For its **maritime and river shipments of hydrocarbons**, TOTAL only charters ships and barges that meet the highest international standards. The Group has an internal policy that lays down the process and criteria by which ships and barges are selected (known as vetting). These criteria are based, in particular, on the regulations, best practices and recommendations of the OCIMF⁽²⁾, and, in Europe, on the European Barge Inspection Scheme – EBIS. Tankers and barges are vetted by a single centralized Group entity. The average age of the Group Shipping division's time-chartered fleet is approximately six years.

With regard to **operated marine terminals**, the Group records their physical characteristics and consolidates this data in a global database that forms part of the Marine Terminal Information System (MTIS) of the OCIMF. At the end of 2019, 95% of coastal marine and offshore terminals had submitted their characteristics, thereby making it easier to assess the compatibility of ships with ports of call. Additionally, TOTAL encourages all maritime terminals to use the *Marine Terminal Management Self Assessment* (MTMSA), the framework recommended by the industry for the self-assessment of terminals and the continuous

improvement of the safety of product transfers. A training course on ship/shore interface management (SSSCL *Ship Shore Safety Check List*) and cargo transfer operations, developed by the Group in 2016, has been completed by operators of 80% of operated-terminals by the end of 2019.

In order to prepare to manage a major accidental spill efficiently, TOTAL implemented a global **crisis management** system that is described in point 3.6.6.4 of this chapter.

For the sites operated by the Group exposed to the risk of accidental spills that reach the surface water, this system is supplemented by requirements of the **One MAESTRO reference framework**. These requirements demand that the oil spill contingency plans be regularly reviewed and tested by the Subsidiaries in exercises. These plans are specific to each site and are adapted to their structure, activities and environment while in line with Group recommendations.

Subsidiaries can call on in-house human and material resources (Fast Oil Spill Team, FOST) and benefit from assistance agreements with the main third-party organizations specialized in the management of oil and gas spills.

For **oil and gas exploration & production activities**, since 2014, subsea capping and subsea containment equipment that can be transported by air has been strategically positioned at various points of the world (South Africa, Brazil, Norway and Singapore). This equipment provides solutions that are readily available in the event of oil or gas eruptions in offshore drilling operations. From these locations, the equipment can benefit TOTAL's operations worldwide. This equipment was developed by a group of nine oil companies, including TOTAL, and is managed by Oil Spill Response Ltd (OSRL), a cooperative dedicated to the response to marine pollution by oil and gas.

TOTAL has also designed and developed its own capping system (*Subsea Emergency Response System*) to stop potential eruptions in drilling or production operations as quickly as possible. Since 2015, equipment has been installed in Angola, then the Republic of the Congo, potentially covering the entire Gulf of Guinea region. In March 2019, an item of this equipment was deployed and tested at a depth of more than 1,200 m in a large-scale exercise in Nigeria.

Oil spill preparedness	2019	2018	2017
Number of sites whose risk analysis identified at least one risk of major accidental pollution to surface water ^(a)	128	126	126
Proportion of those sites with an operational oil spill contingency plan	100%	99%	91%
Proportion of those sites that have performed at least one oil spill response exercise during the year	91%	86% ^(b)	95%

(a) The variation of the number of sites between 2016 and 2018 is due to perimeter variation
 (b) The decrease compared to 2017 corresponds mainly to two Subsidiaries where equipment was being refurbished in 2018.

In accordance with industry practices, TOTAL monitors accidental liquid oil and gas spills of more than one barrel. Spills that exceed a predetermined severity threshold are reviewed on a monthly basis and annual statistics are sent to the Group Performance Management Committee. All spills are followed by corrective actions aimed at returning the environment to an acceptable state as quickly as possible.

(1) Sites emitting more than 30 kt CO₂e per year.

(2) OCIMF (Oil Companies International Marine Forum): An industry forum including the leading worldwide oil companies. This organization manages, in particular, the Ship Inspection Report (SIRE) Programme, which holds and provides access to tanker and river barge inspection reports (Barge inspection Questionnaire – BIQ).

Accidental liquid hydrocarbon spills of a volume or more than one barrel that affected the environment, excluding sabotage

	2019	2018	2017
Number of spills	57	74	62
Total volume of spills (thousands of m ³)	1.2	0.3	0.5

Limitation of the environmental impact

Water, air

The Group's operations generate emissions into the atmosphere from combustion plants and the various conversion processes and discharges into wastewater. In addition to complying with applicable legislation, the Group drew up a guide that the Subsidiaries can use to limit the quantities discharged. More particularly, the Group set itself targets for the reduction in sulfur dioxide (SO₂) emissions and limitation of discharges of hydrocarbons into water. After analyses have been conducted, the exposed sites can introduce various reduction systems that include organizational measures (such as using predictive models to control peaks in sulfur dioxide (SO₂) emissions based on weather forecast data and the improvement of combustion processes management, etc.) and technical measures (wastewater treatment plants, using low NO_x burners and electrostatic scrubbers, etc.). Today, all the refineries owned exclusively by the Group have this type of system.

For new facilities developed by the Group, the internal rules require impact assessments to be carried out on these emissions and, if necessary, actions must be taken to limit their impact.

