

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Repsol is international integrated Oil&Gas Company whose main activity consists of the upstream and downstream business. The Company has become firmly established as one of the most important international companies in the O&G industry operating in more than 35 countries and working towards energy solutions which are responsible to the planet.

At Repsol we believe that access to energy is a universal right. Everyone is entitled to economic and sustainable energy sources. Therefore, our obligation is to guarantee a safe and competitive supply while preserving the environment and ensuring a better planet for future generations. We work on solutions that allow society to enjoy a sustainable future with low emissions of greenhouse gases.

The Company has a Carbon Strategy aligned with public policies (regarding CO2 emissions and energy efficiency), reduce the carbon footprint in its entire value chain, and is committed to technological innovation and to continue promoting greater energy efficiency in our operations. We are also continuously monitoring the latest trends and technologies developed in the field of renewable energy, investing in sustainable mobility, and contributing to the reduction of emissions through biofuel production and research.

The Company is engaged in all aspects of the Oil and Gas business. Its main business activities include the exploration, development and production, of crude oil and natural gas reserves: (1) Crude oil and gas transport by pipeline or in tankers from the production areas to the consumption areas; (2) Refining crude oil to turn it into value added products such as gasoline and diesel; (3) Marketing such products and liquefied petroleum gas (LPG) via, in each case, the petrol station network and the network for distribution to the end customer; (4) Chemicals, from oil derivatives, which produces and sells a wide variety of products ranging from basic petrochemicals to derivatives; (5) The natural gas regasification and liquid natural gas (LNG) and renewable production projects.

We developed our activities to become an even more sustainable and competitive company, with a responsible commitment to the environment and to the areas in which we operate. We are decidedly and continuously committed to sustainability as a key factor for creating value, now and in the future. This is always done using processes that respond to the strict controls on safety and respect for the environment.

We are committed to technological innovation as the key to building a more efficient, secure, competitive and sustainable energy model. This commitment is embodied in the Repsol Technology Center: a leading European center where we promote R&D+i with high investments every year.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2017	December 31 2017	No	<Not Applicable>
Row 2	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

- Algeria
- Aruba
- Bolivia (Plurinational State of)
- Canada
- Ecuador
- Guyana
- Indonesia
- Malaysia
- Norway
- Peru
- Portugal
- Spain
- United States of America
- Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C-OG0.7

(C-OG0.7) Which part of the oil and gas value chain and other areas does your organization operate in?

Row 1

Oil and gas value chain

- Upstream
- Downstream
- Chemicals

Other divisions

Carbon capture and storage/utilization

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Executive Director, Member of the Board and the Corporate Executive Committee. The Board of Directors, at the proposal of the Sustainability Committee, approves the strategy for sustainability and, specifically, for climate change. The Corporate Executive Committee is the highest executive level within the company for taking strategic decisions and setting lines of action with regard to climate change. The Corporate Executive Committee (CEC) has direct responsibility in the management of matters related to climate change: it approves the multiyear objectives and annual targets for reduction of greenhouse gases (GHG).
Board Chair	Chairman of the Board of Directors, at the proposal of the Sustainability Committee, approves the strategy for sustainability and, specifically, for climate change
Other, please specify (Board of Directors)	The Board of Directors, at the proposal of the Sustainability Committee, approves the strategy for sustainability and, specifically, for climate change
Other, please specify (Corporate Executive Committee)	This is the highest executive level within the company for taking strategic decisions and setting lines of action with regard to climate change. The Corporate Executive Committee (CEC) has direct responsibility in the management of matters related to climate change: it approves the multiyear objectives and annual targets for reduction of greenhouse gases (GHG).

C1.1b

(C1.1b) Provide further details on the board’s oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy	In 2015, the Board of Directors set up a Sustainability Committee with the task of analyzing the expectations of the company’s stakeholders and reporting these to the Board of Directors, proposing the approval of the strategy and guiding and monitoring the objectives, action plans and practices of the company regarding sustainability. At least twice a year, the Board review information on execution of the climate change and CO2 emission strategy.
Scheduled – all meetings	Reviewing and guiding major plans of action	In 2015, the Board of Directors set up a Sustainability Committee with the task of analyzing the expectations of the company’s stakeholders and reporting these to the Board of Directors, proposing the approval of the strategy and guiding and monitoring the objectives, action plans and practices of the company regarding sustainability. In January 2018, emissions targets for businesses reporting and programs established in this regard were approved. This monitoring is done by the Board every six months
Scheduled – all meetings	Monitoring implementation and performance of objectives	In 2015, the Board of Directors set up a Sustainability Committee with the task of analyzing the expectations of the company’s stakeholders and reporting these to the Board of Directors, proposing the approval of the strategy and guiding and monitoring the objectives, action plans and practices of the company regarding sustainability. In January 2018, for reporting emissions targets by businesses, and programs established in this regard were approved. This monitoring is done by the Board every six months

C1.2

(C1.2) Below board-level, provide the highest-level management position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Sustainability Officer (CSO)	Both assessing and managing climate-related risks and opportunities	Quarterly
Sustainability committee	Both assessing and managing climate-related risks and opportunities	Quarterly
Other, please specify (Corporate Executive Committee)	Both assessing and managing climate-related risks and opportunities	Quarterly
Energy manager	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.

The Chief Sustainability Officer (CSO) reports directly to the CEO, coordinates with all business units involved in developing the climate change strategy the proposed objectives and monitoring of action plans to reduce Repsol’s CO2 emissions.

The Sustainability Committee is a specialized committee within the Board of Directors and have supervisory, reporting, advisory, and proposal functions. The Sustainability Committee is governed by Article 37 of the Company Bylaws and Article 37 of the Regulations of the Board of Directors, which outline its composition, functioning, and competencies. It is aware of and orients the Company’s policy, objectives and guidelines with respect to environmental, social and safety matters. Members of this committee are: 2 dominical directors, 2 Proprietary directors, Chief Sustainability Officer. In 2017, this Committee held four meetings and addressed, with respect to climate change, the following:

- Risk Map.
- Scorecard, indicators and fulfilment of Safety and Environment targets.
- Energy and climate change: progress and commitments of OGCI and OGCI-Climate Investment, E&P emission reduction target, challenges of energy transition and Company’s position in carbon capture, use and storage.

The Corporate Executive Committee is the highest executive level within the company for taking strategic decisions and setting lines of action with regard to climate change. The Corporate Executive Committee (CEC) has direct responsibility in the management of matters related to climate change: it approves the multiyear objectives and annual targets for reduction of greenhouse gases (GHG). At least twice a year, or as often as necessary, the CEC and the Sustainability Committee review information on execution of the climate change and CO2 emission strategy.

Energy Manager reports directly to the CSO and is responsible of the following issues:

- Definition of the climate change strategy and its integration with the corporative strategy
- Establishment of emissions reduction targets, and monitoring its compliance
- Identification of risks & opportunities with regard to climate change
- Identification if challenges of energy transition

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

Corporate executive team

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

All members of Corporate Executive Team have medium and long-term objectives, including emission reduction

Who is entitled to benefit from these incentives?

Chief Executive Officer (CEO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

All members of Corporate Executive Team have medium and long-term objectives, including emission reduction

Who is entitled to benefit from these incentives?

Chief Financial Officer (CFO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

All members of Corporate Executive Team have medium and long-term objectives, including emission reduction

Who is entitled to benefit from these incentives?

Chief Sustainability Officer (CSO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

All members of Corporate Executive Team have medium and long-term objectives, including emission reduction

Who is entitled to benefit from these incentives?

Management group

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Who is entitled to benefit from these incentives?

Business unit manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Who is entitled to benefit from these incentives?

Energy manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Who is entitled to benefit from these incentives?

Environment/Sustainability manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Who is entitled to benefit from these incentives?

Process operation manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Who is entitled to benefit from these incentives?

Other, please specify (Energy/environment engineers&tech staff)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Who is entitled to benefit from these incentives?

Chief Executive Officer (CEO)

Types of incentives

Other non-monetary reward

Activity incentivized

Emissions reduction target

Comment

Shares (30% of annual variable remuneration)

Who is entitled to benefit from these incentives?

Other, please specify (General Counsel and Secretary of Board)

Types of incentives

Other non-monetary reward

Activity incentivized

Emissions reduction target

Comment

Shares (30% of annual variable remuneration)

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	1	This is the time horizon of the budget
Medium-term	1	5	This is the time horizon of the strategic plan
Long-term	5	25	The long-term time horizon varies depending on the nature and purpose of the prospect, and can be shorter than the stated 25-year span. This is the indicative time horizon of prospective assessments which anticipate global and sectoral trends relevant for Repsol. This time horizon is aligned with those of the International Energy Agency

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Annually	>6 years	A strength of our ERM methodology is that it allows for the analysis of any given risk, or any given set of risks, at any given moment in the future. We are able to report risk severity and/or loss for each of the following 5 years and for the subsequent years as well. With this approach, we can analyse emerging long term risks that are not expected to affect our objectives in the coming years.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

In Repsol we define risk as any factor of uncertainty that can cause a deviation in the achievement of company's objectives.

We use a bottom-up approach to build the Repsol Risk Map.

At the beginning of this process (executed yearly), the business and corporate units that manage risk-exposing assets or activities, examine changes that have happened during the last year, and they assess how these changes have modified the business context. Based on the results, they identify and prioritize their risks (and opportunities). In order to guide the context analysis and the risk identification process, they use a unique corporate overarching taxonomy that prevents the units from omitting any relevant risk. This tailor-made taxonomy contains 72 risk types, which are classified as strategic (22), operational (38) or financial risks (12).

Climate change can trigger many different risk events of our risk taxonomy, among others: Wars, armed conflicts and social instability, Deterioration (or improvement) of competitive position, Regulatory changes, Media manipulation/activism, Inadequate investment/divestment decisions, Technological obsolescence due to the appearance of disruptive technologies, Epidemics or similar outbreaks and Extreme weather events, non-predictable weather changes and natural disasters. Any of these events can hamper the adequate execution of the business processes of the company, and ultimately the achievement of its strategic goals. That's why climate change is a risk and opportunity factor we consider throughout the whole ERM process.

Once the risks have been defined, a risk analysis methodology its applied which combines both quantitative techniques for the analysis of frequencies and economic losses, and qualitative techniques for the analysis of impacts on reputation and people. Qualitative estimations of impact on people consider potential injuries and the effects on the commitment or motivation of company's employees.

Once each business or corporate unit has produced its risk map, it is reported to its managers. This report comprises both the risk profile and the state of the controls that mitigate the risks, as well as the improvement potential of such controls. With this information available, the managers can make decisions on the controls to be implemented or improved, and allocate resources accordingly. Repsol has risk appetite statements for those risks that the Company is not willing to assume. These statements are contained in Repsol's Risk Policy and replicated in the specific policies and norms that regulate the management of those risks. Therefore the management systems of these "zero appetite" risks promote the continuous improvement of our performance, regardless their severity. Reputation & brand, HSE, security, ethics & conduct and compliance risks are examples of "zero appetite" risks. The rest of the risks, i.e., those which the company is willing to assume up to a certain threshold, are compared with each other in terms of their severity and loss (are our risk metrics).

The next milestone of the ERM process is the aggregation of the risks contained in the individual risk maps (asset level), in terms of severity and loss, to produce the Company-wide Risk Map (company level), as well as several intermediate reports, including the Downstream-wide and the E&P-wide Risk Maps. Once this has been completed, specific reports are prepared for the corporate units that supervise the management of specific risks so that they can make decisions as well, with the guidance of the same principles regarding risk appetite. Examples of these reports are the maps of legal, reputational, HSE, security, IT, procurement, compliance, fiscal and financial risks. A specific report of sustainability risks is prepared as well. This report contains a chapter of climate change risks where the relative contribution of these risks to the overall risk profile of the company is examined in terms of loss and severity.

The Repsol Risk Map, which is reported to the Board, as well as the stochastic simulations and deterministic scenarios of the P&L, are made available for the optimization of key decision-making processes such as the development of the strategic plan and the budget. According to Repsol's ERM methodology, the substantive risks, which are those reported at the corporate level, are the top-20 risks, i.e., the 20 most severe risks of the Company. Out of these 20 risks, 12 (60%) are included because of their cumulative loss (at 50 and 95 percentiles), 4 (20%) because of their reputational impact at the 95 percentile, and 4 (20%) because of their impact on people at the 95 percentile. In 2017, Repsol produced 47 individual risk maps, out of which 34 correspond to business units and 13 to corporate units, with a total amount of 421 risks analyzed, part of them related to climate change.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	This risk type is included in Repsol's risk taxonomy. All items of the risk taxonomy enjoy equal relevance in terms of risk assessment, as all of them are deliberately included in the processes of identification, prioritization, analysis and mitigation
Emerging regulation	Relevant, always included	This risk type is included in Repsol's risk taxonomy. All items of the risk taxonomy enjoy equal relevance in terms of risk assessment, as all of them are deliberately included in the processes of identification, prioritization, analysis and mitigation
Technology	Relevant, always included	This risk type is included in Repsol's risk taxonomy. All items of the risk taxonomy enjoy equal relevance in terms of risk assessment, as all of them are deliberately included in the processes of identification, prioritization, analysis and mitigation
Legal	Relevant, always included	This risk type is included in Repsol's risk taxonomy. All items of the risk taxonomy enjoy equal relevance in terms of risk assessment, as all of them are deliberately included in the processes of identification, prioritization, analysis and mitigation
Market	Relevant, always included	This risk type is included in Repsol's risk taxonomy. All items of the risk taxonomy enjoy equal relevance in terms of risk assessment, as all of them are deliberately included in the processes of identification, prioritization, analysis and mitigation
Reputation	Relevant, always included	This risk type is included in Repsol's risk taxonomy. All items of the risk taxonomy enjoy equal relevance in terms of risk assessment, as all of them are deliberately included in the processes of identification, prioritization, analysis and mitigation
Acute physical	Relevant, always included	This risk type is included in Repsol's risk taxonomy. All items of the risk taxonomy enjoy equal relevance in terms of risk assessment, as all of them are deliberately included in the processes of identification, prioritization, analysis and mitigation
Chronic physical	Relevant, always included	This risk type is included in Repsol's risk taxonomy. All items of the risk taxonomy enjoy equal relevance in terms of risk assessment, as all of them are deliberately included in the processes of identification, prioritization, analysis and mitigation
Upstream	Relevant, always included	Upstream risks are considered in our assessments, even though they do not constitute a specific risk type of our taxonomy, because all the Upstream Business Units are included in the scope of the Enterprise Risk Management Process.
Downstream	Relevant, always included	Downstream risks are considered in our assessments, even though they do not constitute a specific risk type of our taxonomy, because all the Downstream Business Units are included in the scope of the Enterprise Risk Management Process.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

As has been provided in the answer to question CC2.2b, we use a bottom-up approach in order to build the Repsol Risk Map.

At the beginning of this process, which by default is executed on a yearly basis, the business and corporate units that manage risk-exposing assets or activities examine the changes that have happened during the last year, and they assess how these changes have modified the internal and external business context.

Based on the results of this context analysis, they identify and prioritize their risks (and opportunities, as many risks have both a downside and an upside). In order to guide the context analysis and the risk identification process, they use a unique corporate overarching taxonomy that prevents the units from omitting any relevant risk. This tailor-made taxonomy contains 72 risk types, which are classified as strategic (22 risk types), operational (38) or financial risks (12).

In Repsol, the risk management process includes typically the stages of the ISO 31000 standard for risk management, which basically comprises the identification, the assessment and the mitigation of risks.

Examples of climate related risks can be found throughout the individual and consolidated risk maps raised by the ERM process in 2017. We can pick Canada Business Unit, where Repsol explores and produces crude oil and natural gas. A physical risk of this business unit that has gone through the ERM process is the shortage of water. Water use is required for well completion operations in several key Canada assets. Water scarcity episodes have occurred in the region over the last years, due to the below average precipitation. Access to rivers and lakes as a source of water is dependent on water permits, water wells are subject to aquifer performance and also neighborhood rights of access. Lack of fresh water can lead to increased use of trucking for water management using alternate sources, which result in added stakeholder concerns. Changing precipitation patterns triggered by climate change could exacerbate this risk in the future.

Another example, in this case of a transitional risk, that has been included in 2017 Canada BU Risk Map, is related to the uncertainty of future Canadian policy on greenhouse gas emissions. The risk refers to the federal carbon levy backstop, which could be triggered in Alberta even though it is supposed to apply only in jurisdictions without any carbon pricing in place. This is not the case of Alberta, where a carbon framework already exists, but certain elements of this framework raise concerns the backstop may be triggered.

These are two examples of risks that have gone through the ERM process. This means that they have been identified and prioritized by the Business Unit. They have been subsequently analyzed in order to ascertain their loss distribution and their severity, measured in terms of their potential effects on the company's P&L, the reputation and the people. The maturity of their mitigating controls has been assessed as well. Additional controls have been proposed and the improvement potential they entail has been rated. The risk profile, together with the judgement on the maturity of the controls and the improvement potential has been reported to the business unit management in order to help them make better decisions, and then the Canada BU risks have gone through the aggregation process so that they have become part of successive consolidated reports to the Exploration & Production Unit management, the ExCom and the Board.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Market: Other

Type of financial impact driver

Market: Change in revenue mix and sources resulting in decreased revenues

Company- specific description

The primary climate-related risk driver is the variation of the cost of raw materials. The company has analyzed the negative impact associated with the cost of raw materials due to multiple causes, for instance, due to an adverse variation in the short term, due to fluctuations in the risk factor or due to structural changes in the prices of raw materials, including an increase in supply as a result of a transition towards a low emission future. All the factors studied which has been considered materials for the company are: • Consolidated structural unforeseen changes in the price of raw materials (crude oil and gas) • Short term positions (Trading y G&P Market Risk). • Volatility of crude oil prices affecting the valuation of stored stocks Market Risk: Long term contracts/assets • Temporary offset between the fixing sale price and the purchase price of raw materials. • Effects on the price of the climate change and energy transition. The upstream business of the company is located in projects onshore and offshore in 31 countries (f.i. Ecuador, Bolivia or Malaysia). The price of the crude oil and gas could have a high impact in the revenue of the company. As an example, the results of the upstream business for 2017, compared to the same period in the previous year, occur in a more favorable environment, marked by the recovery of oil and gas prices (Brent + 24% and Henry Hub +26%) with a noteworthy increase in the last quarter of 2017. This has been the most important factor to reach an adjusted net income in 2017 25% higher than in the same period of 2016.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Potential financial impact

Explanation of financial impact

The financial impact due to the variation of the cost of raw material has been analyze considering all the material factors described above. The results are considered confidential. The company has decided not to publish this information as it could have a high impact in the competitiveness. Regarding the prospective of this variation in prices in the long term, it is true that if the scenarios compatible with the Paris Agreement are met, there will be a drop in demand that will result in low prices for oil and gas. The company is working in analyze in detail the financial impacts associated. Repsol as a company committed with the Task Force on Climate Financial Disclosure recommendations, is currently working on an exhaustive and rigorous analysis on the economic impacts derived from Climate Change. The Risk Division, the Strategy Division, the Sustainability Division, the Communication Division, the Financial Division and the Downstream and upstream Divisions are implied in analysis.

