

Repsol, S.A.
and investees comprising the Repsol Group

Audit Report,
Consolidated Financial statements and
Consolidated Management Report
as at 31 December 2019



This version of our report is a free translation of the original, which was prepared in Spanish. All possible care has been taken to ensure that the translation is an accurate representation of the original. However, in all matters of interpretation of information, views or opinions, the original language version of our report takes precedence over this translation.

Independent auditor's report on the consolidated financial statements

To the shareholders of Repsol, S.A.:

Report on the consolidated financial statements

Opinion

We have audited the consolidated financial statements of Repsol, S.A. (the Parent company) and investees comprising the Repsol Group (the Group), which comprise the balance sheet as at December 31, 2019, and the income statement, statement of other comprehensive income, statement of changes in equity, cash flow statement and related notes, all consolidated, for the year then ended.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the equity and financial position of the Group as at December 31, 2019, as well as its financial performance and cash flows, all consolidated, for the year then ended, in accordance with International Financial Reporting Standards as adopted by the European Union (IFRS-EU) and other provisions of the financial reporting framework applicable in Spain.

Basis for opinion

We conducted our audit in accordance with legislation governing the audit practice in Spain. Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of our report.

We are independent of the Group in accordance with the ethical requirements, including those relating to independence, that are relevant to our audit of the consolidated financial statements in Spain, in accordance with legislation governing the audit practice. In this regard, we have not rendered services other than those relating to the audit of the accounts, and situations or circumstances have not arisen that, in accordance with the provisions of the aforementioned legislation, have affected our necessary independence such that it has been compromised.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter	How our audit addressed the key audit matter
<p data-bbox="261 477 790 566">Assessment of the recovery of the carrying amount of the Group's non-current assets in Upstream</p> <p data-bbox="261 600 823 869">The accompanying consolidated financial statements present intangible assets (including goodwill) and property, plant and equipment in the Upstream segment amounting to €3,038 million and €11,447 million, respectively, 31 December 2019. These assets are allocated to cash generating units (CGUs) as indicated in notes 12 and 13 to the accompanying consolidated financial statements.</p> <p data-bbox="261 902 823 1081">Similarly, as indicated in note 14 to the accompanying consolidated financial statements, the Group has several investments in the Upstream segment carried under the equity method with a carrying amount at year-end 2019 of €6,780 million.</p> <p data-bbox="261 1115 836 1361">The Group performs an analysis of impairment of the assets indicated by CGU on an annual basis, in accordance with the criteria described in note 3.5. and determines their recoverable amount based on the present value of the future cash flows generated by them, taking into account the business plans approved by management.</p> <p data-bbox="261 1395 839 1879">As indicated in notes 2.4 and 21, the Board of Directors of the parent company approved a new strategic approach in late 2019, which will form the basis for the Group's forthcoming strategic plan (2020-2025), in which the Group commits to achieving net zero carbon dioxide emissions in 2050 and a gradual reduction in its carbon intensity indicator in keeping with the Paris Agreement and UN Sustainable Development goals. This, coupled with the new dynamics on the hydrocarbon markets, particularly the North American natural gas market, has meant that future price expectations of crude oil and natural gas, taken into account in the annual impairment testing, have been revised downwards.</p>	<p data-bbox="866 600 1434 723">We started our analysis by gaining an understanding on both the methodology applied and the relevant controls that the Group has in place to analyse asset recovery.</p> <p data-bbox="866 757 1444 902">In addition, we considered the adequacy of the allocation of assets to CGUs and the process for identifying those requiring an assessment of impairment, in accordance with applicable legislation.</p> <p data-bbox="866 936 1460 1115">Moreover, we gained an understanding of the environment (price performance, presentation of results of other companies in the industry, analyst reports, etc.) in order to assess the Group's vision for consistency with the real situation in the global hydrocarbon marketplace.</p> <p data-bbox="866 1149 1476 1417">With the collaboration of our valuation experts, we assessed the adequacy of the valuation models employed, the assumptions and estimates used in the calculations, including both short and long-term estimates of the evolution of hydrocarbon prices, the estimation of hydrocarbon reserves by internal and external experts, production profiles, operational costs, the necessary investments to develop existing reserves and discount rates.</p> <p data-bbox="866 1451 1476 1597">Specifically, with respect to future hydrocarbon prices, we compared management's estimates with the information published by investment banks, consultancy firms and relevant industry organisations and agencies.</p>