In 2010, SO₂ emissions reached 99 kt. The Group set itself the target of not exceeding 49.5 kt by 2020; it has met this target since 2017.

Chronic emissions into the atmosphere^(a)

	2019	2018	2017
SO ₂ emissions (kt)	39	48	47
NO _x emissions (kt)	72	66	69

(a) Refer to point 5.11 of this chapter for the scope of reporting.

SO₂ emissions that are likely to cause acid rain are regularly checked and reduced. The decrease in these emissions in 2019 is mainly due to a decrease in activity at refining units and the implementation of a more stringent policy concerning acid gas flaring by the Exploration & Production segment in the United Arab Emirates.

NO_x emissions mainly concern hydrocarbon exploration and production activities and are primarily located offshore and far away from the coast. Their impact on air quality is therefore considered to be minor. The increase in 2019 is mainly due to an increase in offshore drilling and logistics activities.

Discharged water quality

	2019	2018	2017
Hydrocarbon content of offshore water discharges (in mg/l)	13.0	14.1	17.7
% of sites that meet the target for the quality of offshore discharges (30 mg/l)	100% ^(a)	96% ^(a)	100% ^(a)
Hydrocarbon content of onshore water discharges (in mg/l)	1.7	1.8	2.4
% of sites that meet the target for the quality of onshore discharges (15 mg/l)	100%	100%	100%

(a) Alwynn site (United Kingdom) excluded, as its produced water discharges only occur during the maintenance periods of the water reinjection system and are subject to a specific regulatory authorization.

Soil

The risk of contaminated land related to TOTAL's Activities is mainly from accidental spills and storage of waste. The Group has drawn up recommendations that the Subsidiaries can use to prevent and contain this contamination. The recommended approach is based on four pillars:

- preventing leaks, by implementing, as far as possible, industry best practices in engineering, operations and transport;
- carrying out maintenance at appropriate frequency to minimize the risk of leaks;
- overall monitoring of the environment to identify any soil and groundwater pollution;
- managing any contamination from previous activities by means of containment and reduction or disposal operations.

In addition, a Group rule defines the following minimum requirements:

- identification of each site's environmental and health impacts related to possible soil and groundwater contamination;
- assessment of soil and groundwater contamination based on various factors (extent of pollution inside or outside the site's boundaries, nature and concentrations of pollutants, presence of a vector that could allow the pollution to migrate, use of the land and groundwater in and around the site);
- management of health or environmental impacts identified based on the use of the site.

Lastly, decommissioned facilities operated by the Group (i.e., chemical plants, service stations, mud pits or lagoons resulting from hydrocarbon extraction operations, wasteland on the site of decommissioned refinery units, etc.) impact the landscape and may, despite all the precautions taken, be sources of chronic or accidental pollution. In addition to the appropriate management of waste produced by the dismantling and decommissioning of sites, TOTAL has created a policy of evaluation and management of the risks caused by the pollution of soil and groundwater. For the sites at the end of their activity, remediation operations are determined in accordance with regulatory obligations with an objective of continuing to supervise the sites while favouring the possibility of redevelopment of Group activities (solar, reforestry, etc.). Remediation operations are carried out by specialized entities created by the Group. At the end of 2019, 114 industrial sites that were no longer in operation (excluding service stations) were in the process of remediation.

Sustainable use of resources

Fresh water

The Group's activities, mainly those of Refining & Chemicals, and to a lesser extent those of the Exploration & Production and the Integrated Gas, Renewables & Power segments, may potentially have an impact on, as well as be dependent on, water resources. This is especially true when an activity is located in a water resources sensitive environment.

Fully aware of these challenges, TOTAL implements the following water risk management principles:

1. monitor water withdrawals to identify priority sensitive sites and then carry out a risk assessment;
2. improve the water resources management depending on identified needs, by adapting the priority sites' environmental management system.

In order to identify its facilities exposed to the risk of water stress, TOTAL records the withdrawal and discharge of water on all of its operated sites relevant for this indicator and assesses these volumes on the basis of the current and future water stress indicators of the WRI⁽¹⁾ Aqueduct tool. Currently, 9.3%⁽²⁾ of fresh water withdrawals take place in a global water stress area. For the sites situated in these areas and that withdraw more than 500,000 m³ per year, TOTAL assesses water resources risk levels using, in particular, the Local Water Tool (LWT) for Oil & Gas from the Global Environmental Management Initiative (GEMI). This tool also helps guide the actions taken to mitigate the risks and to make optimal use of water resources on the sites when necessary.

This risk assessment establishes that the activities of the sites operated by the Group only expose the other users of the water to a relatively low risk of water stress. Following this assessment, two sites were identified as being at risk and were reported to the CDP⁽³⁾: the Grandpuits and Normandie refineries. The risk concerns the supply of water to these sites, which could be cut in order to maintain access to water for priority users.

In 2019, the Group answered the CDP Water survey for the 2018 period and was graded A-. The main indicator used in this reporting is fresh water withdrawal.

Water-related indicator ^(a)	2019	2018	2017
Fresh water withdrawals excluding cooling water (million m ³)	115	116	116

(a) Refer to point 5.11 of chapter 5 for the scope of reporting.