Management method

The company is working and adapting its tools to combat climate change, mitigate its risks and take advantage of its opportunities in the long term, involving all the areas implicated: a) In terms of scenarios, the company uses the Sustainable Development Scenario of the IEA as a benchmark to measure its performance in the long term, which is valued very positively by the stakeholders of Oil&Gas. This analysis of scenarios is what allows the company to make decisions and adjust its long-term strategy. b) Since 2018 the company has an internal carbon price, established with the aim to promote energy efficiency actions, the reduction of methane emissions, the reduction of the routine delivery of gases to the flare, the implementation of new low emission technologies, the anticipation of future climate regulations, the response to demands of the different stakeholders groups (investors, NGOs, society, etc.). It will be applicable to all those CO2 equivalent emissions generated or avoided by investment actions carried out by any of its Business Units. The path of values to apply begins in 2018 with USD 25/t remaining constant until the year 2022, at which time it gradually increases to USD40/t in 2025. This carbon price is applicable in all countries, in all the assets operated by the company, regardless of whether or not there is an ETS or a "carbon tax" in force in the country/region where the asset is located.

Cost of management

573000

Comment

Regarding the cost of management, in 2017 we invested USD 373,000 in Low Carbon Technology studies through the Oil & Gas Climate Initiative (OGCI). To implement the tools developed for the company to manage the risk described the company estimates that its necessary to have two full-time employees. The average cost of one employee is USD 100,000 per year. The total cost of risk management amounts to USD 200,000 per year

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Market: Uncertainty in market signals

Type of financial impact driver

Market: Change in revenue mix and sources resulting in decreased revenues

Company- specific description

Climate change could become a commercial risk if Repsol is not able to adapt their product portfolio and its assets to the requirements of low-emissions society. For example, an increased competition from renewable energy and from the commercialization of hybrid and fully electric vehicles could reduce demand for GHG intensive products. This could be considered a commercial risk that would erode the competitiveness of companies which are not able to adapt to this shift in consumption patterns. The company has analyzed negative impacts associated with a competitive de-positioning. It would be due to an increase of the pressure of local competitors, due to an inadequate commercial strategy or its incorrect application and/or because of the loss of clients due to the markets conditions. Below a list of different factors that has been

analyzed: • Entry of new competitors or improvement of the positioning of current competitors due to an increase in installed capacity or the modification of the complexity of the conversion system. • Improvement of the positioning of competitors by increasing the percentage of utilization of its installed capacity. • Variations in oil supply or demand volumes that modify, unforeseen, the differential between heavy and light crudes. • Deterioration of competitive position in the markets where we have our operations. • Improvement of the competitive positioning of competitors for access to cheaper raw materials or lower production costs. • Potential loss of the operating license in Exploration and Production activities. • Irruption of new competitors with competitive alternative technologies. The company develops its Downstream activity mainly in Spain, Portugal and Peru, and market its products in more than in 50 countries. Competitiveness within the downstream area is a permanent challenge that increases in an environment in which we have to adapt the Company to a low carbon economy. Being able to develop advanced biofuels in the refining area or differentiated sustainable ranges of plastic products for the Chemical division are some examples of challenges of the risk that the company must face

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Potential financial impact

93000000

Explanation of financial impact

This economic impact would result in a reduced stock price and/or a diminished demand for the products we produce as automotive and industrial fuels or chemical products. Repsol can observe that a decrease of 1% in the demand of our products and services would be approximately USD 93 Million per year. This estimation has been done including downstream facilities, considering the figures of the reporting year. Repsol as a company committed with the Task Force on Climate Financial Disclosure recommendations, is currently working on making an exhaustive and rigorous analysis on the economic impacts derived from Climate Change. The Risk Division, the Strategy Division, the Sustainability Division, the Communication Division, the Financial Division and the Downstream and upstream Divisions are implied in the analysis.

Management method

As its explained before, the Company is developing analysis climate scenarios tools to determine the needs of the company to face a low carbon economy future. From this scenarios, Repsol undertakes rigorous market analysis as part of the strategic planning exercises. These analyses take into account evolving demand for its products as a result of many factors including price-pressure and changing market sentiment due to climate change and environmental factors. Financial implications are then factored into the strategic planning. Repsol develops new energy sources and technologies, not only for reducing the energy intensity of our productive processes and facilities, but also to the design of products and services that reduce the GHG emissions in areas as combined heat and power (CHP), electric transportation, biofuels, warm asphalts and autogas. We promote electrical mobility through our participated company IBIL and we continue to consolidate the fast-charging infrastructure for electric vehicles in Repsol Group service stations. In order to reduce the carbon footprint of our processes and products, the Repsol Technology Centre works to identify improvement opportunities and specific investments with an important potential for reducing CO2 emissions. We implement methodologies that identifies potential energy savings in process plants. These tools allow us to obtain a ranking of potential savings and prioritize the allocation of resources for improvement actions.

Cost of management

35700000

Comment

For many years our company has made considerable efforts in: • Developing and marketing of improved fuels and biofuels for transport, helping our customers achieve more efficient, less emission-intensive mobility. • Developing new low-emission technologies and exploring new business models such as electric mobility (through a participated company, IBIL), and alternative energies. More precisely: Repsol has invested during 2017 around USD 22 million in alternatives energies, and USD 1.7 Million to promote the electric mobility through IBIL. In addition, Repsol's Technology Centre sets annual budgets for product and process R&D, which include dedicated areas for low carbon activities. During 2017, approximately USD 12 Million have been invested in GHG reduction emissions R&D.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Mandates on and regulation of existing products and services

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

To face Climate Change the authorities and governments are implementing legislation increasingly more restrictive. This circumstance is a risk for the O&G business model as could affect the NPV of the operations. Among the most relevant factors of uncertainty we can mention the transitions that have to be made in the world economy in the coming years and which can be problematic, such as the withdrawal of stimuli from central banks or the transition of the Chinese economy towards a model of less credit and less investment, that is, towards an economy less dependent on investment and more on domestic consumption. On the other hand there is a notable uncertainty regarding the transition of the energy model regarding the objectives derived from the Climate Summit in Paris, as well as initiatives to protect the urban environment, which may affect the demand for energy. It is worth highlighting the following policies: Structural reform of the European carbon market: To achieve at least 40% EU target, sectors covered by the ETS have to reduce their emissions by 43% compared to 2005. The overall number of emission allowances will decline at an annual rate of 2.2% from 2021 to 2030, compared to 1.74% currently. EU-ETS tries to develop rules to address the carbon leakage risk. Pan Canadian Framework on Clean Growth and Climate Change: Prime Minister of Canada announced that the Federal Government will establish a "floor price" on carbon pollution of USD 7.5 per ton in 2018, rising to USD 37.57/t by 2022. Individual provinces will be able to decide how best to meet established national targets to reduce carbon emissions. Renewable Energy Directive: It establishes an overall policy for the production and promotion of energy from renewable sources in the EU in 2020. RED required the EU to fulfil at least 20% of its total energy needs with renewables by 2020. All EU countries must also ensure that at least 10% of their transport fuels come from renewable sources by 2020. Energy Efficiency Directive: This Directive requires Member States imposing indicative targets for energy efficiency to achieve savings of 20% of primary energy by 2020. Promotion of clean and energy efficiency road transport vehicles: It sets a specific emission target for transport. More precisely light vehicles have to reduce their emissions from 130 gr CO2/km in 2015 to 95 gr CO2/km by 2020

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Potential financial impact

100000000

Explanation of financial impact

The financial impact includes the EU ETS, RED, FQD and Energy Efficiency Directives that has been mentioned before. The result takes into account current legislation by 2020 (Mainly impacts are located in EU). The company is now analyzing new European legislation by 2030 (new EU ETS Directive, 32% of renewable in final energy, etc).

Management method

We are implementing ambitious plans to reduce our CO2 emissions through energy efficiency. As an example, during 2017 we reduced our emissions through specific energy saving actions of CO2e. The result was 216 kt emission reduction actions implemented in our EU refineries and chemical facilities. These measurements have an indefinite timeframe. We support that the effort in the fight against the climate change must be a commitment of the international community. EU must support the competitiveness of the industry, guarantee the safety of supply and assure the sustainability. Repsol has expressed its position directly to the European authorities. We are Fuels Europe and CEFIC members. Through these associations we advocate to keep free allocation to prevent carbon leakage in our downstream business. We are IOGP members as well. Through this association we advocate to include offshore platforms in the carbon leakage list. Currently, we are working on ambitious plans to reduce emissions by 2025 in our Upstream and Downstream businesses. Particularly, in the E&P business: E&P Business Units contribution will be a key element in the future. New CO2 reduction plan is being developed in E&P business unit in order to fully include Legacy Talisman in current Company emission reduction plan. Different departments are involved in this project throughout the Company. Corporate Units: Energy Efficiency and Carbon Department, Asset Management and Regional Business Units.

Cost of management

42000000

Comment

Regarding the cost of management, Repsol plans to invest around USD 550 Million in the period 2011-2020 through our plans of GHG reduction emissions and energy efficiency in our refining and chemical facilities. USD 42 Million were invested in our refineries and chemical facilities in 2017.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Stigmatization of sector

Type of financial impact driver

Reputation: Reduced revenue from decreased demand for goods/services

Company- specific description

In recent years, concern about the negative effects of climate change has become more important, and the Oil and Gas sector has been in the spotlight of many stakeholders. The company has analyzed negative impacts associated with communication actions in any media, made by thirds parties whose purpose is to interfere in the fulfillment of the objectives of the Organization, without taking into account the efforts made to adapt our activities to a low carbon economy. The company operates in sensitive areas where media pressure is a challenge that needs to be managed, to avoid any negative impact in the short, medium and long term. We can mention some examples that materialize the company's exposure to public opinion, in Colombia there is a growing social opposition to the development of hydrocarbon projects, in Malaysia there is a need to reduce GHG emissions or in Ecuador there is an impairment of the Company's image due to accusations made by suppliers during the negotiation of contracts, acquisition of goods and / or services. Additionally, there is a tendency towards activism in countries / geographical areas that are especially sensitive to the effects of climate change (for example, islands or coastal areas).

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Potential financial impact

130000000

Explanation of financial impact

The financial impact due to a reputation would result in a diminished demand for the products we sold as automotive and industrial fuels or chemical products. Repsol can observe that a decrease of 1% in the demand of our products and services would be approximately USD 130 Million per year. This estimation has been done including the results of the company, considering the figures of the reporting year. Repsol as a company committed with the Task Force on Climate Financial Disclosure recommendations, is currently working on making an exhaustive and rigorous analysis on the economic impacts derived from Climate Change. The Risk Division, the Strategy Division, the Sustainability Division, the Communication Division, the Financial Division and the Downstream and upstream Divisions are implied in the analysis.

Management method

The company carries out the management of these risks by increasing transparency and engagement with its stakeholders: This can be found in: • Management Report of the Company, which as of this year includes the sustainability report. • Relationship with ESG investors. • Roadshows with investors at the highest level of the company. • Sustainability Day. The permanent dialogue with the groups of interest is key to know their concerns and to make known our positioning and company strategy. The Company is committed with the Paris Agreement, which central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Repsol belong to different groups and initiatives with the challenges to develop technologies and to take actions to comply with the commitments acquired, some examples are the OGCI Climate Investment, seeks to invest in promising technologies and business models that have the potential to significantly reduce GHG emissions or the Zero Routine Flaring by 2030 of the world Bank, with the objective to minimize the routing flaring before 2030.

Cost of management

483000

Comment

Regarding the cost of management, in 2017 we invested USD 373,000 in Low Carbon Technology studies through the Oil & Gas Climate Initiative (OGCI), in addition all the sustainable information of the company published is verified annually by a third party, the cost of the verification is approximately USD 110,000.

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact driver

Reduced revenues from lower sales/output

Company- specific description

Water scarcity caused by increased incidence of drought poses a risk to Downstream facilities and E&P operations which require water availability. Repsol operates in areas susceptible to water scarcity. We aim to obtain sustainable water management. In 2017, we reused around 15,000 m³ in the company, 30% more than in 2016. Most water is withdrawn in refining and chemical activities (92%) used in processes such as cooling and producing steam. In terms of E&P production water is often injected back into deposits during operations. Scarcity of water might require the stoppage of our production hampering normal operation or interrupting supply chain. Incidence into oil wells would have consequences associated with lost production. Some of Repsol's facilities are located in water stress areas, mainly in the East of Spain (f.e Cartagena and Tarragona) or Bolivia (f.e Margarita production facility). The calculation has been made using the GWT for the O&G sector and other studies available at a local level with more information. We have considered an area under water scarcity when the projected renewable water availability by 2025 is below 1,700 m³/person/y. Water scarcity poses a risk to biofuels manufactures too. A great deal of water is required to produce fuel from biologic feedstock. The sustainability of biofuels is in question if requirements for water cannot be decreased. The vast majority of the water used to produce biofuels is consumed during agricultural steps. Certain biofuel feedstock cannot be used to sustainably produce biofuels. Some feedstock, like cellulosic feedstock (generally just left over after food crops are harvested) uses less water, but nowadays cannot be obtained on a large-enough scale to meet current fuel demand < 6 years. The AR5 explains that there is a tendency for drying of the mid-continental areas during summer, indicating a greater risk of droughts in those regions. Changes in precipitation extremes and droughts caused by climate change could increase the number of our installations located in water stress areas or aggravate the magnitude of this impact in those that are currently affected by this risk, using biofuels to reduce GHG may be only possible developing advanced biofuels that don't require such a high quantity of water. This can be a potential risk because it will increase biofuels manufacture cost.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

High

Potential financial impact

130000000

Explanation of financial impact

Repsol has estimated that the reduction in availability of water from surface resources and aquifers in water stress areas could impact our facilities, in the worst scenery, below USD 130 Million/annual taking into account a reduction of 1% in the production capacity. This number is an estimate over the gross margin of our assets. In addition, water scarcity may suppose an increase in the biofuels manufacture cost. Despite of this, we will have to be able to continue incorporating biofuels in our gasolines and diesels in order to comply with Fuel Quality and Renewable Directives.

Management method

Repsol considers water as a strategic resource and has strengthened local management with a global and homogeneous view on the application of standards and best practices with the development of the Repsol Water Tool (RWT). It enables a detailed vision of water management and the risks associated to each asset, and the definition of improvement Plans in our Business Units. Compliance with actions included in the long-term plans has been introduced as a company target. In 2017 more than 85% of the actions defined in the Water Plans were carried out, globally and by businesses. Development of new lines of action have been carried out in 2017 in La Pampilla refinery, where a water studio was conducted with the same objective, resulting in a new Improvement Plan. Regarding biofuels manufacturing, Repsol follows two lines of action that help to reduce CO₂ emissions without increasing water withdrawal: (a) The promotion of advanced biofuel projects (from non-food raw materials, biomass) with strong technological development and heightened sustainability. At Repsol's Technology Centre we have projects in the development phase for both biotechnology and thermochemical processes;(b) The production of Hydrotreated Vegetable Oil (HVO) and hydrobiodiesel in our refineries. In addition, our facilities are operating under the International Sustainability & Carbon Certification (ISCC) and RED Bioenergy Sustainability Assurance (RBSA) schemes.

Cost of management

25000000

Comment

Globally, the costs associated to the water management in Repsol were USD 22 Million in 2017. In the last years, we have invested in some projects to reduce the impact in the water stress areas. As an example, in Tarragona it has been invested around USD 7.4 Million and that include a regeneration plant of urban waste water in 2016. In 2017 we carried out a water studio in La Pampilla refinery in collaboration with a specialized external advisor. We conducted a detailed revision of: 1) the different water sources to ensure future water supply, 2) the water use to identify operational improvements and improve efficiency and 3) water treatment processes in order to minimize impacts. The cost associated to this water analysis were USD 0.2 Million. We estimate future initiatives in LaPampilla refinery as a result of the conclusions and recommendations obtained. Repsol's Technology Centre sets annual budgets for product and process R&D. In 2017, USD 3.2 Million were allocated to biofuels

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Rising mean temperatures

Type of financial impact driver

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

The Fifth Assessment Report of IPCC (AR5) explains that average warming for the period 2016-2030 is likely to be +0.3°C and +0.7°C, compared with the period 1986-2005; and potentially as high as +4.8°C by the end of the century. Changes in temperature as a result of climate change pose different risks to Repsol: One of them is the loss of performance in our Combined Heat and Power installations (CHP) in the Industrial Division (Refining and Chemical Areas). If the ambient temperature increases, it causes a loss in yield due to the decrease in the mass flow rate into the gas turbines as air density decreases. Additionally, hot weather conditions can also be a risk for the functioning of the cooling towers. Cooling is less efficient when the temperature of water increases. Other effect analyzed is the risk of thaw. In 2011, Repsol and Alliance Oil Company signed a joint venture for exploration and production of hydrocarbons and we are working together in Siberia. The activity peak season is November to April, during winter, at temperatures of -45 °C, because it is the correct time for drilling wells, construction and operation of the facilities. It's during these months when the transport and distribution systems can be operated properly. The area again melts in spring and becomes a big swamp accessible only by helicopter and caterpillar vehicles, disrupting the transportation of the staff and materials and the distribution of oil and gas produced. A similar situation occurs in Alaska at North Slope where also Repsol is working. The AR5 also explains that is very likely that heat waves will be more intense, more frequent and longer lasting in a future warmer climate, which could cause the thawing of permafrost that means a risk of shorter winters that would alter the access to fossil fuel reserves and increase our operational costs.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium-high

Potential financial impact

102000000

Explanation of financial impact

Repsol generates through CHP installations the power and steam their industrial processes need. The power that is not consumed in our industrial processes is sent to the national power grid. A loss in yield will reduce our capacity to generate steam and electricity. CHP electric equivalent yield is around 70%. The estimated financial implications would be USD 9 Million/year (yield reduction of 5%) A reduction of the cooling efficiency may result in a slowing down of the downstream facilities production. A decrease of 1% in the products sold would have an estimated financial implication of USD 93 Million per year. Is an estimate over the gross margin of our downstream facilities Also, the production activity of this kind of areas requires very high investment; thawing permafrost affects the buildings, pipelines, airfields, and coastal facilities. The damage would have a high cost of maintenance and a shorter O&G exploration season has a negative impact on the economic results.

Management method

The company continues to advance in the development of adaptation measures to climate change. We are conducting a detailed review of the physical risks that could potentially affect to each business unit in order to improve and complete the risk management that is being done. Repsol is evaluating how to implement the necessary measures to improve the adaptive capacity of our facilities in order to cope with climate-related extreme weather events. Different alternatives are being implemented (for example Exhaust Gas Heat exchangers in our Heat Recovery Steam Generators). In 2017, Repsol has implemented GHG reduction emissions and energy efficiency initiatives, where the actions in CHP installations plays an important role to tackle the GHG company target. In 2017 the company has implemented actions which has reduced 216 kt GHG. Projects in Siberia and Alaska are an important technical challenge that allows us to prepare our people and innovate in technology. Repsol is working in this kind of projects since 2006 and it is implementing the right measurement to minimize the risks. Thanks to these described methods the magnitude of the risks is expected to be reduced to a certain extent. The methods have an indefinite timeframe.

Cost of management

47000000

Comment

Internal resources are used to evaluate different alternatives to minimize this risk. During 2017, Repsol has invested USD 47 Million in GHG reduction emissions and energy efficiency.