Key audit matter	How our audit addressed the key audit matter
<p>The key assumptions employed in estimating these cash flows for the purposes of analysing impairment are detailed in notes 3.5 and 21 to the accompanying consolidated financial statements.</p> <p>In addition, management has carried out a sensitivity analysis (note 21.2) on the key assumptions which, in light of earlier experience, may reasonably show variations.</p> <p>As a result of these analyses, Group management has recognised measurement adjustments, net of reversals, in the Upstream segment for the amounts indicated in note 21.1.</p> <p>This matter is key because it entails management applying critical judgements and significant estimates in terms of the key assumptions used, which are subject to uncertainty, while significant future changes in key assumptions could have a significant impact on the Group's consolidated financial statements.</p>	<p>Concerning the estimation of hydrocarbon reserves, we gained an understanding of the process established by the Group in this respect, which includes the use of management experts, and assessed the results of the work and competence, capacity and objectivity of these experts, in order to satisfy ourselves that they were properly qualified to calculate an estimate of volumes. In addition, we verified the consistency of the volumes estimated by management experts with the data used in determining the recoverable value of the assets.</p> <p>Similarly, we checked the mathematical accuracy of the calculations and models prepared by management and verified the recoverable amount calculated by the Group with the carrying amount of the assets in order to assess the existence or otherwise of impairment or reversal of impairment, as appropriate.</p> <p>We assessed the sensitivity calculations carried out by management and the estimates of the magnitude of the change in the key assumptions required to trigger asset impairment, or the reversal of the impairment allowance.</p> <p>We also assessed the sufficiency of the information disclosed in the consolidated financial statements with respect to the assessment of the recoverable amount of these assets.</p> <p>Based on the procedures carried out, we consider that management's approach and conclusions and the information disclosed in the accompanying consolidated financial statements are reasonable and consistent with the evidence obtained.</p>

Key audit matter
How our audit addressed the key audit matter
Assessment of the recovery of the carrying amount of deferred tax assets

As shown in the accompanying consolidated balance sheet, at 31 December 2019 the deferred tax asset balance amounts to €4,050 million, with, available tax loss carryforwards and deductions amounting to €3,193 million, according to note 23.3 to the accompanying consolidated financial statements.

When assessing whether the amount recognised in the consolidated financial statements for these assets is recoverable, Group management factors in, as mentioned in notes 3.5 and 23.3, future tax profits forecast using the methodology defined to analyse the recovery of its assets, the evaluation of the estimates of results of each entity or tax group in accordance with the Group's strategic plan, applicable tax legislation and the limit regarding the recoverability of such assets.

As a result of the above analyses, Group management has reduced the amount of deferred tax assets recognised on the balance sheet by the amount indicated in notes 21.1 and 23.3.

This is a key matter due to the nature and significance of the assets recognised and because it entails the use of significant estimates in terms of future tax profits, affecting the assessment of the recovery of these assets.

We started our analysis by gaining an understanding on both the methodology applied and the relevant controls that the Group has in place to analyse the recovery of these assets.

We also verified the consistency of the assumptions employed by management in the financial projections used to determine future tax profits with the assumptions used in testing the Group's intangible assets and property, plant and equipment for impairment.

Moreover, together with our tax experts, we assessed the estimate of corporate income tax, basically in relation to the appropriateness of the tax treatment of the operations performed and the calculations of deferred tax assets with respect to applicable tax legislation.

We also assessed the sufficiency of the information disclosed in the consolidated financial statements concerning the measurement and recognition of these assets.

Based on the work carried out, we consider that the assumptions and estimates employed by Group management with respect to the recovery of the assets analysed are reasonable and consistent with the evidence obtained.

Assessment of the recovery of the Group's assets in Venezuela

As indicated in note 21.3 to the accompanying consolidated financial statements, the Group's asset exposure in Venezuela at 31 December 2019 amounts to €239 million. This amount mainly includes the financing in dollars granted by the Group to the joint ventures Cardon IV, S.A. and Petroquiriquire, S.A. (note 9.1) amounting to €426 million and the trade receivables with Petróleos de Venezuela, S.A. (PDVSA) amounting to €347 million that are presented as Other non-current assets (Note 16), less provisions for liabilities and charges amounting to €495 million (note 14).