Soil

TOTAL uses the ground surface that it needs to safely conduct its industrial operations and, in 2019, did not make extensive use of ground surfaces that could substantially conflict with various natural ecosystems or agriculture.

Sensitive natural environments

Due to their nature, TOTAL's activities may potentially be located in **sensitive natural environments**. The Group is fully aware of this challenge and takes biodiversity and ecosystems into account in its internal standards, the core of which is its Safety Health Environment Quality Charter. As an illustration, for new facilities developed by the Group, its internal standards require the conducting of impact assessment studies that take into account biodiversity and ecosystems and the implementation of actions if necessary. For existing facilities, the Group recommended to its Subsidiaries that avoid-reduce-restore-compensate steps be taken. To make this policy more tangible, in July 2018, and within the framework of the Act4Nature initiative, the Group made 16 biodiversity commitments. These are described in the

biodiversity brochure available on the website sustainable-performance.total.com. There are 10 general commitments common to all of the signatory companies and an additional six commitments specific to TOTAL, some of which existed before the initiative.

3.6.8.4 Climate

Governance

In order to make an effective contribution to the climate change issue, TOTAL has put in place an organization and a structured governance. The Group has defined four strategic priorities that address climate change-related issues.

In support of the Group's governance bodies, the Strategy and Climate division structures the implementation of the Group's action with respect to climate change while working with the strategic and operational divisions of the Group's business segments. Progress is monitored through indicators, allowing the Group to adjust its actions.

Oversight by the Board of Directors

TOTAL's Board of Directors ensures that climate-related issues are incorporated into the Group's strategy and examines climate change risks and opportunities during the annual strategic outlook review of the Group's business segments. The Board of Directors examines the Group's GHG emissions reduction targets and reviews its performance on an annual basis.

To carry out its work, the Board of Directors relies on its Strategic & CSR Committee, whose rules of procedure were changed in September 2017 then in July 2018 in order to extend its missions to corporate social responsibility (CSR) and to the inclusion of climate-related issues in the Group's strategy.

In view of the importance of climate change challenges, in 2019, the Board of Directors decided to change the criteria for the determination of the variable portion of the Chairman and Chief Executive Officer's compensation for 2019 including by applying a quantifiable criterion related to the evolution of GHG emissions (Scopes 1 & 2) on operated oil & gas facilities (refer to chapter 4, section 4.3.2 for details). This criterion complements those introduced in 2016 to better account for the achievements of the Group's CSR and HSE targets. CSR performance is assessed by considering the extent to which climate issues are included in the Group's strategy, the Group's reputation in terms of corporate social responsibility as well as all aspects of the diversity policy.

Role of management

TOTAL's Chairman and Chief Executive Officer, in accordance with the long-term strategic directions set by the Board of Directors, implements the strategy of the Group while making sure climate change challenges are taken into account. In particular, he relies on the President, Group Strategy-Innovation, who is a member of the Executive Committee, to whom the Senior Vice President Strategy & Climate, and the Senior Vice President Climate report. The Senior Vice President Climate chairs the Climate-Energy Steering Committee, which mainly includes representatives of Strategy and HSE management from the various business segments. The purpose of this Committee is to structure the Group's approach to climate, in particular to:

- propose GHG emission reduction targets for the Group's operated oil & gas facilities;
- propose a strategy to reduce the carbon intensity of the energy products used by the Group's customers;
- monitor existing or emerging CO₂ markets;
- drive new-technology initiatives, in particular with industrial partners, to reduce CO₂ emissions (energy efficiency, CO₂ capture and storage, for example).

(1) World Resources Institute.

(2) According to CDP Water 2018 definition.

(3) Non-profit organization that offers environmental reporting services for investors, enterprises, city authorities, States and regional authorities. Refer to <https://www.cdp.net/en>

Strategy

Climate change is at the heart of the Company's strategic vision. TOTAL's approach is based on four axes.

1) Growing in the gas value chains (natural gas, biogas and hydrogen)

To respond effectively to the strong rise in demand for electricity, TOTAL is continuing its development in the gas sector, the CO₂ emissions of which are half that of coal when used to generate electricity⁽¹⁾. Gas is also a supplement that is essential to cope with the intermittent supply of renewables and seasonal fluctuations in demand. The growth of natural gas will see a constantly increasing proportion of greener gas in the existing infrastructure network, such as biogas and hydrogen, to reduce greenhouse gas emissions.

The Group has continued its efforts to expand its activities along the entire gas chain, from production to end customer. Upstream, TOTAL has finalized various acquisitions, including Engie's LNG (liquefied natural gas) assets and Anadarko's LNG assets in Mozambique, and has launched some major LNG projects, such as Ichthys in Australia and Cameron in the United States. In addition, the Group has proceeded with or benefited from the launch of major developments, like the Arctic LNG 2 project (refer to point 2.3 of chapter 2). TOTAL is the world's second-ranking⁽²⁾ operator on this market, selling a volume of more than 34 Mt in 2019.