C2.4**(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes

C2.4a**(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.****Identifier**

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Type of financial impact driver

Reduced operational costs (e.g., through use of lowest cost abatement)

Company- specific description

Energy transition can be an opportunity for Repsol because we are developing a lot of programs to improve Energy Efficiency and reduce GHG emissions in our processes. Specifically Repsol conducts energy audits and keeps training their staff in the different Business Units to find savings and possibilities for reducing their energy consumption. Related to that, Repsol is setting Energy Management System (EnMS) in their facilities under the international standard ISO 50001. Related to this issue,

flaring of gas contributes to climate change and impacts the environment through emission of CO₂, black carbon and other pollutants. Flaring is a safety measure of the oil and gas processes; so, all of the initiatives towards flare gas reduction are focused on reducing the so called routine flaring. E&P is our business affected by this new commitment due to the fact that their installations normally have routine flaring (these assets are normally located in places without the necessary infrastructure to take advantage of flaring recuperation). This can be an opportunity for Repsol because flaring wastes a valuable energy resource that could be used to advance the sustainable development of producing countries. In addition, several initiatives have been established to regulate methane emissions. Methane is 25 times more potent than CO₂ and many consider the gas industry to be one of the largest man-made emitters of methane after agriculture. The International Energy Agency identified minimizing methane emissions from upstream oil and gas production as one of five key global greenhouse gas mitigation opportunities, noting that low-cost reductions in this area could account for nearly 15% (over 0.5 Gt CO₂-eq) of the total greenhouse gas reductions needed by 2020 to keep the world on a 2-degree path. Reducing methane emissions can be an opportunity for Repsol to increase gas production capacity.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Potential financial impact

32000000

Explanation of financial impact

Repsol is implementing Energy Management Systems in their facilities according to the requirements of ISO 50001. Therefore, monetary savings related with non-used energy are obtained. The annual monetary savings reached in 2017 due to the implementation of energy efficiency actions have been USD 32 Million. The figure has been calculated considering only the facilities that are currently certified under ISO50001 in the EU. Flaring reduction initiatives have an economical profit potential associated to the gas sales or to the possible use of the gas as internal fuel. 5% of total Repsol CO₂ emissions are due to flaring. In 2017 a total of 0.29 million tons of gas for flaring were sent for internal use. Repsol Environmental Performance Practices establish that Upstream new installations shall not be designed to continuously vent or flare gases under normal operating conditions. Methane reduction initiatives have an economical profit associated to increase gas production capacity.

Strategy to realize opportunity

We promote the development of GHG reduction opportunities. Our catalogue of GHG emission reduction opportunities is continuously updated and nearly 1,500 actions have already been identified in our facilities worldwide. All our Business Units carry out energy efficiency programs that develop specific activities to improve its energy performance. In 2017, more than 222 savings actions were carried out in our facilities. Moreover, 8 facilities and 1 multisite business are currently certified under ISO 50001. On the 10th of June of 2016 Repsol has signed the Memorandum of the Understanding of the Climate and Clean Air Coalition: Oil&Gas Methane Partnership initiative, to implement methane emission reduction projects in collaboration with other companies, institutions and governments. This endorsement is fully aligned with Repsol policies and commitment as part of the OGCI. Repsol is developing a plan to manage methane emissions that considers procedures and actions already developed, as well as new initiatives (e.g.LDAR programs) in order to achieve further methane emissions reductions in all our operations. On June 10th 2016, Repsol has endorsed the Zero Routine Flaring by 2030 World Bank Initiative, which allows us to collaborate with other companies and institutions to look for the most advanced technologies that minimize the routine gas flaring by 2030. Around 75% of our portfolio is natural gas, so minimizing the sources of methane is a priority for our company.

Cost to realize opportunity

613000

Comment

Regarding the cost to realize the opportunity, Repsol plans to invest around USD 550 Million in the period 2011-2020 through our plans of GHG reduction emissions and Energy efficiency in our refining and chemical facilities. To the implementation of EnMS we dedicate one full-time worker (estimated in USD 150,000, considering 100 USD/h) and an annual certification cost about USD 90,000 to cover all of our certificated facilities). In order to boost the struggle against climate change, in 2017 we invested USD 373,000 in Low Carbon Technology studies through the Oil & Gas Climate Initiative (OGCI). In addition, in 2016 a fund was created by OGCI (OGCI Climate Investment) to invest US\$1 billion over 10 years to develop and accelerate the commercial deployment of low-emission technologies.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

Current and future regulatory and social requirements related to climate change generate business opportunities for Repsol. These new requirements increase the demand of low-emission products and services, open up new markets and boost access to market shares. For example, within the EU Commission's Climate and Energy Package 2020, the RED provides an important stimulus to the demand for renewable energies and biofuels or The Circular Economy Package which provides the opportunity to develop more sustainable products or services or raw materials reducing the environmental impact in all their life cycle. This represents an essential legal framework and a decisive step towards promoting the development of renewable energy sources or new sustainable products and services. This is an opportunity for Repsol since it is possible to create in the long term new business lines associated to low emission products and services. We endeavor to promote, boost and provide business grounding to new initiatives that contribute to a more diversified future energy mix with lower CO₂ emissions. Repsol is working in the design of products that reduce GHG emissions when used. Our Technology Center uses R+D+i to improve and continually reduce emission intensity throughout the value chain. This enables a reduction in our customers' carbon footprint during the transformation or use of the products we market. We are working in different fields related with green asphalts, fuels and lubricants. Repsol is working on alternative electricity generation and new mobility schemes. Through IBIL, we invest in electric mobility, providing a comprehensive recharging service using 100% renewable energy, smart facilities and terminals, and a control center for the infrastructure. We had also invested in technology-based start-up that boosts our activities.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium

Potential financial impact

10000000

Explanation of financial impact

We have been investing since 2010 in transport electrification, advanced biofuels, energy storage and renewable electricity generation. New Ventures Division identifies new opportunities, investing in technology-based start-ups and new energy sources. We continue working on the INNVIERTE program which is part of the 2013-2020 Spanish Strategy of Science, Technology and Innovation. The program consists of an agreement with the CDTI for co-investment in Spanish technology SMEs from the alternative energy and efficient energy sphere. The joint commitment is USD 9.3 Million, where Repsol invests USD 5.3 Million and manages the portfolio of companies produced. Our investment in promoting electric mobility has been in 2017 of USD 1.7 Million. Financial implications are difficult to quantify, but we can observe that an increase of 1% in the products sold would have an estimated financial implications of about USD 93 Million per year (considering the downstream figures of the reporting year).

Strategy to realize opportunity

The strategy to realize the opportunity have different lines: (1)Monitoring trends and latest technologies developed in renewable energy: - Investing in sustainable mobility and contribute to emissions reductions via production and research on biofuels: (a)Promoting advanced biofuel projects; (b)Producing HVO or hydrobiodiesel in our refineries (2)Developing new products made from alternative raw materials (waste, renewable materials...) and life cycle analysis studies to quantify environmental impacts of the new products. As an example, the research strategy into asphalts is based on the development of eco-efficient processes and products. (3)Investing in electric mobility through IBIL. We have more than 1,000 operational charging points, and we are consolidating the fast-charging infrastructure in our service stations. (4)Promoting the use of Autogas in direct injection liquid phase engines (712 supply points, and gradually extending our network). (5)Encouraging innovation, development and research in other different fields: (a) Catalysts and processes for the use of CO2 as a raw material for polymers, (b) research of new technologies to help electric car batteries charge more rapidly and last longer, (3) Development of micro-organisms based on a new synthetic metabolic route, for the generation of new advanced biofuels. As part of OGCI one of the working groups is related to energy efficiency in transport and in exploring low emissions technologies in transport.

Cost to realize opportunity

36000000

Comment

Regarding the cost to realize the opportunity, Repsol has invested during 2017 around USD 22 million in alternative energies, and USD 1.7 Million to promote the electric mobility through IBIL. Repsol's Technology Centre sets annual budgets for product and process R&D, which include dedicated areas for low carbon activities. During 2017, approximately USD 12 Million have been invested in GHG reduction emissions R&D. In 2016 a fund was created by OGCI (OGCI Climate Investment) to invest US\$1 billion over 10 years to develop and accelerate the commercial deployment of low-emission technologies. To provide innovative services to our LPG clients, we have a specific department in our company structure. There are two people responsible for the management of this issue. Considering 100 USD/h, the cost of management is USD 300,000 per year. In addition, costs of external collaborators in consultancy and implementation are about USD 35,000 per year.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Reduced water usage and consumption

Type of financial impact driver

Reduced operating costs (e.g., through efficiency gains and cost reductions)

Company- specific description

We manage our water resources sustainably by constantly seeking solutions to ensure that we use water responsibly and efficiently, preserve its quality, and advance towards a Circular Economy model. The application of the hierarchical controls of replacing water use, reducing water consumption, and the reuse and recycling of water needs are areas in which our company needs to continue working in order to promote opportunities in water management. Water efficiency within oil and gas operations can be optimized through the use of technology and other management practices that are appropriate to the local social, environmental and economic conditions. The promotion of integrated water resource management within the industry can lead to opportunities such as greater efficiency of water use, costs reductions, compliance with new regulations, etc. For Repsol, the need to optimize the efficiency of water use in oil and gas operations is essential. In addition, Repsol is searching business opportunities related to water scarcity, examining market niches in which our company could work and be competitive. In this sense, studies have concluded that produced water of our E&P assets may be valorized, moving from being a cost to represent an opportunity.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium

Potential financial impact

2200000

Explanation of financial impact

The O&G industry is increasingly becoming a water management industry. By 2020, the industry will generate over 500 million bbl of produced water/day. With effective management this water can be a source of value. The global market for water management solutions and services in the onshore O&G industry is worth around USD 37.9 billion. The market for water-tech is growing globally. The business opportunities will be higher in water scarcity areas. Repsol handle annually 60 Million m3 of produced water, which suppose a cost of about USD 220 Million per year. In case we could find new business opportunities related to produced water and achieve a reduction of 1% in the management costs, we would save USD 2.2 Million per year. In addition, water scarcity may suppose an increase in the biofuels manufacture cost. Increment of cost are estimated in USD 30 Million if costs of biofuels increase 20%.

Strategy to realize opportunity

Repsol has been minimizing the use of water in each of our facilities for decades. The company has developed the Repsol Water Tool (RWT) which incorporates aspects of the IPIECA Global Water Tool and the GEMI Local Water Tool. RWT allows us to have a detailed vision of the risks associated to each center and the possibility to improve water management. E.g. in 2017 we carried out a water studio in La Pampilla refinery in collaboration with a specialized external advisor. We conducted a detail revision of: 1) the different water sources to ensure future water supply, 2) the water use to identify operational improvements and improve efficiency and 3) water treatment processes

in order to minimize impacts. Another example of a new business opportunity has been analyzed in our E&P facilities. Water is presented in our wells, and it is extracted with the oil and gas. Produced water is often used as an injection fluid. Produced water, being contaminated with hydrocarbons and solids, must be disposed of in some manner, and disposal to sea or river will require clean-up first. However, the processing required to render produced water fit for reinjection may be equally costly. The treatment and valorization of produced water will reduce injection costs and may imply the generation of new incomes where water has a market, apart from other strategic profits and company image improvement.

Cost to realize opportunity

800000

Comment

The water studio that we carried out in 2017 in La Pampilla refinery to improve water management opportunities had a cost of USD 0.2 Million. In the produced water treatment process for alternative uses (other than reinjection), the most important cost is the desalination, and depends on the total dissolved solids (TDS) to be removed. The average cost estimated is around 1 USD/m³. Repsol handle annually 60 Million m³ of produced water. In case we could find new business opportunities related to 1% of our produced water, the cost of management would be around USD 0.6 Million per year.

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

Governments around the world have signed-up to a climate change goal of limiting the temperature increase since pre-industrial times to no more than 2°C, the limit that the IPCC (International Panel for Climate Change) establishes as the maximum to avoid climate change. The challenge of providing more energy with less CO₂ emissions can be an opportunity for Repsol. We recognize both the importance of the climate challenge and the importance of energy to human life and well-being. An increase of the electricity demand will be one driver to reach a low emission future, but this energy has to be produced with low emissions at the low cost for the society. Natural gas is the lowest carbon-intensive fossil fuel is the best alternative to reduce emissions in the power sector link to the CCS technology. It represents nowadays a great portion of our main reserves (around 65% of our production and 75% of our reserves are gas). Repsol is undertaking real and sustainable actions to manage emissions and enhance the role of natural gas in the near future. Being Natural Gas the fossil fuel with less CO₂ emissions, Repsol would be able to provide more energy with less CO₂ emissions than its competitors, increasing its revenues.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium-high

Potential financial impact

2000000

Explanation of financial impact

The potential financial impact of this opportunity is an increase of the revenues thanks to an increase of the demand for electricity and gas natural. Increment electricity demand: Repsol generates through Combined Heat and Power installations (CHP) the power and steam their industrial processes need. The power that is not consumed in our industrial processes is sent to the national power grid. The main impact implies more revenues from the electricity that our CHP installations are sending to the grid. The positive impact would be from USD 2 Million per year (10% wholesale electricity market increment) to USD 4 Million per year (20% wholesale electricity market increment). Increment gas natural demand: It is difficult to estimate the positive impact for the company, given the different markets where natural gas is sold. Nevertheless, every increase of 0.1 USD\$/Mbtu in the final price, would mean a profit of USD 95 million (taking into account Repsol's natural gas production).

Strategy to realize opportunity

Natural Gas (lowest carbon-intensive fossil fuel) represents a great portion of our business (65% of our production and 75% of our reserves). We are undertaking real and sustainable actions to manage emissions and enhance the role of natural gas in the near future. As signatory of the OGCI Joint collaborative declaration we have made a public commitment to collaborate with the other signatory companies in different areas, including natural gas developments: -Contributing to increasing the share of gas in the global energy mix. -Ensuring the natural gas we provide for power generation results in significantly lower life cycle emissions than other fossil fuels -Reducing CH₄ emissions from our operations In 2016 we joined to the Climate and Clean Air Coalition Oil&Gas Methane Partnership initiative, to implement CH₄ emission reduction projects in collaboration with other companies, institutions and governments. We seek to eliminate barriers and come up with technical and economically viable solutions. This endorsement is fully aligned with our policies and commitment as part of the OGCI to reduce CH₄ emissions from our upstream activities; we have established our Environmental Performance Practices. E&P existing facilities programs for the VOC Leak Detection and Repair (known as LDAR, SMART LDAR or LDAR HYBRID) should be implemented to detect leaks and proceed to their repair. These technologies are also applied in the our downstream facilities.

Cost to realize opportunity

373000

Comment

Regarding the cost to realize the opportunity, in 2017, the adhesion costs to the OGCI initiative has been USD 373,000. In addition, in 2016 a fund was created by OGCI (OGCI Climate Investment) to invest US\$1 billion over 10 years to develop and accelerate the commercial deployment of low-emission technologies.

Identifier

Opp5

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Ability to diversify business activities

Type of financial impact driver

Other, please specify (Increased diversif of financial assets)

Increased diversification of financial assets

Company- specific description

Searching other financing sources for low emissions projects. Green Bond market aims to enable and develop the key role debt markets can play in funding projects that contribute to environmental benefits. Green Bonds are any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance new and/ or existing eligible Green Bond Projects such as renewable energy, energy efficiency; pollution prevention and control; terrestrial and aquatic biodiversity conservation or climate change adaptation among others. They are intended for use by market participants and are designed to drive the provision of information needed to increase capital allocation to such projects. With a focus on the use of proceeds, the Green Bonds Principles aim to support issuers in transitioning their business model towards greater environmental sustainability through specific projects. Source: The Green Bond Principles 2017 (ICMA) With the issuance of a Green Bond, Repsol reinforces its commitment with Corporate and Social Responsibility demonstrating its investment in sustainable purposes. Repsol is convinced that innovation and technological development are essential for ensuring reliable and sustainable supply in the long term. That is why; financing our projects with a green bond we are contributing to a low emissions future.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Potential financial impact

5000000

Explanation of financial impact

OECD estimated that the green bond market could increase to USD 4.7 trillion to USD 5.6 trillion in outstanding bonds by 2035, with annual issuances of USD 620 billion to USD 720 billion. Green Bonds can advance adoption of innovative new technologies, finance projects that provide green jobs, and promote economic and climate resiliency across regions. Green bonds are an excellent way to secure large amounts of capital to support environmental investments that may not otherwise be available, or that may be uneconomic using more expensive capital. Green bonds are well suited for large-scale sustainability projects such as wind and solar development, which often require capital investment ahead of revenues, and which generate modest revenue over a longer investment horizon. More precisely, for Repsol this Green Bond is an opportunity to improve its financing costs. An improvement in the interest rate by a total of 100 basis points could imply savings of USD 5 Millions

Strategy to realize opportunity

We have established a framework of eligible projects to avoid GHG emissions through the implementation of energy efficiency and low emissions technology investments that contribute to energy efficiency and the climate change mitigation. The investments projects must have a positive environmental impact (avoidance of GHG emissions) and shall be aligned with Repsol sustainability policies to be selected as eligible. The projects are part of an active plan to avoid 1.9 million of tons of GHG emissions annual run rate by 2020. This bond complies with the Green Bond Principles in its four core components: 1.Use of Proceeds: Repsol will allocate the proceeds of the bond to finance and refinance eligible projects aimed to avoid GHG emissions 2.Process for Project Evaluation and Selection: Repsol will outline a process to determine the eligible projects, the related eligibility and the environmental, social and governance (ESG) criteria 3.Management of Proceeds: The use of proceeds will be allocated to the eligible projects selected 4.Reporting: Repsol will publish a an annual basis report verified by an external auditor, disclosing: the expenditure commitments of the eligible projects and the absolute GHG emissions avoidance arising from these eligible projects for each category on an aggregate basis by technical typologies and activity An ESG agency has certificated the integrity of the requirements and evaluation of the selected projects issuing an external opinion.