Our analysis started with understanding the processes that the Group has in place to perform the analysis of the assets' value, including the relevant controls implemented.

With the collaboration of our team in Venezuela, we gained an understanding of the country's political, social and economic situation.

Key audit matter	How our audit addressed the key audit matter
<p>As detailed in note 21.3, the country's general situation is affected by an economic recession, a regulated exchange system, high levels of inflation and the constant devaluation of local currency, an oil sector characterised by major public sector intervention and involvement, with sharply declining output in the past few years, political instability, the state of economic emergency and international disciplinary measures, among others.</p> <p>Except in the case of Quiriquire Gas, S.A., whose carrying amount is zero, the functional currency of investments in Venezuela is the US dollar, as indicated in note 21.3 to the accompanying consolidated financial statements.</p> <p>Within the context described, the Group analysed the recovery of its investments in Venezuela and the credit risk associated with its accounts receivable with PDVSA and recognised impairment of €180 million in the consolidated income statement, as detailed in note 21.3.</p> <p>In order to determine the expected loss on the loans to the joint ventures and the accounts receivable with PDVSA, the Group hired an independent expert to validate management's judgements.</p> <p>This matter requires a high level of judgement and estimation that management should make in order to assess the recovery of its assets in Venezuela and so has been considered a key audit matter.</p>	<p>With respect to the investment in Cardón IV, S.A., we assessed the competence and objectivity of the auditor of this component and obtained and assessed the communications issued by him, including his overall findings, conclusions and opinion.</p> <p>Additionally, we applied certain audit procedures on the financial statements of Cardón IV, S.A. and Petroquiriquire, S.A. that have been included in the Group's consolidated financial statements using the equity method.</p> <p>With respect to the analysis of impairment losses on non-current assets of the above companies, we carried out audit procedures like those described previously in the key audit matter section "Assessment of the recovery of the carrying amount of the Group's non-current assets in Upstream"</p> <p>In addition, we analysed the reasonableness of the provision for contingencies and charges recorded.</p> <p>In order to analyse the credit risk on the loans granted to the joint ventures and the accounts receivable with PDVSA, we carried out the following audit procedures, among others:</p> <ul style="list-style-type: none"> • Obtaining and assessment of the loan contracts with Cardon IV, S.A. and Petroquiriquire, S.A. and other relevant contractual information. • Together with our experts in financial instruments, we analysed the reasonableness of the expected loss model prepared by management. • We analysed the information included in the report of the independent expert, engaged by the Group to assess management's judgements on Venezuela's credit risk and assessed the competence of this expert and his objectivity to satisfy ourselves that he was properly qualified to perform that engagement.