In distribution, TOTAL has moved into gas fuel for transport activities by acquiring a 25% stake in Clean Energy Fuels Corp.⁽³⁾, one of the leading distributors of gas fuel for HGVs in the United States, and by signing a contract with CMA-CGM, the first shipping company to equip its transcontinental container ships with LNG-powered engines. In 2018, the Group also entered into a partnership with the Adani Group, India's largest private conglomerate in energy and gas infrastructure, in order to contribute to the development of the natural gas market. This partnership, which was extended in 2019, illustrates the Group's desire to help countries transition from coal to a more diversified energy mix.

Strengthening the position of gas in the energy mix must, however, be accompanied by a greater focus on control of methane emissions. To preserve the advantage that gas offers in terms of GHG emissions compared to coal for electricity generation, it is necessary to reduce methane emissions associated with the production and transportation of gas. In 2019, methane emissions from facilities operated by the Group for its Upstream hydrocarbons activities amounted to circa 0.20% of the commercial gas produced⁽⁴⁾. The Group's target is to reduce this intensity below 0.20%.

Since 2014, the Group has been a member of the Oil & Gas Methane Partnership between governments and industrial companies for the improvement of tools to measure and control methane emissions set up by the Climate and Clean Air Coalition and promoted by UN Environment and the non-profit organization Environmental Defense Fund. The Group also took several actions as part of the Oil & Gas Climate Initiative and signed the guiding principles on the reduction of methane emissions across the natural gas value chain⁽⁵⁾.

2) Developing a profitable low-carbon electricity business

TOTAL's position is growing on the unregulated part of the low-carbon electricity value chain (i.e., excluding the transportation of electricity), from electricity generation – generated from renewables or gas – to storage (batteries, hydrogen) and sale to end customers. As demand for electricity is expected to grow in the coming decades, TOTAL plans to invest \$1.5 to \$2.0 billion per year. In 2018, the Group made strategic acquisitions, including Direct Énergie and its subsidiary Quadran, respectively renamed Total Direct Énergie and Total Quadran, thereby stepping up its presence in renewable energy (wind, solar and hydropower and in biogas).

In 2018, TOTAL acquired four combined-cycle natural gas power plants in France with a global capacity of 1.6 GW (refer to point 2.3 of chapter 2 for further information on these acquisitions).

The Group aims to hold an installed gross production capacity of renewable electricity in excess of 25 GW by 2025, of which 10 GW in Europe. In 2019, this capacity was approximately 3 GW.

In distribution, following the acquisition in 2018 of the French specialist in smart recharging solutions, G2Mobility renamed Total EV Charge, the Group has diversified its electric mobility offer. TOTAL aims to operate 150,000 charging points on private or public parking lots in Europe by 2025.

Example: Electric vehicles, Netherlands

TOTAL was awarded Europe's largest concession contract for electric vehicles charging by the 'Metropolitan Region Amsterdam Electric' (MRA-Electric). Under this agreement, TOTAL will install and operate up to 20,000 new public charging points in the Netherlands, in the three provinces of North-Holland, Flevoland and Utrecht⁽¹⁾. This new contract intends to address the fast growing demand for public Electric Vehicle (EV) charging points in the Netherlands. This EV charging network shall cover a population of 3.2 million inhabitants and around 15% of the current Netherlands EV charging demand. As part of this concession contract, the electricity supplied by TOTAL to the EV charging network will be 100 % sourced from renewable power (solar, wind, ...) and produced in the country.

TOTAL has also launched a range of fluids for electric and hybrid vehicles.

As an electricity supplier, the Group aims to serve almost eight million customers by 2025.

3) Avoid expensive oil, reducing emissions at our facilities and promoting sustainable biofuels

The Group foresees a long-term stagnation, or even a decline, in the demand for oil and is, therefore, concentrating on low break-even oil assets.

Additionally, TOTAL is taking steps to reduce CO₂ emissions from its operated facilities. A dedicated task force bringing together different skills in the Group was set up in 2019. The Group has set itself a target of reducing GHG emissions from its operated oil & gas facilities from 46 Mt of CO₂ to less than 40 Mt of CO₂ between 2015 and 2025.

(1) Source: International Reference Center for the Life Cycle of Products, Processes and Services; Life cycle assessment of greenhouse gas emissions associated with natural gas and coal in different geographical contexts, October 2016, and "Review of Life Cycle Analysis of gas and coal supply and power generation from GHG and Air Quality Perspective" Imperial College London, 2017.

(2) Company's data

(3) A company listed on the NASDAQ, 24.84% interest on December 31, 2019.

(4) Refer to the OGCI methodology for methane intensity calculation.

(5) "Guiding Principles on Reducing Methane Emissions across the Natural Gas Value Chain".

(6) With the exception of the municipalities of Amsterdam and Utrecht.

Improving the energy efficiency of the installations is an essential part of this effort. The Group aims to improve its energy efficiency by an average of 1% per year over the 2010-2020 period, at a time when exploration is becoming increasingly complex. This indicator is described in point 3.6.8.4.3 of this chapter. TOTAL also uses appropriate architectures and equipment and introduces technological innovations. For example, on offshore production barges, offshore platforms and onshore facilities, heat recovery systems on gas turbine exhausts have been installed, thereby avoiding the need for furnaces or boiler systems.