Cost to realize opportunity

565000000

Comment

Regarding the cost to realize the opportunity, Repsol issued a certified Green Bond to fund more than 300 energy efficiency projects, capturing USD 565 Million of investment to cut emissions by improving efficiency through innovation and technology. Repsol commits to allocate the proceeds of a given Green Bond issuance within a three-year period from the issue date of the Green Bond issuance. The share of refinancing will not exceed a 55% of the proceeds.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Not yet impacted	Climate change could become a commercial risk if Repsol is not able to adapt their product portfolio and its assets to the requirements of low-emissions society. The company has analyzed negative impacts associated with a competitive de-positioning. It would be due to an increase of the pressure of local competitors, due to an inadequate commercial strategy or its incorrect application and/or because of the loss of clients due to the markets conditions. The company develops its Downstream activity mainly in Spain, Portugal and Peru, and market its products in more than in 50 countries. Competitiveness within the downstream area is a permanent challenge that increases in an environment in which we have to adapt the Company to a low carbon economy. Long term impact. The company is foreseeing these risks in the long term that is why the long term target is in 2040.
Supply chain and/or value chain	Not yet impacted	The company analyzes the negative impact associated with the cost of raw materials due to multiple causes, for instance due to fluctuations in the risk factor or due to structural changes in the prices of raw materials, including an increase in supply as a result of a transition towards a low emission future. All the factors studied which has been considered materials for the company are: • Consolidated structural unforeseen changes in the price of raw materials (crude oil and gas) • Short term positions (Trading y G&P Market Risk). • Volatility of crude oil prices affecting the valuation of stored stocks Market Risk: Long term contracts/assets • Temporary offset between the fixing sale price and the purchase price of raw materials. • Effects on the price of the climate change and energy transition. Regarding the prospective of this variation in prices in the long term, it is true that if the scenarios compatible with the Paris Agreement are met, there will be a drop in demand that will result in low prices for oil and gas. The company is working in analyze in detail the financial impacts associated. The company is foreseeing these risks in the long term that is why the long term target is in 2040.
Adaptation and mitigation activities	Not yet impacted	Repsol has estimated that the reduction in availability of water from surface resources and aquifers in water stress areas could impact our facilities. Water scarcity potentially caused by increased incidence of drought poses a risk to some refining, chemical facilities and exploration and production operations which require water availability. In terms of E&P, production water is often injected back into deposits during operations to extract oil and gas. The scarcity of water might require the stoppage of our production facilities hampering normal operation or interrupting supply chain. Besides, incidence into oil wells would have important consequences associated with lost production. The company is foreseeing these risks in the long term that is why the long term target is in 2040.
Investment in R&D	Impacted	Climate change could become a commercial risk if Repsol is not able to adapt their product portfolio and its assets to the requirements of low-emissions society. The company has analyzed negative impacts associated with a competitive de-positioning. It would be due to an increase of the pressure of local competitors, due to an inadequate commercial strategy or its incorrect application and/or because of the loss of clients due to the markets conditions. Repsol is investing in technology related with new energies. We develop market products and services that enable GHG emissions to be reduced or avoided, in areas as combined heat and power (CHP), electric transportation, biofuels, warm asphalt and autogas. Long term impact. The company is foreseeing these risks in the long term that is why the long term target is in 2040.
Operations	Impacted	To face Climate Change the authorities and governments are implementing legislation increasingly more restrictive. This circumstance is a risk for the oil and gas business model as could affect the NPV of the operations. Within the climate policies that are being carried out to achieve the objectives established in the Paris Agreement, it is worth highlighting in our downstream business: • Structural reform of the European carbon market. Regarding our upstream business is worth to highlight: • Pan Canadian Framework on Clean Growth and Climate Change. Repsol evaluate these risks in 2020 and 2025 timeframe.
Other, please specify	Please select	

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Please select	
Operating costs	Please select	
Capital expenditures / capital allocation	Impacted	Regarding the cost of management, Repsol plans to invest around USD 550 Million in the period 2011-2020 through our plans of GHG reduction emissions and energy efficiency in our refining and chemical facilities. USD 42 Million were invested in our refineries and chemical facilities in 2017.
Acquisitions and divestments	Not yet impacted	The company business objectives and strategy is the target set for 2025 to: • Have more than the 15% of the wholesale gas: Creating a successful wholesale gas business, ensuring competitive gas supply, developing new business through gas flexibility and delivering a competitive gas offer for our future retail clients. • Have more than 5% of the retail gas and power: Becoming a relevant Spanish low carbon multi-energy retailer and progressively sophisticate our offer including advanced energy services and solutions. • Low carbon generation of 4.5 GW: Developing a strong position in Spain achieving a low carbon integrated business, technological vocation oriented to solar, wind, CCGT and other low carbon technologies and diversifying in emerging countries that yield higher returns.
Access to capital	Impacted	Green Bond market aims to enable and develop the key role debt markets can play in funding projects that contribute to environmental benefits. Green Bonds are any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance new and/ or existing eligible Green Bond Projects such as renewable energy, energy efficiency; pollution prevention and control; terrestrial and aquatic biodiversity conservation or climate change adaptation among others
Assets	Please select	
Liabilities	Please select	
Other	Please select	

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, quantitative

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Repsol carries out and has a carbon strategy, which is based on scenario analysis that shows how the company can adapt its activity to a low emissions future. The way in which the company evolves and adapts to that future is determined by the "levers" employed and how they impact individually in the achievement of the target set.

The target is to reduce the company's carbon intensity by 40% in the year 2040 according to the SDS scenario of the International Energy Agency. And in order to achieve this goal, partial objectives are established that bring with them relevant decisions and actions that are detailed below:

- Energy Efficiency: Company plans are available (reduction of 1.9 Mt CO2 between 2014 - 2020).
- Methane: Adhesion to the CCAC-OGMP initiative. Currently defining company objective.
- Flaring. Adhesion to the Zero Routine Flaring by 2030 initiative. Currently defining company target.

The sale of the company's stake in Gas Natural Fenosa should be highlighted as the most relevant action in this regard. This divestment has been carried out precisely to make the company grow in the following fields:

- Upstream projects with special focus on the production of natural gas.
- Invest also in the gas chain where we are not present: combined cycles, end customers, etc.
- Invest in renewable energy projects.

C3.1d

(C3.1d) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios	Details
IEA Sustainable development scenario	The Agency is one of the highest authorities in energy issues and is recognized worldwide. That is why we have chosen this scenario, without making modifications. The indicator selected will be determined by the company's position on climate change (CC). Repsol is committed to combating CC while providing access to the energy that society needs. Therefore, our commitment to society is to supply energy (GJ) with the lowest possible emissions (t CO2). Our global performance indicator as a company is t CO2 / GJ. The indicator takes into account GHG emissions directly caused by a company's downstream operations and other emissions as those procured by the company upstream activities (scope 1 and 2). In addition, GHG emissions from our products are also considered (scope 3). GJ of energy are those included in our products, the energy consumed in our operations is not included. We analyze how the different actions that the company can carry out impact on the indicator: Upstream: Change in O&G production mix, tCO2 captured in CCUS projects in which the company participates, Methane emissions Reduction, Flaring reduction and Energy efficiency Downstream: Energy efficiency, Fall demand transport, Increase Biofuels, CCUS Projects in Industrial Centers, Non-energetic uses and Purchase green H2 to third parties Others: Incorporation of renewable energies into our energy mix, Incorporation of "natural sinks" and Presence in the entire gas chain: Final gas consumers The time horizon is 2040, time that is estimated to be able to carry out the transition towards this future low in emissions and according to the times managed in the energy sector. The entire organization must be involved in achieving the company's targets. The results obtained are part of the company strategy, so we cannot give a detailed description of them here. If we can indicate that: All the levers previously described will be necessary to achieve the objectives and Being an energy company offering consumers a portfolio of low carbon energy solutions will be fundamental. Repsol is already working on it to be an energy company. The 2016-2020 Strategic Plan has been updated, is based on three pillars: increasing shareholder distribution; profitable business growth (Upstream and Downstream); and the development of new businesses linked to the energy transition through new initiatives. The company has presented USD 17 billion of total investment, 4 billion will be allocated for new initiatives, especially in the Downstream unit, for the petrochemicals business expansion, service stations, lubricants and trading, as well as for low-emissions projects, USD 2.8 billion. Repsol has established a roadmap for the energy transition that includes ambitious market share targets based on gas development and low-emissions generation. In line with our commitment to the fight against climate change, we will reduce CO2 emissions by 2.1 million metric tons by 2020 from 2016 An example of how the analysis have influenced the company business objectives and strategy is the target set for 2025 is to have: - 15% of the wholesale gas: Creating a successful wholesale gas business, ensuring competitive gas supply, developing new business through gas flexibility and delivering a competitive gas offer for our future retail clients. - 5% of the retail gas and power: Becoming a relevant Spanish low carbon multi-energy retailer and progressively sophisticate our offer including advanced energy services and solutions. Low carbon generation of 4.5 GW: Developing a strong position in Spain achieving a low carbon integrated business, technological vocation oriented to solar, wind, CCGT and other low carbon technologies and diversifying in emerging countries that yield higher returns. The company have set a monitoring procedure which measures the emissions reduction intensity. In 2020 we have to reach a reduction of 3% to achieve the long-term goals set. This results are public information.

The 2016-2020 Strategic Plan has been updated, is based on three pillars: increasing shareholder distribution; profitable business growth (Upstream and Downstream); and the development of new businesses linked to the energy transition through new initiatives.

The company has presented USD 17 billion of total investment, 4 billion will be allocated for new initiatives, especially in the Downstream unit, for the petrochemicals business expansion, service stations, lubricants and trading, as well as for low-emissions projects, USD 2.8 billion.

Repsol has established a roadmap for the energy transition that includes ambitious market share targets based on gas development and low-emissions generation.

In line with our commitment to the fight against climate change, we will reduce CO2 emissions by 2.1 million metric tons by 2020 from 2016.

An example of how the analysis have influenced the company business objectives and strategy is the target set for 2025 is to have:

- 15% of the wholesale gas: Creating a successful wholesale gas business, ensuring competitive gas supply, developing new business through gas flexibility and delivering a competitive gas offer for our future retail clients.

- 5% of the retail gas and power: Becoming a relevant Spanish low carbon multi-energy retailer and progressively sophisticate our offer including advanced energy services and solutions.

Low carbon generation of 4.5 GW: Developing a strong position in Spain achieving a low carbon integrated business, technological vocation oriented to solar, wind, CCGT and other low carbon technologies and diversifying in emerging countries that yield higher returns.

The company have set a monitoring procedure which measures the emissions reduction intensity. In 2020 we have to reach a reduction of 3% to achieve the long-term goals set.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

% reduction from base year

13.9

Base year

2010

Start year

2014

Base year emissions covered by target (metric tons CO2e)

13662231

Target year

2020

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% achieved (emissions)

75.2

Target status

Please select

Please explain

Our decision taking and lines of action on climate change is performed at the highest hierarchical level within the company. The Executive Committee and the Sustainability Committee have the task of proposing the approval of the strategy and guiding and monitoring the objectives, action plans and practices of the company on sustainability, including the climate change issues. In 2013 our 2006-2013 reduction target of 2.5 million tons of CO2e was achieved. We far exceeded the goal set, reaching a reduction of 3.1 million tons at the end of the period. The company has set a new target for the 2020 horizon: the reduction of 1.9 million ton of CO2e in the period 2014–2020, using 2010 base line activity as a reference. Since 2014 we have driven actions which reduced CO2e by 1.4 millions of tons. Annually, and linked to our strategic long term objective, Repsol sets energy efficiency and CO2 reduction plans in all assets. The annual reduction for Downstream facilities in 2017 was 216,000 tons of CO2e. The accumulated emission reduction considering 2014-2020 plan has been 1,4MtCO2e. This target is part of a global company science based target. The methodology is described in the C3 Business strategy. It's important to highlight that Repsol recognizes the ambition to limit global average temperature rise to 2 °C and that the existing trend of the world's net GHG emissions is not consistent with this ambition. In May 2015, Repsol acquired Talisman Energy Inc. Currently, Repsol is including Legacy Talisman assets in their Energy Efficiency Management, working on searching emission reduction initiatives and evaluating all the opportunities. Integration of all the assets in Repsol Management process is in progress. Emission reduction actions implemented in Legacy Talisman assets are not included in the 2014-2020 reduction plan.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target

Methane reduction target

KPI – Metric numerator

Total methane emissions (m3/y)

KPI – Metric denominator (intensity targets only)

Total marketed gas (m3/y)

Base year

2017

Start year

2018

Target year

2025

KPI in baseline year

1.4

KPI in target year

1

% achieved in reporting year

0

Target Status

New

Please explain

The scope and methodology of the KPI calculation complies with the following features: • Just methane emissions from operated assets are considered (not Working Interest) • The target is set at 2025, being the baseline year 2017 • The target is set to a specific emission defined as the percentage of methane emitted (on volume basis) divided by the total volume of marketed gas • All assets are included (gas and oil assets) • Each company calculates its 2017 baseline and establishes its target by 2025 • OGC's target will be the weighted aggregate of the individual targets of the member companies

Part of emissions target

100%

Is this target part of an overarching initiative?

Other, please specify (This one is an own target for Repsol.)

C-OG4.2a

(C-OG4.2a) Explain, for your oil and gas production activities, why you do not have a methane-specific emissions reduction target or do not incorporate methane into your targets reported in C4.2; and forecast how your methane emissions will change over the next five years.

As we have explained in the question above we have methane-specific emissions reduction target.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	135	
To be implemented*	61	219705
Implementation commenced*	36	144194
Implemented*	223	410208
Not to be implemented	287	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Activity type

Energy efficiency: Processes

Description of activity

Other, please specify (Heat recovery/Process optim./Comb. H&P)

Energy efficiency:Processes: Heat recovery Process optimization Combined heat and power

Estimated annual CO2e savings (metric tonnes CO2e)

409208

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

32900000

Investment required (unit currency – as specified in CC0.4)

44000000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

During 2017, 222 energy efficiency measures related to efficiency improvements in furnaces, energy integration of units, more efficient energy generation and distribution and operation optimization of dynamic systems and processes were implemented in our assets.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Repsol is working on the progressive implementation of Energy Management System (EnMS), via ISO 50001 standard.. Implementing these EnMS allows us to consolidate energy management criteria and best practices at different industrial facilities, apply them uniformly to the areas, systematize working methods, prioritize improvement opportunities and ensure that these efficiency criteria are present in all activities by integrating them with the others management systems. EnMS rely on studies and energy audits. We have developed a proprietary methodology to check the energy status of a process plant to quickly identify energy improvement opportunities in our Upstream facilities. Thus, the Operational Review - Energy (OR-E) let us to identify energy gaps and inefficiencies in order to find opportunities in our assets. To ensure a consistent approach across the entire company and to prevent and minimize the environmental impact of our operations on a global level, the E&P business has established a set of Environmental Performance Practices (EPP) applicable to all activities and projects, both new and existing assets. All Repsol's E&P activities must meet these minimum requirements to ensure that they are carried out in an environmentally-responsible manner and use the best internationally-accepted practices such as those established by the International Finance Corporation (IFC), the Joint Nature Conservation Committee (JNCC), the International Association of Geophysical Contractors (IAGC), the United States Environmental Protection Agency (USEPA) and ARPEL (the regional association of oil, gas and biofuel companies in Latin American and the Caribbean). The EPP covers all stages of an operation's life cycle: seismic studies, exploration, development, production and abandonment. It also specifies the main environmental factors to be taken into consideration: biodiversity, noise, atmospheric emissions, wastewater and waste management.
Compliance with regulatory requirements/standards	Each year an external company verifies that our greenhouse gas inventories comply with the highest quality and accuracy standards. In 2017, more than 90% verification of all direct company emissions according to the international ISO 14064-1 standard. We must also highlight that the scope of verification includes the PM3 asset in Malaysia, one of the assets acquired from Talisman. Approximately 75% of GHG emissions in exploration and production are accounted for by this asset, where emissions are mainly caused by gas venting during extraction, with a high content of CO2 (making its reuse for energy purposes difficult) associated with the purification of the natural gas extracted from this asset. We are currently analyzing the implementation of alternative improvements to minimize this venting. Having implemented the ISO 14064-1 standard allows our facilities to systematically measure and continuously identify emission reduction opportunities.
Dedicated budget for low-carbon product R&D	Repsol's Technology Centre sets annual budgets for product and process R&D, which include dedicated areas for low carbon activities. In 2017, approximately USD 12 Million have been invested in GHG reduction emissions R&D, in the following fields: Energy efficiency, biomass and biofuels, renewable energy (excluding biomass and biofuels, and electric vehicle
Dedicated budget for energy efficiency	We have invested USD 435 Million in the 2011-2017 period in energy efficiency actions and we have the commitment to invest USD 550 Million by 2020. In addition, Repsol's Technology Centre sets annual budgets for product and process R&D, which include dedicated areas for energy efficiency. In 2017, approximately USD 0.5 Million have been invested in energy efficiency R&D.
Employee engagement	Employees variable remuneration linked to emissions reduction and energy efficiency targets on multiple levels of our organization.
Financial optimization calculations	An important driver for investing in emissions reduction activities remains the high proportion of energy cost in the total operating cost of our processes (60% on average in our refineries).
Internal price on carbon	At Repsol, we take the price of carbon into account for our strategic plans. This way, we prepare our company to a low emissions future defining a Corporate Carbon Pricing. The price of carbon is used to test base economics for investment decisions, ensuring that our portfolio is resilient to external CO2 regulations and policies, encouraging energy efficiency and low carbon technologies. CO2 price is also considered in risk management procedures of Business Units since new legislative developments could increase operational costs. That is to say, Carbon Pricing has influence and drives technology choices and has had some influence around various design elements throughout the project life cycle. Our carbon price pathway starts with 25 USD\$/t CO2 and this value will reach to 40 USD\$/t CO2 in 2025.
Other	Catalogue of Emission Reduction Opportunities. In order to identify and promote the development of internal emissions reduction opportunities, we have implemented a sequential analysis process that identifies energy efficiency and fuel switch initiatives, and evaluates them by means of feasibility studies. This catalogue identifies GHG emissions reduction opportunities throughout the organization and provides the information necessary in order to analyze, in cost-effective terms, the different alternatives for meeting regulatory requirements related to GHG emissions. It also permits an appropriate dissemination within Repsol of the energy efficient practices and technologies that are assessed or applied to any Business Unit.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.**Level of aggregation**

Product

Description of product/Group of products

Autogas (automotive LPG): AutoGas is a true alternative to traditional fuels. Fast and economical to switch to, it is a clean, environmentally friendly option. These features have made AutoGas the most widely used alternative fuel in the world. Over 26 million drivers, more than 14 million in Europe, have already chosen it for their vehicle. Repsol AutoGas produces low CO₂ exhaust emissions, NO_x emissions below 96% with respect to traditional fuel and low local pollutant emissions, being the reduction in NO_x emissions against diesel came to 99%. The use of Autogas in direct injection liquid phase engines complies with the Euro 6c emissions standard (in force from 2017) in both emissions of gases (CO, HC and NO_x) and the number of particles (reduction of 98%), with no need for a particle filter. The reduction in CO₂ emissions against gasoline came to 12%, which will enable a new generation gasoline vehicle to attain the CO₂ emission target set for 2020. The results of the project have been presented in a number of international congresses. We have also filed two applications for a European patent deriving from the same. The avoided emissions represent the third party's Scope 1 emissions. AutoGas vehicles are dual-fuel vehicles; they are fitted with two tanks, one for petrol and another for AutoGas, so you can travel twice as far between fill ups. There are already a lot of manufacturers in Spain marketing AutoGas vehicles; what's more, many petrol vehicles can be switched over to AutoGas. The technology consists of fitting a kit comprising a tank, gas lines, a vaporiser and injectors to a petrol engine. Repsol has 712 AutoGas supply points and we continue to add new sales points to our network of service stations to make this fuel more accessible. And it is thanks to our commitment to innovation that at Repsol we have achieved the biggest network of services stations supplying AutoGas in the whole Spain.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Methodology developed by Repsol)

% revenue from low carbon product(s) in the reporting year

0.1

Comment

In 2017, we commercialized 47,000 tons of AutoGas, so approximately 22,000 tons of CO₂ has been reduced with respect to conventional fuel emissions. The emissions saved have been estimated using a methodology developed by Repsol that take into account the consumption in litres per 100 km and the CO₂ emissions per litre consumed for an average car. The decrease of CO₂ emissions attained with Autogas is almost 12% with respect to gasoline. The emissions reductions calculated considers only CO₂ (UNFCCC's website GWP =1)

Level of aggregation

Product

Description of product/Group of products

Warm recycled asphalt: The research strategy into asphalts is based on the development of eco-efficient processes and products, considering improvements not only during the manufacturing phase but also during their use. Consequently, we reduce CO₂ emissions during road construction, road recycling and road maintenance, through a reduction in the consumption of fuels and raw materials (bitumen and aggregate), on reducing the working temperature and the amount of smoke generated, together with the use of high percentage of road recycled material. Repsol has developed various technologies to reduce the working temperature of asphalt mixes, from the initial manufacturing stage to its application to roads. A reduction of up to 50-60°C can be achieved in the working temperature. Reducing the manufacturing and application temperature implies savings in energy and fuels in the plants during manufacture and storage, also the use of aged road material, allows a reduction in the raw materials needed up to 90%. The estimated energy savings are 20 to 40% in fuels. The avoided emissions represent the third party's Scope 1 emissions.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Methodology developed by repsol)

% revenue from low carbon product(s) in the reporting year

0.04

Comment

During 2017, the use of cold, warm and half-warm asphalt mixtures avoided approximately 163 tons of CO₂ emissions, compared to those that would have been emitted if the asphalt had been produced using the traditional process. For its calculation, the reduction of 3kg of CO₂ per ton of mix was considered. Repsol's Technology Centre has developed a specific methodology based on empirical information which establishes that the consumption of natural gas in the manufacturing stage is reduced 1.7 Nm³ per ton of asphalt produced by using these new technologies. The natural gas consumption has been measured with a gas meter and divided by the quantity of mixture produced. The Net calorific value used for estimating the energy saved and the emission factors are provided by IPCC Guidelines 2006. The emissions reductions calculated considers only CO₂ (UNFCCC's website GWP = 1)

Level of aggregation

Product

Description of product/Group of products

Biofuels: Biofuels contribute to the reduction of CO₂ emissions mainly in three ways: 1) avoiding the emissions associated with gasoline and diesel; 2) allowing the CO₂ content of the fossil fuels to remain in storage and 3) providing a mechanism for CO₂ absorption by growing new biomass for fuels. Repsol contribute to CO₂ emissions reduction through the use of biofuels, incorporating bioethanol in gasoline and biodiesel and Vegetable Oil (VO) in gasoil. They are sold through Repsol service stations and direct sales to other suppliers. The avoided emissions represent the third party's Scope 1 emissions.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Methodology developed by Repsol)

% revenue from low carbon product(s) in the reporting year

2.29

Comment

Due to the use of these biofuels marketed, we estimate that 711,000 ton of CO2 emissions were avoided, compared to the GHG emissions emitted by the use of an equivalent amount of gasoline and diesel in an energy basis. The emissions saved have been estimated using a methodology developed by Repsol. It is assumed, as indicated Fuel Quality Directive (FQD), that the average emissions saving capacity is 35% compared to the hypothetical use of conventional fossil fuels. The Net calorific value used for estimating the energy content of the biofuels marketed and the emission factors used to calculate the CO2 emissions from the combustion of the equivalent amount, in energy basis are provided by IPCC Guidelines 2006. The emissions reductions calculated considers only CO2 (UNFCCC's website global warming potentials (GWP)=1)

C-OG4.6

(C-OG4.6) Describe your organization's efforts to reduce methane emissions from oil and gas production activities.