Finally, the incorporation of biofuels can help reduce CO₂ emissions from road and air transport. According to European standards, they reduce CO₂ equivalent emissions by at least 50% through their complete life cycle, in comparison with the equivalent fossil fuels⁽¹⁾. As a pioneer in biofuels for more than 20 years, TOTAL is now one of Europe's major actors, with 2.5 Mt blended sustainable biofuels⁽²⁾ in 2019. On a worldwide scale, the Group contributed to the incorporation of 3.6 Mt of sustainable biofuels. In addition, TOTAL produced 0.24 Mt of sustainable biofuels in its refineries in 2019. With the start of production at the La Mède biorefinery in 2019, with a capacity of 0.5 Mt per year of hydrotreated vegetable oil (HVO), the Group has a market share of over 10% in Europe in HVO production.

For more than 10 years, TOTAL's R&D teams have developed technologies that have broadened the range of usable resources, while also meeting the need for sustainability. The consortium BioTFuel is working on, for example, the development of lignocellulose (plant waste).

4) Developing businesses that contribute to carbon neutrality

The preservation and restoration of natural carbon wells (forests, wetlands, etc.) and carbon capture and storage (CCUS) will be key to achieving carbon neutrality in the second part of the 21st century.

TOTAL has launched a new activity based on preserving and restoring the capacity of ecosystems to act as carbon sinks. This activity is owned by a business unit created in 2019 that is dedicated to investments in natural carbon sinks, made up of environmental and agronomy experts, with an investment budget of \$100 million per year from 2020 onwards, and with a target of 5 MtCO₂ of sustainable storage capacity per year by 2030. In addition, as part of the *Total Foundation* program, the Total Foundation is currently conducting projects in forest preservation and restoration (refer to point 5.10 of chapter 5).

On the other hand, CCUS will be essential for several industries, especially those that emit massive amounts of CO₂ due to the nature of their business (cement, steel, etc.). TOTAL allocates significant resources to this area by dedicating up to 10% of the Group's R&D budget to it. Several projects made significant progress, including Northern Lights (Norway), a project in which the Group participates alongside Equinor and Shell. TOTAL is also a partner of the Net Zero Teesside project (UK), together with the OGCI's investment fund and several other industry players⁽³⁾.

TOTAL also stepped up its R&D program in 2019 by entering partnerships with the National Carbon Capture Center in the United States and IFPEN in France. The Group has also launched a development study for a major pilot industrial scale project in Dunkirk, a project to produce methanol from CO₂ and hydrogen in Germany with the start-up Sunfire, and a feasibility study of an industrial system to capture and reuse the CO₂ produced by the LafargeHolcim cement plant in the United States⁽⁴⁾.

Sector initiatives and international framework

TOTAL is involved in various international initiatives on the main challenges raised by climate change. Indeed, tackling climate change requires cooperation between all actors, from both public and private sectors.

Thus, TOTAL responded, in 2014, to the call of the UN Global Compact, encouraging companies to consider a CO₂ price internally and publicly support the need for such a price via regulation adapted to the local context. In particular, TOTAL advocates the introduction of a balanced, progressive international agreement to prevent distortion of competition between industries or regions worldwide. Drawing attention to future constraints on GHG emissions is crucial to changing the energy mix. TOTAL therefore promotes the setting of a worldwide price for each ton of carbon emitted, while ensuring fair treatment of "sectors exposed to carbon leakage" (as defined by the EU). In addition, TOTAL is working with the World Bank as part of the Carbon Pricing Leadership Coalition (CPLC). In June 2017, TOTAL became a founding member of the Climate Leadership Council, an initiative that calls for the introduction of a "carbon dividend", with a redistribution mechanism that pays dividends to the entire population.

In 2014, TOTAL was actively involved in launching and developing the Oil & Gas Climate Initiative (OGCI), a global industry partnership. At year-end 2019, this initiative involved 13 major international energy players. Its purpose is to develop solutions for a sustainable low emissions future. Launched in 2017, the OGCI Climate Investments fund, which has access to over \$1 billion over 10 years, invests in technology that significantly cuts emissions. Examples of investments include a large-scale industrial CO₂ capture and storage project (Net Zero Teesside Project), methane emission monitoring services by satellite (GHGSat), by aircraft (Kairos Aerospace) or by drone (SeekOps Inc.) and a technology that incorporates CO₂ as a raw material in the production of polyols used in polyurethanes, which are plastics that have multiple uses (Econic Technologies).

The Group also plays a role in various international initiatives that involve the private and public sectors to bring about (non-exhaustive list):

- carbon pricing within Caring for Climate – United Nations Global Compact, and the Paying for Carbon call;
- the end of routine flaring of gas associated to oil production within the World Bank's Zero Routine Flaring by 2030 initiative;
- greater transparency, while taking into account the recommendations of the G20 Financial Stability Board on climate, and of the Task Force on Climate-related Financial Disclosures (TCFD); and
- the development of new state-of-the-art energy companies, since 2017 within the Breakthrough Energy Coalition (BEC), a group of investors created by Bill Gates in 2015, and since 2016 within the Breakthrough Energy Ventures, a \$1 billion fund created in 2016 by the BEC.