Repsol is committed with the methane emissions reductions. As a part of this, Repsol joined CCAC-OGMP in 2016. Although our company had been reporting methane emissions externally and taking action on methane reductions for many years, the endorsement to the partnership has been considered a good opportunity for increasing focus, sharing knowledge on methodologies and technologies and improving scientific and technical understanding of methane emissions in our industry.

In the initial implementation plan submitted to the OGMP we have included our most important gas production assets, where we are developing and implementing GHG emissions reduction plans in a multi-year basis. We continue to focus on venting mitigation, fugitive emissions surveys (rolling out leak detection and repair (LDAR) programs), flare management and pneumatics devices retrofit.

On the other hand, our work within the Oil and Gas Climate Initiative (OGCI) complements our efforts in this Partnership and includes specific focus on technologies to support methane detection, measurement and mitigation.

Additionally, Repsol has signed the Methane Guidance Principles as initial signatory member, focusing these principles on continually reducing methane emissions; advancing strong performance across gas value chains; improving accuracy of methane emissions data; advocating sound policies and regulations on methane emissions; and increasing transparency.

All these efforts are going to be gathered this year with the setting of a methane reduction target for the Upstream business by 2025, considering 2017 as baseline This is going to be a company target that will be considered also in the OGCI methane reduction target to be announced in September.

As an example or case study of our methane reduction efforts, we can mention the ongoing project for substitution of high-bleed pneumatic devices for low-bleed ones in our Canadian assets. This project include the conversion of more than 5.0000 devices from high-bleed (i.e., greater than 6 standard cubic feet per hour of natural gas vented to atmosphere) to low bleed ones. The project started in 2016 and will be finished in 2018. The methane emissions reduction have been estimated in more than 1.000 tons (i.e. more than 25.000 tCO2eq).

COG4.7

(C-OG4.7) Does your organization conduct leak detection and repair (LDAR) or use other methods to find and fix fugitive methane emissions from oil and gas production activities?

Yes

C-OG4.7a

(C-OG4.7a) Describe the protocol through which methane leak detection and repair or other leak detection methods, are conducted for oil and gas production activities, including predominant frequency of inspections, estimates of assets covered, and methodologies employed.

Through implementation of the company Environmental Performance Practices (EPP) we have set Leak Detection and Repair (LDAR) programs in order to detect and repair methane leaks. These guidelines make up a set of common standards regardless of the geographical area where we are operating and local legislation in each country.

We have also developed an internal standard (edited as a guidelines document) to carry out Hybrid LDAR campaigns combining Optimal Gas Imaging (OGI) cameras for detection and field ionization flame devices (FID) for emission quantification of methane and other VOCs.

As an average, we perform a LDAR campaign annually in each facility, which is the recommended frequency in our standard. In any case, an increase in the LDAR campaigns frequency is considered in the methane emissions reduction plan for achieving our target by 2025.

Several examples can be provided (mainly in our assets located in North America), as this is a standard procedure already implemented.

The LDAR programs include the use of either an optical gas imaging camera or a VOC monitoring instrument specified in Method 21 (EPA) such as a gas leak detector, (typically an FID, capable of reading methane concentrations in air of 0% to 5% with an accuracy of $\pm 0.2\%$). The optical camera or gas leak detector utilized for the LDAR monitoring is operated in accordance with appropriate manufacturer-recommended practices.

The following equipment is monitored: valves, flanges, connectors, pressure Relief Devices, open-ended lines, storage vessels/storage tanks, compressor seals in natural gas or hydrocarbon liquids service and meters/instruments.

Leaks are determined to be any of the following observations: a) Visible methane or hydrocarbon emissions when utilizing an optical gas imaging camera; or b) A concentration measured 500 ppmv volatile organic compounds (VOC) if using a gas leak detector instrument.

Any leaks found from subject equipment are to be repaired within 15 days from the date of leak detection, except for certain circumstances in which facility shutdowns or ordering spare replacement parts are necessary for completion of repair. After leak repair, the equipment must be resurveyed within 15 days.

C-OG4.8

(C-OG4.8) If flaring is relevant to your oil and gas production activities, describe your organization's efforts to reduce flaring, including any flaring reduction targets.

In 2017 Repsol flared an amount of gas equivalent to 0.76 million tons of CO₂, which accounts for 3% of total Repsol emissions.

As Repsol is strongly committed to the fight against climate change, in recent years our company has proposed targets and plans to reduce the energy consumption and carbon intensity of our operations, being flaring a key issue to focus on our attention and efforts.

In this sense, Repsol continuously pushes flaring reduction initiatives in their production sites as a part of our energy efficiency and CO₂ emissions reduction plans. Additionally, flaring reduction initiatives have also an economical profit potential associated to the gas sales or to the possible use of the gas as internal fuel.

Regarding downstream facilities flaring reduction objectives are part of the refineries energy targets. A "zero-flaring" strategy has been implemented in normal plant operation. Since design phases, both reuse and/or recovery of gas streams are considered before flaring. All our Spanish refineries have one or more flare gas recovery compressors to reuse the gas as fuel in their processes. Additionally, in 2017 we identified some operational improvements to recover flare gas in our refineries that allowed us to reduce 3,500 tons/year in total.

On June 10th 2016, Repsol endorsed the Zero Routine Flaring by 2030 World Bank Initiative. This endorsement is fully aligned with Repsol policies and commitment as part of the OGCI. Belonging to this initiative, Repsol has the commitment to minimize routine flaring from its upstream operations. In June 2018 Repsol has reported for the first time to the World Bank the total amount of 2017 flaring. During 2018, we are working internally to establish a routine/non-routine flaring segregation calculation methodology in our upstream assets. This will allow us to know the split between routine and non-routine flaring and, with this information, we will be able to establish a routine flaring reduction target.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO₂e)

24884434

Comment

The base year was modified due to the acquisition of Talisman Energy Inc. 2016 was the first full year of operation after the acquisition.

Scope 2 (location-based)

Base year start

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO₂e)

652384

Comment

The base year was modified due to the acquisition of Talisman Energy Inc. 2016 was the first full year of operation after the acquisition.

Scope 2 (market-based)

Base year start

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO₂e)

649743

Comment

The base year was modified due to the acquisition of Talisman Energy Inc. 2016 was the first full year of operation after the acquisition.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

American Petroleum Institute Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry, 2009
Defra Voluntary 2017 Reporting Guidelines
European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations
IPIECA's Petroleum Industry Guidelines for reporting GHG emissions, 2nd edition, 2011
ISO 14064-1
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)
22952792

End-year of reporting period
<Not Applicable>

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
We are reporting a Scope 2 location-based and a market-based figures following this criteria: The located based emission factor for the electricity purchased to third parties is calculated based on the 2016 published information by Red Eléctrica Española (REE) of Spain regarding national energy balances (located factors were needed prior to the publication of the 2017 report for ISO-14064 certification audits carried out between January and March of 2018). The market based emission factors for the electricity purchased to third parties is calculated based on the last published information by CNMC of Spain. The located based emission factor is 0.242 metric tonnes CO2e per MWh. The market based factors used depends on the electricity marketing company: Gas Natural: 0.35 metric tonnes CO2e per MWh, ENGIE: 0.38 metric tonnes CO2e per MWh, Iberdrola: 0.28 metric tonnes CO2e per MWh, Endesa: 0.39 metric tonnes CO2e per MWh.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Row 1

Scope 2, location-based
400931

Scope 2, market-based (if applicable)
438196

End-year of reporting period
<Not Applicable>

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Offices located outside industrial sites with the exception of Madrid headquarters Campus, IT Building (Tres Cantos) and the Tecnology Center

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why the source is excluded

Scope 1 and 2 emissions from offices located outside industrial facilities are not included within the operational boundary based on the oil industry guidelines for the reporting of greenhouse gas emissions developed by IPIECA, IOGP and API. During 2017, Campus headquarter, Tres Cantos building (where the Company's main Data Processing Center is located) and the Tecnology Center verified their emissions following ISO 14064 standard.

Source

Temporary activities

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why the source is excluded

Temporary activities (less than 6 months and less than 5% of the total GHG inventory).

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

7849531

Emissions calculation methodology

This category include emissions associated with the purchased of crude oil and hydrogen used both as a feedstock in our facilities - Repsol's GHG inventories include indirect CO2 emissions resulting from the production of hydrogen. The emissions associated to this category are calculated by multiplying an specific emission factor for H2 by the quantity of this gas purchased and distributed to the various Repsol refineries and chemicals facilities. The emission factor for hydrogen acquisition is 6.9 tCO2/tH2 for Spain, Portugal and Peru. This emission factor is the sum of two components: 1. Reaction component: the raw material used is 100% methane natural gas, with 100% H2 recovery and 100% conversion to CO2 (vapour reforming reaction: $CH_4 + H_2O \rightarrow CO + 3H_2$, displacement reaction of water vapour: $CO + H_2O \rightarrow CO_2 + H_2$), implying process emissions of 5.50 tCO2/tH2. 2. Necessary energy component: The fuel used in the reforming furnaces is natural gas, at a rate of 25,500 MJ/tH2 (a). The natural gas emission factor will be used following the GHG emissions National Inventory in case of Spain and IPPC guidelines for national GHG inventories in case of Portugal and Peru. (a) Average value taken from the BREF of refineries, Integrated Pollution Prevention and Control (IPPC) -reference document on best available techniques for mineral oil and gas refineries, February 2003. -The Repsol GHG inventory includes indirect CO2 emissions resulting from the extraction of crude to be processed in our refineries (Cartagena, La Coruña, Puertollano, Tarragona, Petronor and La Pampilla) and the crude used in Asesa for alphast production. The associated emissions in this category are calculated by multiplying an emission factor established by geographical area, the amount of oil that is imported and comes to our refineries. The emission factors used are obtained from the IOGP and are divided according to the following geographic areas: Africa, Asia, Australasia, Europe, FSU, Middle East, North America, South America.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Repsol considers this category as not relevant since the company has not purchased or acquired a significant amount of capital goods during 2017. Capital goods are no likely to be material source of emissions in any given year for our company.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

To calculate emissions from this category we have considered the emissions associated with the extraction, production (liquefaction and regasification) and transportation of natural gas consumption in our facilities. Different natural gas origins have been considered and bibliographic emission factors that consider each of these sources. Moreover the emissions associated with the extraction, production and transport of fuels used to produce electricity we consume in our facilities have been taken into account by using an emission factor that considers the national energy mix. The result of this estimation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company As an integrated oil and gas company, this category is not likely to be material because we consume energy we predominately produce ourselves.

Upstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

985746

Emissions calculation methodology

To calculate emissions from shipping the following values are considered: - Average distance from countries of departure to port of arrival: This information has been provided by Repsol, through Trading and transport department file. The Trading and transport business unit aims to manage and optimize marketing activities, supply and transportation of crude and products of the Group in international markets. - According to the information provided the vessels used to transport upstream products have been between 100,000 < dwt < 170,000 metric tonnes (category according to the deadweight (dwt)). Repsol has chosen a representative average deadweight (dwt) for each refinery as the average ships that carry the materials from the region of origin to the refinery- Fuel consumed by the ships: Repsol has calculated a regression line which links the fuel consumption per day travelled with the previously calculated average deadweight. This line has been drawn from actual consumption data obtained from various websites, the main www.riverlake.ch/tce.php - Furthermore, Repsol has used the average speed of the category ship used for the transport. - With the speed and distances calculated above, Repsol has estimated the travel days and the consumption of fuel by the vessels on the trips and considered four days to unload. It has been considered the emissions derived from both ways. - The emissions factors used are: - Residual fuel oil emissions factor: 77,400.00 kCO2/TJ (IPCC Guidelines 2006) - CH4 emissions factor for maritime transport: 7.00 kgCH4/TJ (IPCC Guidelines 2006) - N2O emission factor: 2.00 kgN2O/TJ (IPCC Guidelines 2006)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

The result of this calculation contributes less than a 1% to Scope 3 emissions, so Repsol considers this source as not relevant. Repsol Trading Division is involved in a project to gather emissions information directly from shipping companies in the future.

Waste generated in operations

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

25795

Emissions calculation methodology

The emissions reported in this category include emissions related to waste treatment and transportation of these from the centers where they are generated to their final destination. The emissions from processing and waste management in industrial centers (refining and chemical) are calculated by multiplying the amount of waste generated that are managed by the emission factors for each type of waste and treatment. We have selected 59 different emission factors from the Ecoinvent v.3 database. The Ecoinvent factors include all the life cycle, from cradle, including all upstream activities, to grave.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company.

Business travel

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

10607

Emissions calculation methodology

CO2 emissions from Employee business travel and Employee hotel nights are estimated by Carlson Wagonlit Travel, a global leader specialized in business travel management. Carlson Wagonlit Travel, working for and together with its British client UK Defra (Department for Environment, Food and Rural Affairs), has developed an approach to calculating the burden business trips place on the environment. The "CO2 calculator" lets users calculate the carbon emissions from possible transportation alternatives by using specific CO2 emission factors. Repsol has estimated the distance travelled (kilometres) by employees in Spain from the use of the following categories of mobile transport sources: § Rail transport. § Air transport: in this category there are two different types of distance travelled, long haul (>660 km) and medium-short haul. Each category has assigned a default emission factor (g CO2/km) and the CO2 emissions are calculated by the following equation: CO2 Emissions = Distance Travelled x Emission Factor.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company

Employee commuting

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

3645

Emissions calculation methodology

During 2012 Repsol employees have moved from various offices in Madrid to the Repsol Campus, the new headquarters opened by the company in the Méndez Álvaro area of Madrid. Surveys have been conducted to determine the following information: The number of people who have used each type of transport mode (walking, cycling, bus, taxi, subway, rail, motorcycle, private car, company car and car sharing) and the miles made with this mode of transport and the corresponding percentages in the case of using multiple modes. Emissions of individual workers are calculated by multiplying the number of kilometers travelled by each mode of transport by a specific bibliographic emission factor for each of these modes, considering the way round. With all this information Repsol has calculated the share of emissions from commuting to the old offices and those due to travel to campus after the move. The number has not change in 2017.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

This is a methodology conducted by Repsol for calculating these emissions The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Repsol has obtained an average emission factor (74 tCO2 / year / service station) considering emissions from 10 company service stations. This is considered as a representative sample for the company since it includes all possible variations in terms of services, shop, washing machines, storage and dispensing, etc. The calculation of emissions in this category has been carried out with this average emission factor and the number of service stations that are leased and operated by Repsol. The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company.

Downstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

524412

Emissions calculation methodology

Repsol is able to estimate the CO2 emissions from the external distribution of our activities using the UK Defra guidelines. It is important to stress, however, that several assumptions regarding transport capacities were required due to the complexity of logistics in our industry. In order to calculate External distributions/logistics emissions, Repsol has used the Guideline "Calculating CO2 Emissions from Mobile Sources" available on the GHG Protocol website. The CO2 emissions have been calculated using distance and cargo-based emission factors which are derived from the source: UK's Department for Environment, Food and Rural Affairs (DEFRA). The emission factors are specific to different types of vehicles, and they offer an expanded coverage of freight transport. The freight transport emission factors require activity data on tonne-kilometres travelled by the different types of freight vehicles used in Repsol operations, which included road and rail vehicles. Calculating emissions requires two main steps: Collect data on distance travelled by vehicle type. We have considered two types of vehicles: road transport (heavy goods vehicle) and rail transport. Depending on its weight, it will be used in step 2 a specific emission factor provided by UK DEFRA. Convert tonne-kilometres to CO2 emissions by multiplying results from step 1 by distance and cargo-based emissions factors. $CO_2 \text{ Emissions} = \text{Distance travelled} \cdot \text{Cargo} \times \text{Emission Factor}$.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

This is a methodology conducted by Repsol for calculating these emissions The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Repsol has calculated emissions that take place in our customer's facilities for the use of chemicals which represent the greater number of sales for Repsol. For calculations Repsol has considered the criteria of the PAS 2050 standard and used an emission factor provided by one of our most important customers. The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

148823155

Emissions calculation methodology

We have used the methodology published by CDP for calculating category 11 in the O&G sector. The methodology used for the calculation is based on production. We take into account the upstream and downstream production. Additionally, Upstream production has been corrected subtracting the refined oil in our refineries. We used the "High tier", specifically equation number 21 (page 19 of the CDP guide) which takes into account the quantity produced, the emission factor and EO effective oxidation rate. The emission factors used are based on The Institute's Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry of API (American Petroleum Institute).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Repsol has calculated emissions from landfill and recycling of chemicals which represent the greater number of sales for Repsol. To be conservative, it was considered that only 50% of these products have been recycled while the rest has been taken to landfill. The company has conducted several case studies, considering different recycling processes and percentages for them. The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Repsol has obtained an average emission factor (74 tCO₂ / year / service station) considering emissions from 10 company service stations. This is considered as a representative sample for the company since it includes all possible variations in terms of services, shop, washing machines, storage and dispensing, etc. The calculation of emissions in this category has been carried out with this average emission factor and the number of service stations that are owned by Repsol and leased to other entities. The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Repsol has obtained an average emission factor (74 tCO₂ / year / service station) considering emissions from 10 company service stations. This is considered as a representative sample for the company since it includes all possible variations in terms of services, shop, washing machines, storage and dispensing, etc. The calculation of emissions in this category has been carried out with this average emission factor and the number of service stations that are owned by Repsol and leased to other entities. The result of this calculation contributes to total Scope 3 emissions at a rate less than 1% and Repsol considers that they are not relevant to the company.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Repsol considers this category as not relevant since the company has not made significant investments that can be taken into account in this category in 2017

Other (upstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Other (downstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0005

Metric numerator (Gross global combined Scope 1 and 2 emissions)

23353723

Metric denominator

unit total revenue

Metric denominator: Unit total

46950592233

Scope 2 figure used

Location-based

% change from previous year

25

Direction of change

Decreased

Reason for change

Regarding the numerator, during 2017 our total Scope 1 and 2 emissions were 23,353,724 t CO2e, which implies a reduction of 8.1% over the previous year, the reduction has been achieved, among other reasons, by the emissions reduction activity carried out by the company. With respect to the denominator, Repsol's revenues in term of sales for 2017 was USD 46,950,592,233, 23% higher than the previous year's result (USD 38,109,374,978). The high reduction in the intensity figure is thanks the reduction of the numerator and the increase of the denominator.

C-OG6.12

(C-OG6.12) Provide the intensity figures for Scope 1 emissions (metric tons CO2e) per unit of hydrocarbon category.

Unit of hydrocarbon category (denominator)

Thousand barrels of crude oil / condensate

Metric tons CO2e from hydrocarbon category per unit specified

0.19

% change from previous year

8

Direction of change

Decreased

Reason for change

Regarding the numerator, during 2017 our Scope 1 and 2 refining emissions were 9,027,338 t CO2e which implies an increase of 1% over the previous year. With respect to the denominator, during 2017 Repsol's refineries processed 47,356,000 metric tons of crude oil, which implies an increase of 9.5% over the previous year. It is important to highlight the efforts made by Refining unit in reducing CO2 emissions, thanks to the emissions reductions activities the refining area avoided more than 200,000 metric tons of CO2 in 2017.

Comment

The indicator corresponds to the Refining segment

Unit of hydrocarbon category (denominator)

Thousand barrels of crude oil / condensate

Metric tons CO2e from hydrocarbon category per unit specified

62.7

% change from previous year

8

Direction of change

Decreased

Reason for change

Regarding the numerator, during 2017 our upstream emissions were 10,631,850 t CO2e, which implies a reduction of 16% compared to 2016 (2016 Upstream CO2 emissions: 12,715,234 t CO2e). With respect to the denominator, Repsol's hydrocarbons production in 2017 decreased 8.6 % on figures for 2016: 168,720 thousand barrel of oil equivalent produced in 2017 and 184,748 in 2016. In 2017 production data of the joint ventures not operated assets is not included.

Comment

The indicator corresponds to the Exploration, production & gas processing segment

C-OG6.13

(C-OG6.13) Report your methane emissions as percentages of natural gas and hydrocarbon production or throughput.

Oil and gas business division

Upstream

Estimated total methane emitted expressed as % of natural gas production or throughput at given division

1.21

Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division

2.64

Comment

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	18431662	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	4303945	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	217185	IPCC Fourth Assessment Report (AR4 - 100 year)

C-OG7.1b

(C-OG7.1b) Break down your total gross global Scope 1 emissions from oil and gas value chain production activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives (Oil: Total)	16	1425	35631	
Fugitives (Oil: Venting)	0	1072	26805	
Fugitives (Oil: Flaring)	242498	1076	272108	
Fugitives (Oil: E&P, excluding venting and flaring)	0	0	0	
Fugitives (Oil: All Other)	0	3370	84243	
Fugitives (Gas: Total)	2907	18935.86	476314	
Fugitives (Gas: Venting)	3472805	142334	7031139	
Fugitives (Gas: Flaring)	175293	850	195273	
Fugitives (Gas: E&P, excluding venting and flaring)	0	0	0	
Fugitives (Gas: Midstream)	0	0	0	
Fugitives (Gas: All other)	0	0	0	
Combustion (Oil: Upstream, excluding flaring)	736110	17.77	739741	
Combustion (Gas: Upstream, excluding flaring)	1687430	3077	1776483	
Combustion (Refining)	7759649	0	7915155	
Combustion (Chemicals production)	3323300	0	3368080	
Combustion (Electricity generation)	0	0	0	
Combustion (Other)	38992	0.16	39158	
Process emissions	889926	0	889926	
Emission not elsewhere classified	102736	0	102736	

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Algeria	62
Aruba	34
Bolivia (Plurinational State of)	340123
Canada	658131
Ecuador	576350
Guyana	8804
United States of America	515871
Spain	11006854
Malaysia	8368768
Norway	35357
Peru	670560
Portugal	757890
Viet Nam	5853
Indonesia	8135

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Puertollano Refinery (Spain)	1333672		
Tarragona Refinery (Spain)	1016691		
Cartagena Refinery (Spain)	2471643		
A Coruña Refinery (Spain)	1158972		
Petronor – Bilbao Refinery (Spain)	2263038		
La Pampilla Refinery (Peru)	631536		
Tarragona Chemical Plant (Spain)	2214740		
Puertollano Chemical Plant (Spain)	293332		
Sines Chemical Plant (Portugal)	756223		
Santander Chemical Plant (Spain)	220274		
Marketing	1806		
Exploration and production Spain	20989		
Exploration and production Algeria	62		
Exploration and production Ecuador	576350		
Exploration and production Peru	39024		
Exploration and production Bolivia	340123		
Exploration and production USA	515871		
Exploration and production Guyana	8804		
Exploration and production Aruba	33.98		
Exploration and production Indonesia	8135		
Exploration and production Canada	658131		
Exploration and production Malasia	8368768		
Exploration and production Noruega	35357		
Exploration and production Vietnam	5853		
LPG	1353		
Speciality operations Asphalts Mungalde	168		
Speciality operations Palencia	1126		
Speciality operations Asphalts Bailen	6238		
Technology Center (Spain)	3753		
Non industrial facilities Campus (Spain)	691		
Non industrial facilities Tres Cantos (Spain)	35		

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions, metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility generation activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	10578854	<Not Applicable>	Includes the emissions caused for all the upstream activities (exploration, development and production of oil and gas) of the company. It does not include emissions of non-industrial facilities and Technology Center (4479 metric tonnes CO2e)
Oil and gas production activities (downstream)	12369459	<Not Applicable>	Includes the emissions caused for all the downstream activities (refining, processing, distribution and marketing of products derived and the manufacture, distribution and marketing of chemical products derived from oil and gas) of the company. It does not include emissions of non-industrial facilities and Technology Center (4479 metric tonnes CO2e)
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Canada	52747	52747	64325	0
Ecuador	23	23	65	0
United States of America	1336	1336	3414	0
Spain	277367	313911	1214328	0
Malaysia	177	177	265	0
Peru	22306	22306	85390	0
Portugal	46975	47696	144985	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2 location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Petronor Refinery Spain	975	1570
Puertollano Refinery (Spain)	72325	72325
Oleoducto Cartagena-Puertollano	12311	14244
Tarragona Refinery (Spain)	0	0
Cartagena Refinery (Spain)	12146	14053
A Coruña Refinery (Spain)	31721	31721
La Pampilla Refinery (Peru)	22306	22306
Polidux Chemical Plant (Spain)	0	0
Puertollano Chemical Plant (Spain)	54302	69561
Sines Chemical Plant (Portugal)	43331	43331
Tarragona Chemical Plant (Spain)	0	0
Santander Chemical Plant (Spain)	57210	57210
Marketing	25201	39169
Exploration and production Spain	66	66
Exploration and production Trinidad & Tobago	0	0
Exploration and production Venezuela	0	0
Exploration and production Ecuador	23	23
Exploration and production Bolivia	0	0
Exploration and production Malasia	177	177
Exploration and production USA	1336	1336
Exploration and production Canada	52747	52747
LPG	4178	6699
Canaport LNG (Canada)	0	0
Speciality operations Lubricants Puertollano	1353	1875
Speciality operations Asphalts Mangualde	48	48
Speciality operations Palencia	377	608
Speciality operations Bailen	538	867
Technology Center (Spain)	3075	3075
Non industrial facilities Campus (Spain)	2813	2813
Non industrial facilities Tres Cantos (Spain)	2372	2372

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	58527	61048	Includes the emissions caused for all the upstream activities (exploration, development and production of oil and gas) of the company. It does not include emissions of non-industrial facilities and Technology Center (8260 metric tonnes CO2e)
Oil and gas production activities (downstream)	334144	368888	Includes the emissions caused for all the downstream activities (refining, processing, distribution and marketing of products derived and the manufacture, distribution and marketing of chemical products derived from oil and gas) of the company. It does not include emissions of non-industrial facilities and Technology Center (8260 metric tonnes CO2e)
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?
 Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption		<Not Applicable >		
Other emissions reduction activities	409208	Decreased	1.61	The change in emissions has been calculated considering the total avoided emissions associated to quantified reduction activities carried out by the company during 2017. Emissions value (percentage) has been calculated dividing 409.208 metric tons CO2e between the emissions of the company in 2016: 25.425.324 metric tonnes CO2e (the 2016 scope 2 emissions has been adjusted due to the application of a new criteria, , being the variation with respect to the emissions reported in 2016, 25.548.505 of 0,5%)
Divestment	475956	Decreased	1.87	The change in emissions has been calculated considering the total 2016 emissions of the assets that are no longer operated by the company (349.515 tCO2eq of Trinidad & Tobago asset and 126.443 tCO2eq of Eagle Ford asset). Emissions value (percentage) has been calculated dividing 475.956 metric tons CO2e between the emissions of the company in 2016: 25.425.324 metric tonnes CO2e (2016 scope 2 emissions has been adjusted due to the application of a new criteria, being the variation with respect to the emissions reported in 2016, 25.548.505 of 0,5%)
Acquisitions		<Not Applicable >		
Mergers		<Not Applicable >		
Change in output	605924	Decreased	2.38	The change in emissions has been calculated considering the actual throughput of every asset in 2017 with respect to 2016. Emissions value (percentage) has been calculated dividing 605.924 metric tons CO2e between the emissions of the company in 2016: 25.425.324 metric tonnes CO2e (the 2016 scope 2 emissions has been adjusted due to the application of a new criteria, , being the variation with respect to the emissions reported in 2016, 25.548.505 of 0,5%)
Change in methodology		<Not Applicable >		
Change in boundary		<Not Applicable >		
Change in physical operating conditions		<Not Applicable >		
Unidentified		<Not Applicable >		
Other	580512	Decreased	2.28	The change in emissions is due to a decrease in the CO2 content of produced gas in the PM3 asset (38,3%v in 2016 and 37,0%v in 2017), which reduces the gas consumption and the vented gas. Emissions value (percentage) has been calculated dividing 58.0512 metric tons CO2e between the emissions of the company in 2016: 25.425.324 metric tonnes CO2e (the 2016 scope 2 emissions has been adjusted due to the application of a new criteria, , being the variation with respect to the

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?
Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?
More than 5% but less than or equal to 10%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	67465694	67465694
Consumption of purchased or acquired electricity	<Not Applicable>	0	776169	776169
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	736603	736603
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	0	68978465	68978465

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Crude Oil

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

987002

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Fuel Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

46744312

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

176280

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

101452

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1127748

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Fuel Oil Number 4

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

562752

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

12485

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

10312

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

7524

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

16484824

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

740619

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

13110127

Fuels (excluding feedstocks)

Other, please specify (Purgue gas hydrogen facility)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1548744

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Crude Oil

Emission factor

0.268

Unit

metric tons CO2e per MWh

Emission factor source

Real data

Comment

We operate in different countries with different type of crude oil. The factor reported is the average of all the factors that has been used to calculate the GHG emissions.

Diesel

Emission factor

0.4

Unit

metric tons CO2e per MWh

Emission factor source

Real data

Comment

We operate in different countries with different quality of fuel gas. The factor reported is the average of all the factors that has been used to calculate the GHG emissions

Fuel Gas

Emission factor

0.206

Unit

metric tons CO2e per MWh

Emission factor source

Real data

Comment

We operate in different countries with different quality of fuel gas. The factor reported is the average of all the factors that has been used to calculate the GHG emissions

Fuel Oil Number 4

Emission factor

0.282

Unit

metric tons CO2e per MWh

Emission factor source

Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry. American Petroleum Institute (API).

Comment

Liquefied Petroleum Gas (LPG)

Emission factor
0.23

Unit
metric tons CO2e per MWh

Emission factor source
Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry. American Petroleum Institute (API).

Comment

Natural Gas

Emission factor
0.202

Unit
metric tons CO2e per MWh

Emission factor source
Real data

Comment
We operate in different countries with different quality of natural gas. The factors reported is the average of all the factor that has been used to calculate the GHG emissions

Other

Emission factor
1.024

Unit
metric tons CO2e per MWh

Emission factor source
Real data

Comment

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity			0	0
Heat	0	0	0	0
Steam			0	0
Cooling			0	0

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor

No purchases or generation of low-carbon electricity, heat, steam or cooling accounted with a low-carbon emission factor

Low-carbon technology type

<Not Applicable>

MWh consumed associated with low-carbon electricity, heat, steam or cooling

<Not Applicable>

Emission factor (in units of metric tons CO2e per MWh)

<Not Applicable>

Comment

Our company doesn't purchase specifically low carbon electricity, steam or cooling.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C-OG9.2a

(C-OG9.2a) Disclose your net liquid and gas hydrocarbon production (total of subsidiaries and equity-accounted entities).

	In-year net production	Comment
Crude oil and condensate, million barrels	93.09	
Natural gas liquids, million barrels	160.46	
Oil sands, million barrels (includes bitumen and synthetic crude)	0	
Natural gas, billion cubic feet	0	

C-OG9.2b

(C-OG9.2b) Explain which listing requirements or other methodologies you use to report reserves data. If your organization cannot provide data due to legal restrictions on reporting reserves figures in certain countries, please explain this.

For the estimation of proven and unproven oil and gas reserves, Repsol uses the criteria established by the system "SPE / WPC / AAPG / SPEE Petroleum Resources Management System", usually referred to by its acronym SPE-PRMS (SPE - Society of Petroleum Engineers) ".

C-OG9.2c

(C-OG9.2c) Disclose your estimated total net reserves and resource base (million boe), including the total associated with subsidiaries and equity-accounted entities.

	Estimated total net proved + probable reserves (2P) (million BOE)	Estimated total net proved + probable + possible reserves (3P) (million BOE)	Estimated net total resource base (million BOE)
Row 1			

C-OG9.2d

(C-OG9.2d) Provide an indicative percentage split for 2P, 3P reserves, and total resource base by hydrocarbon categories.

	Net proved + probable reserves (2P) (%)	Net proved + probable + possible reserves (3P) (%)	Net total resource base (%)
Crude oil / condensate / Natural gas liquids	28	30	34
Natural gas	72	70	66
Oil sands (includes bitumen and synthetic crude)	0	0	0

C-OG9.2e

(C-OG9.2e) Provide an indicative percentage split for production, 1P, 2P, 3P reserves, and total resource base by development types.

Development type

Onshore

In-year net production (%)

56

Net proved reserves (1P) (%)

56

Net proved + probable reserves (2P) (%)

52

Net proved + probable + possible reserves (3P) (%)

53

Net total resource base (%)

76

Comment

The breakdown includes only onshore and offshore categories, as most of the listed development types can be included in both categories

Development type

Other, please specify (Offshore)

In-year net production (%)

44

Net proved reserves (1P) (%)

44

Net proved + probable reserves (2P) (%)

48

Net proved + probable + possible reserves (3P) (%)

47

Net total resource base (%)

24

Comment

The breakdown includes only onshore and offshore categories, as most of the listed development types can be included in both categories

C-OG9.3a

(C-OG9.3a) Disclose your total refinery throughput capacity in the reporting year in thousand barrels per year.

Total refinery throughput capacity (Thousand barrels per day)	
Capacity	1013

C-OG9.3b

(C-OG9.3b) Disclose feedstocks processed in the reporting year in million barrels per year.

	Throughput (Million barrels)	Comment
Oil	337.31	Density: 0,883 t/m3 (average density of all kinds of oils processed)
Other feedstocks	61.01	A density of 0,883 t/m3 has been considered
Total	398.31	

C-OG9.3c

(C-OG9.3c) Are you able to break down your refinery products and net production?

Yes

C-OG9.3d

(C-OG9.3d) Disclose your refinery products and net production in the reporting year in million barrels per year.

Product produced	Refinery net production (Million barrels) *not including products used/consumed on site
Other, please specify (Intermediate distillates) <i>Density has been calculated as a weighted average of kerosen (0,8 t/m3 with a weight of 13%) and gasoil (0,845 t/m3 with a weight of 87%) densities, resulting in 0,839 t/m3</i>	201.09
Gasolines <i>Density: 0,755 t/m3</i>	82.31
Fuel oils <i>Density: 0,995 t/m3</i>	31.58
Liquified petroleum gas <i>Density: 0,5416 t/m3</i>	11.5
Asphalt and tar <i>Density: 1,03 t/m3</i>	9.39
Lubricants <i>Density: 0,925 t/m3</i>	1.8
Other, please specify (Others (including petrochemical products)) <i>Density has been calculated as a weighted average of naphta (0,72t/m3 with a weight of 79%), propane (0,509 t/m3 with a weight of 7%) and butane (0,584 t/m3 with a weight of 13%) densities, resulting in 0,680 t/m3</i>	73.15

C-OG9.3e**(C-OG9.3e) Please disclose your chemicals production in the reporting year in thousand metric tons.**

Product	Production, Thousand metric tons	Capacity, Thousand metric tons
High value chemicals (Steam cracking)	2161.08	2475

C-CO9.6/C-EU9.6/C-OG9.6**(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.****Investment start date**

January 1 2017

Investment end date

December 31 2017

Investment area

R&D

Technology area

Renewable energy

Investment maturity

Applied research and development

Investment figure

3622031.44

Low-carbon investment percentage

80

Please explain

Repsol is contributing to CO2 emissions reduction through the use of biofuels, incorporating bioethanol in gasoline and biodiesel and VO in gasoil. Regarding biofuel manufacturing, Repsol is: (1) Promoting advanced biofuel projects (from non-food raw materials, biomass) with strong technological development and heightened sustainability. Although we still haven't started production on this type of biofuel, our Technology Centre have projects in the development phase both for biotechnology processes as well as thermochemical processes. (2) Producing Hydrotreated Vegetable Oil or hydrobiodiesel in our refineries, which consists of a vegetable oil obtained from oleaginous seeds treated with hydrogen, makes up part of the gasoil composition). Repsol is also involved in the design of a micro-organism based on a new synthetic metabolic route, for the generation of new advanced biofuels.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Renewable energy

Investment maturity

Applied research and development

Investment figure

3109984.45

Low-carbon investment percentage

80

Please explain

Repsol is contributing to CO2 emissions reduction through the use of biofuels, incorporating bioethanol in gasoline and biodiesel and VO in gasoil. Regarding biofuel manufacturing, Repsol is: (1) Promoting advanced biofuel projects (from non-food raw materials, biomass) with strong technological development and heightened sustainability. Although we still haven't started production on this type of biofuel, our Technology Centre have projects in the development phase both for biotechnology processes as well as thermochemical processes. (2) Producing Hydrotreated Vegetable Oil or hydrobiodiesel in our refineries, which consists of a vegetable oil obtained from oleaginous seeds treated with hydrogen, makes up part of the gasoil composition). Repsol is also involved in the design of a micro-organism based on a new synthetic metabolic route, for the generation of new advanced biofuels.