The list of trade associations of which TOTAL is a member and the lobbying Ethics Charter that governs these memberships are published on the website www.total.com. The Group cooperates with these associations mainly on technical or scientific subjects, but certain associations sometimes make public statements on climate change. In 2019, TOTAL assessed the 30 main trade associations to which it belongs in order to check that they are in line with the Group's stance on the climate. This alignment was reviewed according to six key points: their scientific position, the Paris Agreement, carbon pricing, the role of natural gas, the development of renewable energies and the development of CCUS. Following this review, TOTAL decided not to renew its membership of

(1) Article 17, paragraph 2 of the RED1 European Directive.

(2) Physical volume of biofuels in equivalent ethanol and esters according to the rules defined by the European RED Directive, excluding volumes sold to third parties via trading.

(3) BP, ENI, Equinor, Occidental Petroleum and Shell.

(4) Svante Inc., LafargeHolcim, Oxy Low Carbon Ventures LLC and TOTAL.

the American Fuel & Petrochemical Manufacturers association. TOTAL remains a member of three associations (the American Chemistry Council, the American Petroleum Institute and the Canadian Association of Petroleum Producers) identified as being partially aligned, to advocate internally for changes in their position. TOTAL is prepared to reconsider its membership in the event of continued disagreement.

In November 2019, TOTAL wrote to the US agency in charge of the environment (US-EPA), through a public consultation process, to oppose the projected lowering of regulatory requirements on methane emission control in the oil and gas industry. The Group supports policies which aim to reduce methane emissions from natural gas production and consumption.

TOTAL also actively participates in the debate on climate issues, thanks especially to its long-term partnerships with university chairs, such as the Climate Economics Chair at Paris-Dauphine University, the climate change research program of Massachusetts Institute of Technology (MIT)⁽¹⁾, and Toulouse School of Economics. TOTAL also offers training and makes presentations at several universities, thereby taking part in the debate.

Targets and metrics to measure climate-related risks and opportunities

TOTAL has set targets and introduced a number of indicators to steer its performance.

The Group's climate targets:

- reduce the GHG emission (Scopes 1 & 2) on operated oil & gas facilities of 46 Mt CO₂e in 2015 to less than 40 Mt CO₂e in 2025.
- reduce routine flaring⁽²⁾ by 80% on operated facilities between 2010 and 2020 in order to eliminate it by 2030;
- improve by an average of 1% per year the energy efficiency of operated facilities between 2010 and 2020;
- reduce the intensity of methane emissions of facilities operated by the Group for its Upstream hydrocarbon activities below 0.20% of the commercial gas produced;
- maintain the intensity of CO₂e emissions of facilities operated by the Group for its Upstream hydrocarbons activities under 20 kg CO₂e/boe.

What has been accomplished:

- a GHG emission reduction (Scopes 1 & 2) on operated oil & gas facilities from 46 Mt CO₂e to 41.5 Mt CO₂e between 2015 and 2019;
- more than 80% reduction in routine flaring between 2010 and 2019;
- more than 10% improvement in energy efficiency between 2010 and 2019;
- an intensity of methane emissions around 0.20% of the commercial gas produced in 2019;
- an intensity of CO₂e emissions below 20 kg CO₂e/boe in 2019.

Indicators related to climate change^(a)

		2019	2018	2017	2016	2015	
SCOPE 1	Direct greenhouse-gas emissions (operated scope)	Mt CO ₂ e	41	40	38	41	42
Breakdown by segment							
	Hydrocarbons Upstream activities	Mt CO ₂ e	18	18	17	19	19
	Refining & Chemicals	Mt CO ₂ e	20	21	21	22	22
	Marketing & Services	Mt CO ₂ e	< 1	< 1	< 1	< 1	< 1
	Integrated Gas, Renewables & Power (excluding upstream gas)	Mt CO ₂ e	3	2	0	0	-
	Direct greenhouse-gas emissions based on the Group's equity interest	Mt CO ₂ e	55	54	50	51	50
SCOPE 2	Indirect emissions attributable to energy consumption by sites	Mt CO ₂ e	4	4	4	4	4
GHG emissions (Scopes 1 & 2) on operated oil & gas facilities							
	Net primary energy consumption (operated scope)	TWh	160	143 ^(b)	142	150	153
	Group energy efficiency indicator	Base 100 in 2010	88.0	88.4	85.7	91.0	90.8
	Daily volume of all flared gas (Exploration & Production operated scope) (including safety flaring, routine flaring and non-routine flaring)	Mm ³ /d	5.7	6.5	5.4	7.1	7.2
	Of which routine flaring	Mm ³ /d	0.9	1.1	1.0	1.7 ^(c)	2.3 ^(d)

(a) Report to point 5.11 of chapter 5 for reporting scope

(b) Excluding primary energy consumption of Direct Énergie gas power plants.

(c) Estimated volume at end 2016 based on new definition of routine flaring published in June 2016 by the Working Group Global Gas Flaring Reduction.

(d) Volumes estimated upon historical data.

(1) The Joint Program on the Science and Policy of Global Change.

(2) Routine flaring, as defined by the working group of the Global Gas Flaring Reduction program within the framework of the World Bank's Zero Routine Flaring initiative.

This data as well as the related risks are also reported to the CDP once a year, and TOTAL's response to the CDP⁽¹⁾ Climate Change questionnaire is posted on the Group's website (sustainable-performance.total.com). For its 2019 reporting regarding 2018 activities, the Group received an A-.