Investment start date

January 1 2017

Investment end date

December 31 2017

Investment area

R&D

Technology area

Carbon capture and storage/utilisation

Investment maturity

Applied research and development

Investment figure

2727690.27

Low-carbon investment percentage

80

Please explain

Repsol is developing catalysts and processes for the use of CO2 as a raw material for polymers, eco-design methodology and its application to new polymer materials. Repsol is also developing carbon capture and storage technology for implementation in E&P assets

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Carbon capture and storage/utilisation

Investment maturity

Applied research and development

Investment figure

1634436.39

Low-carbon investment percentage

80

Please explain

Repsol is developing catalysts and processes for the use of CO2 as a raw material for polymers, eco-design methodology and its application to new polymer materials. Repsol is also developing carbon capture and storage technology for implementation in E&P assets

Investment start date

January 1 2017

Investment end date

December 31 2017

Investment area

R&D

Technology area

Other, please specify (Mobility)

Investment maturity

Applied research and development

Investment figure

4036430.77

Low-carbon investment percentage

90

Please explain**Investment start date**

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Mobility)

Investment maturity

Applied research and development

Investment figure

4062528.81

Low-carbon investment percentage

90

Please explain

Investment start date

January 1 2017

Investment end date

December 31 2017

Investment area

R&D

Technology area

Other, please specify (Energy efficiency)

Investment maturity

Pilot demonstration

Investment figure

444268.37

Low-carbon investment percentage

80

Please explain

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Energy efficiency)

Investment maturity

Pilot demonstration

Investment figure

877152.19

Low-carbon investment percentage

80

Please explain

C-OG9.7

(C-OG9.7) Disclose the breakeven price (US\$/BOE) required for cash neutrality during the reporting year, i.e. where cash flow from operations covers CAPEX and dividends paid/ share buybacks.

40

C-OG9.8

(C-OG9.8) Is your organization involved in the sequestration of CO2?

Yes

C-OG9.8a

(C-OG9.8a) Provide, in metric tons CO₂, gross masses of CO₂ transferred in and out of the reporting organization (as defined by the consolidation basis).

	CO ₂ transferred – reporting year (metric tons CO ₂)
CO ₂ transferred in	0
CO ₂ transferred out	27277

C-OG9.8b

(C-OG9.8b) Provide gross masses of CO₂ injected and stored for the purposes of CCS during the reporting year according to the injection and storage pathway.

Injection and storage pathway	Injected CO ₂ (metric tons CO ₂)	Percentage of injected CO ₂ intended for long-term (>100 year) storage	Year in which injection began	Cumulative CO ₂ injected and stored (metric tons CO ₂)
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C-OG9.8c

(C-OG9.8c) Provide clarification on any other relevant information pertaining to your activities related to transfer and sequestration of CO₂.

Part of the CO₂ emissions generated at Petronor Refinery are transferred to an external enterprise that use it as a raw material. The CO₂ flow transferred is registered with ultrasonic flow meters located in the refinery to calculate the amount sold.

Carbon capture, use and storage (CCUS): This technology will be critical to achieve the objectives of the Paris Agreement, since it is the only one capable of substantially reducing GHG emissions from fossil fuels. These fuels will continue to play a significant role in the future energy mix and CCUS will reduce emissions in sectors such as electric power generation or energy-intensive industries. This is one of the lines of work in which we are taking part in OGCI.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

LRQA 1802 cert 14064 esp ing.pdf
 REPSOL 14064 declaration Mamore 2017 -eng.pdf
 REPSOL 14064 declaration Malaysia 2017 - eng.pdf
 REPSOL 14064 declaration Margarita 2017 - en.pdf
 REPSOL 14064 declaration Campus 2017 Firmado-eng.pdf
 REPSOL 14064 declaration Ecuador 2017 -eng firmado.pdf
 REPSOL 14064 declaration CANADA 2017 -eng.pdf
 REPSOL 14064 declaration Casablanca 2017 Firmado-eng.pdf
 REPSOL QUIMICA Declaracion AENOR ISO 14064.pdf
 Declaración verificación Relapasa 2017.pdf
 REPSOL 14064 declaration Mostoles 2017 Firmado- eng.pdf
 REPSOL 14064 declaration Tres Cantos 2017 Firmado-eng.pdf

Page/ section reference

We have attached 12 files: - Chemical facilities (page 5-6). - Non industrial facilities: Campus (page 2), Tres Cantos (page 2) and CTR and CSF (page 2). - Refining

Facilities: Spanish refineries (page 1) and Peru refinery (page 1). - Upstream assets: Casablanca (page 2), Ecuador (page 2), Mamore (page 2), Margarita (page 2), Malaysia (page 2), Edson (Canadá)

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

96

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Page/ section reference

We have attached 12 files: - Chemical facilities (page 5-6). - Non industrial facilities: Campus (page 2), Tres Cantos (page 2) and CTR and CSF (page 2). - Refining Facilities: Spanish refineries (page 1) and Peru refinery (page 1). - Upstream assets: Casablanca (page 2), Ecuador (page 2), Mamore (page 2), Margarita (page 2), Malaysia (page 2), Edson (Canadá)

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

76

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Page/ section reference

We have attached 2 files: - First file: "2017 Sustainability report" Page 18: Climate Change/ our emissions / Scope 1. Verification letter 2017 Sustainability report" Pages 141-142: Verification letter - Second File: "2017 consolidated financial statement and auditors report. https://www.repsol.com/imagenes/global/en/2017_sustainability_report_tcm14-130393.pdf

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Page/ section reference

We have attached 2 files: - First file: "2017 Sustainability report" Page 18: Climate Change/ our emissions / Scope 1. Verification letter 2017 Sustainability report" Pages 141-142: Verification letter - Second File: "2017 consolidated financial statement and auditors report. https://www.repsol.com/imagenes/global/en/2017_sustainability_report_tcm14-130393.pdf

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

Page/ section reference

We have attached 2 files: - First file: "2017 Sustainability report" Page 18: Climate Change/ our emissions / Scope 1. Verification letter 2017 Sustainability report" Pages 141-142: Verification letter - Second File: "2017 consolidated financial statement and auditors report. https://www.repsol.com/imagenes/global/en/2017_sustainability_report_tcm14-130393.pdf

Relevant standard

A1000AS

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

Page/ section reference

We have attached 2 files: - First file: "2017 Sustainability report" Page 18: Climate Change/ our emissions / Scope 1. Verification letter 2017 Sustainability report" Pages 141-142: Verification letter - Second File: "2017 consolidated financial statement and auditors report. https://www.repsol.com/imagenes/global/en/2017_sustainability_report_tcm14-130393.pdf

Relevant standard

A1000AS

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope

Scope 3- all relevant categories

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

Page/section reference

We have attached 1 files: - First file: "2017 Sustainability report" Page 18: Climate Change/ our emissions / Scope 1. Verification letter 2017 Sustainability report" Pages 141-142: Verification letter https://www.repsol.com/imagenes/global/en/2017_sustainability_report_tcm14-130393.pdf

Relevant standard

ISAE3000

Scope

Scope 3- all relevant categories

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

Page/section reference

We have attached 1 files: - First file: "2017 Sustainability report" Page 18: Climate Change/ our emissions / Scope 1. Verification letter 2017 Sustainability report" Pages 141-142: Verification letter https://www.repsol.com/imagenes/global/en/2017_sustainability_report_tcm14-130393.pdf

Relevant standard

AA1000AS

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Emissions reduction activities	ISO 14064-1 (reasonable assurance)	During 2017, we implemented actions that reduce our CO2 emissions in 204.2 ktons . All the initiatives have been verified according to ISO14064, the same standard used to verify the GHG inventory. The reduction was a result of different investment and operating improvement actions across all the Company's operations. These verifications are carried out with annual frequency. To ensure transparency in the management of GHGs it is important for the company that a third party certifies this type of actions. These actions mainly include improvements in energy efficiency through projects such as energy unit integration, steam consumption optimization, improvements in isolation, furnace modifications, residual heat recovery, technological updating of the equipment, installation of variable speed motors, as well as actions to reduce the amount of flared and vented gas.
C6. Emissions data	Emissions reduction activities	Clima Projects" following the specifications established by the Spanish Ministry of Agriculture, Food and the Environment	Repsol manages its carbon footprint along the entire value chain. In this regard, we have developed two emissions reduction initiatives that reduce our Scope 3 emissions. Both initiatives have been managed and verified as "Clima Projects" following the specifications established by the Spanish Ministry of Agriculture, Food and the Environment. One of these was the "e-mobility activity program". In 2017, we continued to promote electrical mobility through IBIL. We have more than 1,000 operational charging points, and we continue to consolidate the fast-charging infrastructure for electric vehicles in Repsol Group service stations. The second one is the "Program of activities to encourage a shift from road transport to rail transport at Repsol".The total amount of CO2 reduced thanks to these project has been 345 t CO2 in 2017. These verifications are carried out with annual frequency. To ensure transparency in the management of GHGs it is important for the company that a third party certifies this type of actions
C6. Emissions data	Year on year change in emissions (Scope 1)	AA 1000 Assurance Standard (Moderate assurance) ISAE3000 (limited assurance).	The change in Scope 1 emissions between years 2006 and 2017 has been reported in our Integrated Management Report. In 2017 Deloitte has verified 100% Scope 1 GHG emissions. The data has been verified according to AA 1000 and ISAE3000, the standard used to verify the 2017 Integrated Management Repor. These verifications are carried out with annual frequency. To ensure transparency in the management of GHGs it is important for the company that a third party certifies the data of the company reports.
C6. Emissions data	Year on year change in emissions (Scope 2)	AA 1000 Assurance Standard (Moderate assurance) ISAE3000 (limited assurance).	The change in Scope 2 emissions between years 2006 and 2017 has been reported in our Integrated Management Report. In 2017 Deloitte has verified 100% Scope 2 GHG emissions. The data has been verified according to AA 1000 and ISAE3000, the standard used to verify the 2017 Integrated Management Repor. These verifications are carried out with annual frequency. To ensure transparency in the management of GHGs it is important for the company that a third party certifies the data of the company reports.
C6. Emissions data	Year on year emissions intensity figure	AA 1000 Assurance Standard (Moderate assurance) ISAE3000 (limited assurance).	The change in our emission intensity figure between years 2016 and 2017 has been reported in our Integrated Management Report. In 2017 Deloitte has verified the emission intensity figures reported. The data has been verified according to AA 1000 and ISAE3000, the standard used to verify the 2017 Integrated Management Repor. These verifications are carried out with annual frequency. To ensure transparency in the management of GHGs it is important for the company that a third party certifies the data of the company reports.
C12. Engagement	Other, please specify (Activities and events footprint)	ISO 14064-3 (limited assurance)	Repsol remains committed to offsetting the carbon footprint of some of its activities and events. In 2017, various initiatives and emission-reduction projects were launched to offset the adverse impact on the climate associated with specific activities. These efforts include offsetting the emissions from the General Shareholders' Meeting in 2017 (49 t CO2e), emissions generated by our participation in MotoGP World Championship (Repsol Team participation: 2140 tCO2e) and emissions generated by the organization and participation in the Spanish Motorcycle Speed Championship (353 tCO2e). Repsol has verified the tons of CO2 of each event with an independent entity. These verifications are carried out with annual frequency. To ensure transparency in the management of GHGs it is important for the company that a third party certifies this type of actions.

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

EU ETS

% of Scope 1 emissions covered by the ETS

62

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

8243258

Allowances purchased

3199388

Verified emissions in metric tons CO₂e

11442646

Details of ownership

Facilities we own and operate

Comment

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

Our strategy in the area of carbon markets is focused on the following aspects:

1. Manage EU ETS positions of Repsol's installations as a single integrated position to reduce emission costs and minimize market risk:

Repsol manages deficit positions of all affected business units (in Spain the Refining and Chemicals Business Units and in Portugal the Chemicals Business Units) in the EU ETS. During 2017 Repsol closely followed the EU legislative measure referred to the EU ETS Phase IV definition, anticipating price effects using different market tools such as futures, forwards and other structured operations that have contributed to evaluate and try to reduce the risk of the Group. We participate in IETA (International Emission Trading Association) emerging trading markets working group following the new carbon market developments wherever introduce national trading systems could have implications for Repsol's upstream or downstream assets.

2. New market-based Mechanism.

The current low prices and demand for carbon credits (CDM/JI projects) don't promote a global decrease of GHG. For this reason, New market-based Mechanism (NMM) has been proposed to stimulate emission reduction in developing countries beyond existing mechanisms under the Kyoto Protocol. UNFCCC (United Nations Framework Convention on Climate Change) will be responsible for developing rules as well as for the governance of mechanisms. Repsol is supporting those measures, monitoring and participating in industrial associations and think tanks in order to define the modalities and procedures of NMM.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit purchase

Project type

Forests

Project identification

Cordillera Azul National Park REDD Project

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

2542

Number of credits (metric tonnes CO2e): Risk adjusted volume

2542

Credits cancelled

Yes

Purpose, e.g. compliance

Voluntary Offsetting

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Stakeholder expectations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment

GHG Scope

Scope 1
Scope 2

Application

All business units in all counties where the company operates.

Actual price(s) used (Currency /metric ton)

25

Variance of price(s) used

Our carbon price pathway starts with 25 USD\$/t CO2 and this value will increase in the future. The aim is to reach 40 USD\$/t CO2 by 2025.

Type of internal carbon price

Shadow price

Impact & implication

Repsol supports carbon pricing as a policy framework that will contribute to provide our businesses with a clear roadmap for future investment. We believe carbon pricing encourages the most efficient ways of reducing emissions widely and increases investment in low carbon technologies. On the other hand, to be effective carbon pricing should be embedded in a coherent policy framework which safeguards a sector's international competitiveness. If governments act to price carbon, this discourages high carbon options and encourages the most efficient ways of reducing emissions widely, including reduced demand for the most carbon intensive fossil fuels, greater energy efficiency, switching the use of natural gas instead of coal, increased investment in carbon capture and storage, renewable energy, smart buildings and grids, cleaner cars and new mobility business models and behaviors. More precisely in our company, establishing an internal carbon pricing to evaluate investments, both in new projects or in modifications made to existing operations, helps us in our decision-making processes and allows us to demonstrate our stakeholders that we manage climate change risks adequately. Additionally, carbon pricing helps us determine our investments resilience to energy and climate policies future costs, such as taxes or emissions trading schemes, and boost an efficient energy design from an early stage.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism

% of suppliers by number

20

% total procurement spend (direct and indirect)

37

% Scope 3 emissions as reported in C6.5

5

Rationale for the coverage of your engagement

The 37% is the result of dividing the expenditure of those areas which have engagement with their suppliers by the total expenditure of the company. The areas included in the calculation are: Refining and chemical Division, Spain and Portugal commercial Division and Spain and Portugal lubricants Division

Impact of engagement, including measures of success

At the moment in the company is difficult to measure the exact impact of the engagement with our suppliers. We have some projects ongoing, for example, since 2016 the trading area (which is the responsible of providing the raw materials for refineries) has started to work with its suppliers to obtain primary data for GHG emission calculation.

Comment

Our supply chain management system evaluates suppliers to identify, among others, environmental risks. During supplier evaluation process suppliers must meet various qualification requirements among which are several related to climate change (emissions management and energy efficiency management). Consequently during the negotiation Repsol adds a special sustainability clause in the General Conditions for Purchasing and Contracting. In addition the suppliers of our refineries, chemical facilities and others assets certified with the international standard ISO50001 needs to meet a requirement of energy efficiency in all the equipment and services contracted. Because of that we have developed a procedure that establishes the energy efficiency requirements for the purchase of equipment and service contracts

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Collaboration & innovation

Details of engagement

Run a campaign to encourage innovation to reduce climate change impacts

Size of engagement

8

% Scope 3 emissions as reported in C6.5

0.04

Please explain the rationale for selecting this group of customers and scope of engagement

ALSA is one of Repsol's most important clients. It owns 4000 buses and 40 facilities in Spain, and is committed with the remote emissions monitoring. The sales of ALSA represent 73 million L/year over a total of 900 million L/year of the business unit (8% diesel oil sales volume). That is the reason why it has been selected to carry out a pilot test in this campaign to reduce climate change impacts.

Impact of engagement, including measures of success

In 2017 we monitored the emissions in one of ALSA's facilities, and measurements of 72 different vehicles were registered. In this case, 5 great emitters were identified (7% of the fleet). The inefficiency of this group of vehicles resulted in 9%. Considering that the consumption of each vehicle is 40,000 liters per year, each vehicle can reduce their diesel consumption in 2,800 L. This means a reduction of 7.7 tons of CO2 per year.

Type of engagement

Collaboration & innovation

Details of engagement

Run a campaign to encourage innovation to reduce climate change impacts

Size of engagement

0.02

% Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

FENAR is one of most important clients. The sales of FENAR represent million 160,000L/year over a total of 900 million L/year of the business unit (0,017% diesel oil sales volume).. This client was chosen for this pilot because it didn't have any kind of telematics installed in its vehicles. Also, it was a way to try to increase diesel sales to this particular client.

Impact of engagement, including measures of success

In 2016 we installed telematics in 3 different vehicles of FENAR's fleet. The information obtained was analyzed for several months. The estimate reduction in diesel consumption when installing this kind of equipment is between 5 and 10%. If we consider that this 3 buses reduced their consumption in 8%, then each would reduce 3,200 L a year (if we consider that each vehicle again consumes 40,000 L/year). This would imply reducing 5.28 tons of CO2 per year. This consumption reduction has been achieved in 2017

C12.1c

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

Climate-related engagement strategy with other partners in the value chain:

Repsol also seeks to engage investors and the civil society at large. In 2017 we held the forth "Repsol Sustainability Day", an event for analysts and investors, where the key projects were explained. Investors are also engaged through General Shareholders's Meeting.

On the other hand, we seek to engage the society through the Campus Open House Days and also the Road Racing World Championship Grand Prix. In our program of Corporate Volunteering, our employees reforest degraded areas or carried out energy efficiency working days at schools. In addition, Repsol promotes the Entrepreneurs Fund of the Fundacion Repsol. The Fund is aimed at entrepreneurs with innovative technological projects in the field of energy who have set up or intend to set up a company. Finally, Repsol seeks to give solutions to energy concerns of the society through the Smart Energy website, in which we explain different environmental topics, giving some tips for being more sustainable. To prioritize engagement Repsol analyzes the portfolio of socially responsible investors and seeks to increase it proving the effort carried out to reduce GHG emissions. For the Entrepreneurs Fund, Repsol launches different energy challenges (sustainable mobility, energy efficiency, digitization of the energy industry, energy storage ...) and selects the best proposals.