Flaring

Reducing routine flaring has been a long-standing target for the Group, which designs its new projects without resorting to it. In addition, TOTAL is committed to putting an end to routine flaring on its operated facilities by 2030. An 80% reduction target was set for 2020 compared to 2010, in other words, an average of 1.5 Mm³/d. This target has been met since 2017.

Furthermore, as part of the Global Gas Flaring Reduction program, TOTAL has worked alongside the World Bank for over 10 years to help producing countries and industrial players control flaring of gas associated to oil production.

The decrease in flaring in 2019 is due to better compressor reliability and shorter start-up periods in Africa.

Energy efficiency

One of the Group's performance targets is to better control energy consumption. Since the beginning of 2013, a Group directive has defined the requirements to be met at operated sites using more than 50,000 tons of oil equivalent per year of primary energy (approximately 40 sites). At the end of 2019, all the sites involved reported compliance or had taken steps to comply with this directive. The aim is to ensure that 100% of sites using more than 50,000 tons of oil equivalent per year by the end of 2020 have an auditable energy management system, such as the ISO 50001 standard on energy management⁽²⁾. A certain number of sites that use less than 50,000 tons of oil equivalent per year have also voluntarily taken measures to become ISO 50001 certified.

Energy efficiency is a key factor for the improvement of economic, environmental and industrial performance. Since 2013, the Group has used a Group Energy Efficiency Index (GEEI) to assess its performance in this area. It consists of a combination of energy intensity ratios (ratio of net primary energy consumption to the level of activity) per business.

The Group's target for the 2010-2020 period is to improve the energy efficiency of its operated facilities by an average of 1% per year. By design, the base value of the GEEI was defined as 100 in 2010 and the target is to reach 90.4 in 2020. This target has been met since 2017.

GHG emissions

The Group has reduced by 50% the GHG emissions (Scopes 1 & 2) from its operated activities since 2005. This reduction was reached notably due to reducing flaring and improving energy efficiency.

In 2019, TOTAL set itself a target to reduce GHG emissions (Scopes 1 & 2) on its operated oil & gas facilities to less than 40 Mt CO₂e in 2025.

3.6.8.5 Suppliers

Mapping

The mapping of severe impacts of the Activities on human rights, fundamental freedoms, health, safety and the environment was supplemented by a risk mapping specific to the Group's procurement, by category of goods and services, with the participation of more than 80 persons (CSR experts and buyers) and the support of AFNOR. As part of its continuous improvement approach, Total Global Procurement worked on its methodology in 2019, with a view to updating in 2020 the previously established map, based on questionnaires completed by the managers of each purchasing category.

Supplier assessment

The Supplier qualification process

The Supplier qualification process was harmonized at Group level in 2017 and a new internal framework was published in 2018. A new IT Supplier qualification tool was developed in 2019 and will gradually be rolled out in over 100 countries. In 2019, over 4,000 of the Suppliers managed by Total Global Procurement in France were included into the application. It is designed to automate and document the supplier qualification process.

The Supplier assessment process

Simultaneously, the Group has set up a Supplier assessment process to identify and prevent risks of severe impacts on human rights, fundamental freedoms, health and safety. Since 2016, the Group conducts audits on working conditions amongst Suppliers. A targeted annual audit plan is defined every year and includes the Suppliers put forward by the Subsidiaries based in countries that have been identified as having a certain level of risk of human rights violations. Four times more audits were conducted in 2019 than in 2018. Since 2016, these audits have covered a population of close to 80,000 people working on Supplier sites worldwide.

Moreover, TOTAL, BP, Equinor and Shell are continuing their efforts to develop a common collaborative platform to assess the respect for human rights by their suppliers. Together, they seek to encourage the improvement of working conditions in the supply chain. This initiative addresses the United Nations SDG N° 8: "to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all".

(1) The CDP is a non-profit organization that offers environmental reporting services for investors, enterprises, city authorities, States and regional authorities.

(2) The ISO 50001 standard accompanies the implementation in companies of an energy management system that allows a better use of energy.

Example: Procurement of agricultural raw materials

TOTAL produces and markets biofuels partly produced from agricultural raw materials.

All biofuels incorporated by the Group in Europe are certified as sustainable according to European Union criteria (ISCC EU type certification). These certification criteria include a review of sustainability and traceability of the oils (carbon footprint, non-deforestation, proper soil use, respect for human rights). Those criteria apply to the entire production and distribution chain of sustainable biofuels and were strengthened in 2019 as part of the revision of the Directive on renewable energy in transport (RED2). In particular, the European Union caps the use of agriculture raw materials in biofuels to limit changes in land use.

In July 2019, TOTAL started up the La Mède biorefinery in southern France that will produce biofuels from vegetable oils (rape, palm, etc.), waste and residues. The compliance with the sustainability criteria of the oils processed at the La Mède biorefinery is established by an ISCC (International Sustainability & Carbon Certification) type certificate, according to a mass balance demanded by the European Union. TOTAL selects a limited number of suppliers of palm oil and completes the certification with a specific reinforced control system of sustainability and the respect for human rights. In 2019, the Group conducted five human rights audits of its potential palm oil suppliers for the La Mède biorefinery in France. These audits were carried out by independent third parties based on a framework that assesses the implemented system and governance with regards to respecting human rights, working conditions and the rights of communities.

TOTAL has demonstrated its intent to be transparent regarding the origin of every delivery of palm oil purchased for the La Mède biorefinery by publishing the list of plantations and mills attached to the sustainability certificates.

Worldwide, biofuels used by the Group meet sustainability requirements as per applicable regulations.

Finally, pursuant to Rule 13p-1 of the Securities Exchange Act of 1934, as amended, which implemented certain provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, TOTAL has submitted since 2014 to the Securities and Exchange Commission an annual document relating to “conflict minerals⁽¹⁾” sourced from the Democratic Republic of Congo or an adjoining country. The document indicates whether, during the preceding calendar year, any such minerals were necessary to the operation or production of a product manufactured (or procured) by TOTAL S.A. or one of its affiliates. The main objective of the rule’s obligation to publish this information is to prevent the direct or indirect funding of armed groups in central Africa. For more information, refer to TOTAL’s most recent publication available at: sustainable-performance.total.com or www.sec.gov.

(1) Rule 13p-1 defines “conflict minerals” as follows (irrespective of their geographical origin): columbite-tantalite (coltan), cassiterite, gold, wolframite as well as their derivatives, which are limited to tantalum, tin and tungsten.

Mitigation and preventive actions

Buyers training

TOTAL has set up several channels of communication to **raise employee awareness** of the risks and issues related to its supply chain. Training modules explaining the Group’s ethical commitments and the Fundamental Principles of Purchasing have been developed for and made available to Group procurement representatives. In 2019, more than 300 buyers were made aware and/or trained on respect for human rights and working conditions by Suppliers.

The Group provides its **buyers** with supporting materials, such as the “Sustainable Purchasing Awareness Cards”. These fact sheets cover various topics relating to human rights at work (such as forced labor and child labor, etc.). A set of communication tools intended to help procurement representatives initiate discussions on the Fundamental Principles of Purchasing was also circulated within Total Global Procurement. The materials used in the annual performance review have been revised to include a section on human rights.

In June 2019, the Total Global Procurement seminar was attended by 239 participants (buyers and procurement support functions) and included a focus on responsible procurement. When updating the CSR risk map relating to the Group’s procurement, workshops were increase the buyer’s awareness of the issue of responsible procurement.

The 2019 World Quality Day brought together parties involved in performance improvement to discuss the theme “Performance, let’s embark all actors” at events held simultaneously in Paris, Pau and Copenhagen. Various project managers shared their experiences gained by using lean management tools, and a guest speaker illustrated the use of lean in the early phases of a project. Efforts were also made to raise the participants’ awareness of issues related to responsible purchasing.

Awareness and training of suppliers

Awareness-raising actions are carried out during meetings with Suppliers, particularly the Suppliers Day event that brings the Group’s strategic Suppliers together every two years. During the 2019 Suppliers Day, the Fundamental Principles of Purchasing and the Group’s new Code of Conduct were distributed to all participants. Emphasis was laid on responsible procurement in particular.

Every year, the International Procurement Office (TOTAL IPO in Shanghai, China) organizes a **compliance day**. In 2019, special focus was given to the issue of respect for human rights.

Progress with other companies

Since 2018, TOTAL has been a member of the United Nations Global Compact platform on Decent Work in Global Supply Chains and, in this capacity, takes part in various workshops that aim to **help the member companies of the Global Compact make progress** in this area. In December 2018, the Group committed to continuing its efforts in terms of decent work and the respect for human rights in its supply chain by signing the “Six Commitments” of the United Nations Global Compact. In October 2019, TOTAL welcomed participants at its offices for the platform’s fourth and final round table meeting. The Group’s buyers also take part in **international working groups on responsible procurement**. TOTAL belongs to IPIECA’s Supply Chain Working Group. Building on the workshops held since 2015, TOTAL continued to participate in the Operationalization of the UN Guiding Principles work organized by the IPIECA, aimed at both oil and gas companies and engineering, procurement and construction (EPC) contractors.

Whistleblowing mechanisms

With respect to the development of good practices in business relations, TOTAL has consistently raised its employees' awareness of mediation as an alternative method for resolving disputes since 2013. In 2019, an open day for employees of the Group, lawyers and operational staff, enabled participants to learn about the benefits of mediation. A brochure designed to increase awareness of the mediation process is available to all Group employees. In addition, an email address (mediation.fournisseurs@total.com) is available on the TOTAL website to allow the Group's suppliers to contact the dedicated internal mediator, who is tasked with facilitating relations between the Group and its French and international suppliers. The general purchasing terms and conditions also mention the possibility of recourse to mediation.

Monitoring procedures

A **Responsible Procurement roadmap**, updated in 2019, defines TOTAL's outlook for 2019-2023 in terms of respecting human rights throughout the supply chain, environment and economic development. Representatives of the Management Committee of Total Global Procurement, management of the Civil Society Engagement, HSE and Legal divisions as well as the Ethics Committee were invited in 2019 to participate to the Responsible Procurement Committee which is tasked with monitoring the implementation of the Group's Responsible Procurement roadmap.