Measurements of success:

A measurement of success is the increase of the percentage of socially responsible investors in our portfolio, which has increased to a 14% in 2017 (from 12% in 2016). Another measurement of success is the number of visits of our Smart Energy website, which have also increased in 2017. The measurement of success of the Entrepreneurs Fund is the number of ideas received every year. (355 proposals received in 2017, 150 proposals more than received in 2016)

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers

Trade associations

Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Cap and trade	Support with minor exceptions	We have been directly involved with the policy makers in the discussions about the Commission proposal on the Emissions Trading System (ETS) Reform. Likewise, we have shared our messages with trade associations such as BusinessEurope, FuelsEurope. Scope: European Union	Regarding the Commission proposal on the ETS Reform, we believe EU ETS should remain as the cornerstone of climate policies in the EU. A modified ETS must therefore provide the right incentives towards a competitive low-carbon economy. The ETS Reform should support industrial competitiveness, guarantee security of supply and assure sustainability. The new framework must balance the efforts and reinforce competitiveness as a fundamental element to support growth and jobs. In the absence of a global agreement on climate change that includes all major contaminant countries, the risk of carbon leakage is critical and harms European Union industry, while discourages new industrial investments.
Cap and trade	Support with major exceptions	We have been directly involved with policy makers in the discussions on the Commission proposal related to the Revision of the Energy Efficiency Directive 2012/27/EU. We have also sent comments to BusinessEurope. Scope: European Union	Repsol supports one target-approach, the single GHG reduction target for 2030, as the most cost-efficient way to the low-carbon society using energy efficiency and use of renewable energy. The European Union should ensure that all the pieces of its energy and climate policy form a coherent whole in order to avoid a distorting effect on the carbon price. The main focus of the future climate policy should be on GHG emissions reduction rather than on setting specific targets for energy mix and energy efficiency. Industrial sectors should not be obliged parties of the energy efficiency directive post- 2020 as they have ETS to reduce GHG emissions through Energy efficiency and renewable sources.
Clean energy generation	Support with minor exceptions	We have been directly involved with the policy makers in the discussions about the Commission proposal on the Renewables Energy Directive Reform (RED II). Furthermore, we have responded to the European Commission Stakeholder Consultation on Alternative Fuels infrastructure.	Repsol welcomes the Commission's proposal on the Renewable Energy Directive II (RED II) as the policy instrument to promote the use of renewable energy in the electricity, heating & cooling and the transport sector and recognizes that the deployment of renewable energy is one of the main measures to tackle security of supply and climate change. Repsol considers that transport can play an important role in achieving the EU-wide renewable energy target of at least 27% renewables in 2030. Homogeneous policy across the EU will be key in creating conditions that remain predictable and stable over the long term and that prevent fragmentation of the EU single energy market
Climate finance	Support	We answered the public Commission stakeholder consultation "Public stakeholder consultation – Interim evaluation of Joint Undertakings operating under Horizon 2020." aimed to collect information from a wide audience on different aspects of the implementation of the Joint Undertakings operating under Horizon 2020.Scope: European Union	The main reasons for participating in Horizon 2020 are minimize risks, sharing knowledge and collaborate with the best. If the EU support to research and innovation (Horizon 2020 and its possible successor) were to be discontinued, the direct impact wouldn't be so high at first sight but would be more difficult to work with academia and other companies sharing risks.
Regulation of methane emissions	Support	Repsol engaged directly with Federal policy makers regarding proposed Methane regulations in Canada. This engagement was through our membership in Canadian Association of Petroleum Producers (CAPP) but the discussions were held with the individuals at Environment and Climate Change Canada. In addition, Repsol monitored Alberta's proposed changes to the regulation of methane emissions through our engagement with CAPP.	Repsol supports the identification of sources, the measurement and the mitigation of methane emissions, avoiding any legislation which may lead to double regulation or duplicities. In this sense, Repsol is fully committed to reduce its methane emissions and has recently endorsed the Climate and Clean Air Coalition Initiative – Oil and Gas Methane Partnership promoted by UN Environment

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

International Emissions Trading Association (IETA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

IETA encourages carbon pricing of many forms, but its primary focus it is on emissions trading because of its environmental assurance and economic advantages. Its vision is a single global carbon price produced by markets of high environmental integrity. In Europe, IETA supports the EU emissions trading system (ETS) as the central policy instrument of the 2030 Climate and Energy package. IETA highlights the importance of efficient functioning of the market, with predictable rules, greater policy coordination and appropriate measures to address ETS impacts on trade-exposed sectors. One of its priorities is to form a vision on longer-term strategic issues, such as extending the scope of the ETS, investment incentives for low-carbon technologies and use of markets to meet the European Union's rising ambitions.

How have you, or are you attempting to, influence the position?

During 2016, Repsol has participated in the EU ETS Working Group, the Extending the scope of the EU ETS to new sectors, EU Working Group and in the Overlapping Policies and Carbon Leakage Post 2020 Task Forces.

Trade association

FuelsEurope

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

FuelsEurope recognizes that climate change is real and warrants action towards a global challenge. To address a global challenge global actions are required. These measures should however be compatible with the need to supply energy to a growing world population. Increasing volumes of energy – secure, reliable and affordable - are necessary to fight poverty in several regions of the world, to permit access to higher living standards to a rising middle class in many developing countries and to maintain today's life quality in the developed countries. The EU refining industry is committed to contribute to this objective by continuing to reduce its CO2 emissions and providing the economy and citizens with low-carbon fuels and other products that society needs. Development of a diversity of energies and energy carriers will give an economy flexibility, resilience and the possibility for the market to select the optimal solution for every sector and use. Liquid fuels, with their unique characteristics will continue to be

employed in many transport fields. Therefore, the EU refining industry has an important and enduring role to play in the energy choices of the future, by providing low-carbon liquid fuels to complement low-carbon electrons, gas and hydrogen as energy carriers. Technology and collaboration across industries will facilitate the production of these low-carbon liquid fuels.

How have you, or are you attempting to, influence the position?

Repsol is member of the board and participates actively in several working groups of the association related with EU Emission Trade System, Transport, etc.

Trade association

International Association of Oil and Gas Producers (IOGP)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

IOGP recognizes the risks of climate change due to rising greenhouse gas emissions and has welcomed the Paris Agreement. Greenhouse gas emissions come from a variety of sources, including agriculture and hydro-carbon-fueled transport and industrial activity that the world still needs to drive economic growth and improve living conditions in developing nations. IOGP supports the international community's commitment to address the global challenge of climate change and also believes that the oil and gas industry is very much a part of the solution to this challenge, which can be addressed while meeting society's future energy needs. The long-term objective of climate change policy should be to reduce the risk of serious impacts on society and ecosystems, while recognizing the importance of reliable and affordable energy to society.

How have you, or are you attempting to, influence the position?

Repsol participates in the EU Committee which is the one directly dealing with European legislation and engaging European regulators. Under the EU Committee there are also many Sub Committees and Task Forces in which we are also involved. The special interest for this project is the Energy and Climate Subcommittee reviewing the Climate Change policy. We collaborate with the position participating in the Conference calls, face to face meetings, reviewing and making comments to position papers

Trade association

PlasticsEurope

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

PlasticsEurope is one of the leading industrial trade associations in Europe. It gathers 55 industrial companies, which produce nearly 90% of all polymers across the EU28 member states plus Norway, Switzerland and Turkey. Plastics Europe promotes the positive contributions of plastics by communicating plastics contribution to sustainable development, innovation and quality of life. The association highlights the material's beneficial properties throughout its life cycle, making relevant contributions to sustainable welfare by facilitating resource efficiency and climate protection: Not only most plastics products require less energy for their production if compared to alternative materials but also many of them help saving significant amounts of energy during their lifespan use (lightweight materials for transport, insulation for building and construction, energy savings in packaging, etc). Plastics Europe promotes the use of Life Cycle Thinking (LCT) to improve understanding about product benefits and to take more informed decisions. As a scientific method, Life Cycle Assessment (LCA) is a technique to analyze the potential environmental impacts associated with a product, process or service.

How have you, or are you attempting to, influence the position?

Repsol participates in several working groups and task forces such as Life Cycle Task Force, among others. This group is developing eco profiles that are Life Cycle Inventory datasets (LCI) and Environmental Product Declarations (EPD) for plastics. Repsol is also collaborating with Plastics Europe to implement Circular Economy concepts and approach on what regards plastic materials.

Trade association

CEFIC

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

CEFIC is one of the leading industrial trade associations in Europe, and acts as the voice of the chemical industry in Europe. It represents 29,000 large, medium and small chemical companies in Europe, which directly provide 1.2 million jobs and account for 17% of world chemical production. The chemical industry is committed to contributing to the agreed EU targets of reducing greenhouse gas emissions, including the Clean Energy Package proposal of the European Union and its ambitions to reform and harmonise energy markets in Europe and to pioneer the low-carbon economy for the benefit of all its citizens. In December 2015, the European Chemical Council publicly backed the Paris Climate Agreements with their strong global commitments, and applauded the diplomatic efforts to achieve an ambitious and globally-binding agreement, as stated again on their most recent press release in June 1st 2017. With the strong belief that the EU chemical industry is a pillar for tomorrow's low carbon economy, the association reminds that Chemical innovations enable current and future climate change solutions, including renewable energy, energy storage and thousands of products to improve energy efficiency, such as in vehicles and buildings.

How have you, or are you attempting to, influence the position?

Repsol participates in several working groups and task forces such as Energy & Climate Change Programme Committee, among others.

Trade association

BusinessEurope

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Climate change is a global challenge that requires global actions. BUSINESSEUROPE is committed to and aware of the challenges that climate change presents as well as the impacts of human activities. This is why they firmly expect an ambitious legally binding global agreement, which reflects the long-term objective of limiting global warming below 2°C. Development of a global carbon market should play a stronger role in the future. Economic instruments can best help to stimulate investment in innovative low-carbon technologies and products in locations where they deliver the greatest possible climate benefits at the lowest costs.

How have you, or are you attempting to, influence the position?

Repsol participates in several working groups such as Energy and Climate Action Working Group, the Environment Working Group, the BusinessEurope's Advisory and Support Group.

Trade association

Canadian Association of Petroleum Producers (CAPP)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

CAPP's Climate Change Policy Principles Canada's oil and natural gas producers are ready and willing to do their part to contribute to the overall Canadian plan on climate change. Collaborative and solutions-oriented • Given Canada's climate commitments and industry impacts, CAPP will proactively collaborate with governments and stakeholders towards appropriate policy solutions. • Policy solutions need to be adaptive and carefully consider environmental, economic, and social outcomes. Efficient, effective & predictable • Climate policy should target reductions where they are most efficient and effective right across the entire energy value chain from production to end use and considering fairly all sectors and jurisdictions. • Climate change policies should achieve emissions reductions at the least cost to Canadians, the economy and industry. • Revenues from climate policy should be fully recycled back into the economy to incent innovation, assist transition or reduce other taxes and levies. Technology and innovation focused • Policy should incent technology and innovation to address climate change, and capture the opportunity to export solutions to the world. • Considerable future emissions reductions will stem from improving the hydrocarbon energy sector requiring continuing strong innovation and policy effort in these areas. Globally competitive • Canada's climate policies must ensure Canada's resource development is cost and carbon competitive with other jurisdictions, especially the U.S. as Canada's largest trading partner. • Canada's climate policy leadership should bring proportionate benefits to Canada, including ensuring the industry receives full value for Canadian energy products through effective access to global markets. • Canada is highly dependent on the development and trade of its natural resources, and on its ability to attract foreign investment. Canada's climate policies must be designed to maintain Canada's ability to raise global investment capital.

How have you, or are you attempting to, influence the position?

Repsol participated in the development of policy positions at CAPP. Repsol's employees are participating in various committees and working groups, several of which are responsible for developing positions on policies and influencing emerging legislations or changes to legislation and regulations related to climate change, carbon price, energy efficiency and methane emission reductions.

Trade association

Canadian Chamber of Commerce

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Canadian Chamber of Commerce supports evidence-based policymaking that appropriately accounts for environmental externalities as well as efforts by the government of Canada to cooperate with provinces and territories to address environmental issues that are of shared jurisdiction. The Chamber favors a price on carbon, supports the creation of a water strategy and believes in the imperative to foster technological innovation and ensure efficient regulatory processes.

How have you, or are you attempting to, influence the position?

Repsol participated in the Chamber's committee on natural resources and, which is in charge of the development of the Chamber's policy positions on climate change.

Trade association

AEGLP (European LPG Association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Climate change constitutes a problem of unprecedented scope, complexity and importance for humanity in general and for the policy community in particular. Achieving a global consensus on how and when to act while balancing competing environmental, social, political and economic imperatives is a challenge but it is a challenge that must be met. As citizens and as representatives of a clean and relatively low carbon gaseous fuel, the European LPG industry strongly supports the emergence of an ambitious EU climate strategy, and is committed to optimizing LPG's role in the transition towards a more climate friendly energy model. Combining an established market presence with CO2 emission advantages over more carbon intensive alternatives such as coal, oil and conventionally generated electricity, LPG can and should be part of the solution. LPG's climate credentials are significantly enhanced by the emerging evidence regarding the role of black carbon in global warming. Due to the clean combustion typically associated with gaseous fuels, LPG generates extremely low levels of black carbon, making it an ideal component of any global warming reduction strategy. Moreover, its portability makes it an ideal auxiliary fuel for systems based on renewable energy such as solar thermal and photovoltaic, particularly in areas beyond the reach of the natural gas network. Finally, as Europe's leading alternative fuel (see the transport section of the website for details), LPG is helping to tackle the particularly persistent challenge of reducing CO2 and black carbon emissions in the European road transport sector.

How have you, or are you attempting to, influence the position?

Repsol is member of the AEGLP Steering Committee and Policy Coordination working group.

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Repsol has been a part of the Oil and Gas Climate Initiative (OGCI) along with nine other leading sector companies to collaborate on climate actions since 2015, sharing best practices and technological solutions. In 2016 a fund was created to invest US\$1 billion over 10 years to develop and accelerate the commercial deployment of low-emission technologies. The recently created fund will invest in the development of innovative technologies that, once marketed, will contribute in the future to significantly reducing GHG emissions. It will also work jointly with similar initiatives from other sectors and stakeholders. The two areas on which the activity of the OGCI investment vehicle will focus in principle will be the development and implementation of technologies for capturing, utilizing, and storing carbon; and the reduction of methane emissions throughout the value chain to promote the role of natural gas as a fuel for generating electricity.

OGCI is a voluntary, CEO-led initiative, which supply a fifth of world oil and gas production and nearly 10% of the world's energy. The main lines of work are as follows:

- Establish the **road map towards a low-emission future**: we are researching the areas where the Oil & Gas sector can work to achieve the objective of limiting the increase in global temperature to 2 °C.
- **Manage methane emissions**: we are collaborating in the research required to gain in-depth knowledge of methane emissions and detection technology to help both companies and governments to act with greater effectiveness.
- Carbon Capture, Utilization, and Storage (**CCUS**): the large-scale use of this technology will make us reduce costs, develop viable market mechanisms, and improve our understanding of geological storage capacity.
- **Energy efficiency and energy efficiency in transport** have started their activities recently. In those activity lines O&G industry can play a relevant role and influence due to its expertise and background over time.

In 2016 Repsol joined the UN Environment's Climate & Clean Air Coalition – Oil & Gas Methane Partnership to implement methane emission reduction projects in collaboration with other companies, institutions and governments. We seek to eliminate barriers and come up with technical and economically viable solutions. Repsol also joined the World Bank's Zero Routine Flaring by 2030 initiative, which allows us to collaborate with other companies and institutions to look for the most advanced technologies that minimize the routine gas flaring by 2030. III Energy for Europe Conference: On Thursday 28 September 2017, Repsol organised the III Annual Repsol Conference in Brussels entitled "Energy for Europe – thinking and acting globally". The Conference attracted members of the European Institutions and stakeholders from industry and civil society. Antonio Brufau, Chairman of Repsol, opened the conference. He stated "The real challenge for every country is to reduce and monitor emissions without losing the ability to meet energy demand and improve the welfare of citizens". Keynote speakers and two panel discussions looked at the geopolitics of energy and the role of the energy sector in delivering a sustainable economy.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

The Sustainability Division of Repsol has responsibilities for developing a corporate carbon strategy. At the same time, Repsol establishes internal working groups to follow policy and regulation that may affect the company and also to coordinate the engagement activities that are undertaken related to these policies regulations. These groups create legislative records to summarize the status of every legislative proposal and regulation that could affect Repsol. The possible impacts and common position of the company are outlined in those documents, so that they can be used by all employees involved in the process. This is to ensure proper coordination of the regulatory activities of the company. The members of these groups are also participants in trade associations. They share the information they receive from the trade associations along with the association's position and activities with the rest of the members of the group. The members of these groups are also the experts on areas affected by a specific regulation as well as some members from the Sustainability Division if the regulation is related to climate change and from the European Affairs Division if it comes from the European Union. The internal working groups arrange team meetings regularly, which guarantee proper coordination among team members and across the company.

CANADA: The Institutional Relations Direction has accountability for engagements with policymakers in Canada and is committed to perform Repsol's engagement on the climate policy consistent with Repsol's corporate strategy and overall corporate position on carbon price and climate change. In coordination with the Canadian Business Unit, both teams collaborate to ensure alignment between federal and provincial work on these policies.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports in accordance with TCFD recommendations

Status

Complete

Attach the document

2017_Integrated_management_report_tcm14-123306.pdf

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Publication

Other, please specify (In mainstream reports,not CDSB Framework)

Status

Complete

Attach the document

2017_Consolidated_financial_statements_and_auditors_report_tcm14-123298.pdf

Content elements

Risks & opportunities
Emissions figures
Other metrics

Publication

In voluntary communications

Status

Complete

Attach the document

Informe Anual Repsol_2017.pdf

Content elements

Strategy
Emissions figures

Publication

In voluntary communications

Status

Complete

Attach the document

Global_Sustainability_Plan_june_2017.pdf

Content elements

Strategy
Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

plan_sostenibilidad_informe_cierre_a_coruna_2017_tcm13-126700.pdf

Content elements

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

2017 Sustainability Plan and Year-end Report-Cartagena (in spanish).pdf

Content elements

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

2017 Sustainability Plan and Year-end Report_Petronor (in spanish).pdf

Content elements

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

2017 Sustainability Plan and Year-end Report_Puertollano (in spanish).pdf

Content elements

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

2017 Sustainability Plan and Year-end Report_Tarragona (in spanish).pdf

Content elements

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

SP_and_Year_End_Report_Brazil_2017.pdf

Content elements

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

SP_and_Year_End_Report_Ecuador_2017.pdf

Content elements

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

SP_and_Year_End_Report_Peru_2017.pdf

Content elements

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

repsol-en-sustainability-climate-change-index.pdf

Content elements

Strategy

Publication

In voluntary communications

Status

Complete

Attach the document

repsol-en-sustainability-climate-change-our-commitment.pdf

Content elements

Strategy

Publication

In voluntary communications

Status

Complete

Attach the document

repsol-en-sustainability-climate-change-our-climate-change-strategy.pdf

Content elements

Strategy

Publication

In voluntary communications

Status

Complete

Attach the document

repsol-en-sustainability-climate-change-carbon-capture-use-and-storage.pdf

Content elements

Strategy

Other, please specify (Carbon capture, use and storage)

Publication

In voluntary communications

Status

Complete

Attach the document

repsol-en-sustainability-climate-change-carbon-pricing.pdf

Content elements

Strategy

Other, please specify (carbon pricing)

Publication

In voluntary communications

Status

Complete

Attach the document

repsol-en-sustainability-climate-change-energy-efficiency.pdf

Content elements

Strategy

Other, please specify (Energy efficiency)

Publication

In voluntary communications

Status

Complete

Attach the document

repsol-en-sustainability-climate-change-key-role-of-natural-gas.pdf

Content elements

Strategy

Other, please specify (Role of natural gas)

Publication

In voluntary communications

Status

Complete

Attach the document

repsol-en-sustainability-climate-change-new-energy-solutions.pdf

Content elements

Strategy

Other, please specify (new energy solutions)

Publication

In voluntary communications

Status

Complete

Attach the document

ESG2017_ROADSHOW_REPSOL_24082017.pdf

Content elements

Strategy

Emissions figures

Emission targets

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer Member of the Delegate Committee Executive Director Member of the Corporate Executive Committee	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to
I am submitting my response	Public	Investors

Please state the main reason why you are declining to respond to your Customers

Company policy not to respond to Customers

Please confirm below

I have read and accept the applicable Terms