Key audit matter	How our audit addressed the key audit matter
	<p>Finally, we assessed the sufficiency of the information disclosed in the consolidated financial statements concerning the situation in Venezuela, the Group's presence in the country and the assumptions underpinning the measurement of these assets.</p> <p>Based on the work carried out, we consider that the assumptions and estimates employed by Group management with respect to the recovery of the assets analysed are reasonable and consistent with the evidence obtained</p>
<p>Analysis of the effects of the partial arbitration award in relation to the acquisition of Talisman Energy UK Limited (TSEUK), currently Repsol Sinopec Resources UK Limited (RSRUK)</p> <p>As mentioned in note 15 to the accompanying consolidated financial statements, Addax Petroleum UK Limited (Addax) and Sinopec International Petroleum Exploration and Production Corporation (Sinopec) filed a "Notice of arbitration" against Talisman Energy Inc. (currently "Repsol Oil & Gas Canada Inc. – ROGCI") and Talisman Colombia Holdco Limited (TCHL) in relation to the acquisition of 49% of the shares of TSEUK in 2012 by Addax and Sinopec. This transaction took place before the acquisition of the Talisman group by Repsol in 2015.</p> <p>On 29 January 2020 the Arbitration Court of Singapore issued a partial arbitration award, deciding that ROGCI and TCHL are liable vis-à-vis Sinopec and Addax for certain information and representations provided during the aforementioned acquisition process. The partial award issued addresses one of the five issued to be settled with respect to the liability phase of the established procedure. The Court has signalled that it will decide on the other issues through subsequent awards although it is currently unknown when these will be issued. Once a decision has been taken on all issues, a new procedural phase will be necessary in order to determine the amounts involved, no timeline having yet been established. Repsol Group management considers that the final award will not be issued before the first quarter of 2022, time when the amount of the indemnity to be settled will be established.</p>	<p>Our audit procedures relating to this matter included the following, among others:</p> <ul style="list-style-type: none">• Meetings and discussions with Group management to understand their analysis and assessment of the risks underlying the arbitration award.• Obtaining the assessment of the Group's external lawyers concerning the classification of the risks identified for the Repsol Group in the award received and their implications.• With the collaboration of our legal experts, we analysed the award documentation and assessed whether the risks identified therein by internal and external lawyers agree with its content.• Understanding and assessing the methodology applied by the Group in order to quantify the risks deriving from its analysis of the arbitration award and verifying whether the risks quantified by the Group agree with those resulting from the award received.• Checking the estimates made with the documentation included in the arbitration award and verifying the mathematical accuracy of the calculations prepared by management.



Key audit matter	How our audit addressed the key audit matter
<p>Under these circumstances, and in view of this first partial award and the information currently available, Repsol Group management estimated the economic impacts that could finally result from the dispute as a whole and established the relevant provision in its consolidated financial statements at 31 December 2019, as indicated in note 15.</p> <p>This is a key matter as it entails management applying critical judgements and significant estimates in the calculations made, which are subject to uncertainty, and because changes in the evolution of such arbitration could have a significant impact on the Group's consolidated financial statements</p>	<p>Finally, we considered the sufficiency and adequacy of the information disclosed in the consolidated financial statements concerning this matter.</p> <p>Based on the procedures carried out, we consider that management's approach and conclusions and the information disclosed in the accompanying consolidated financial statements are consistent with the available evidence.</p>

Other information: Consolidated management report

Other information comprises only the consolidated management report for the 2019 financial year, the formulation of which is the responsibility of the Parent company's directors and does not form an integral part of the consolidated financial statements.

Our audit opinion on the consolidated financial statements does not cover the consolidated management report. Our responsibility regarding the information contained in the consolidated management report is defined in the regulation governing financial statement audit work, which establishes two distinct levels of responsibility:

- a) A specific level applicable to the consolidated non-financial statement and some of the information included in the Annual Corporate Governance Report, as defined in article 35.2.b) of Spanish Law 22/2015, the Audit Act, which consists of solely checking that the required information has been provided in the management report or, where appropriate, it has been included a reference to the separate report on non-financial information in the prescribed manner; otherwise, reporting that it has not.
- b) A general level applicable to the remaining information included in the consolidated management report, which consists on evaluating and reporting on the consistency between the aforesaid information and the consolidated financial statements as a result of our knowledge of the Group obtained during the audit of the aforementioned financial statements, and does not include information different to that obtained as evidence during our audit. Likewise, our responsibility is to evaluate and report on whether the content and presentation of this part of the consolidated management report are in accordance with applicable regulations. If, based on the work we have performed, we conclude that material misstatements exist, we are required to report that fact.

On the basis of the work performed, as described above, we have verified that the information mentioned in a) above is included in the consolidated management report and that the remaining information contained in the consolidated management report is consistent with that contained in the consolidated financial statements for the 2019 financial year, and its content and presentation are in accordance with the applicable regulations.



Responsibility of the directors and the audit and control committee for the consolidated financial statements

The Parent company's directors are responsible for the preparation of the accompanying consolidated financial statements, such that they fairly present the consolidated equity, financial position and financial performance of the Group, in accordance with International Financial Reporting Standards as adopted by the European Union and other provisions of the financial reporting framework applicable to the Group in Spain, and for such internal control as the directors determine is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Parent company's directors are responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group or to cease operations, or have no realistic alternative but to do so.

The Parent company's audit and control committee is responsible for overseeing the process of preparation and presentation of the consolidated financial statements.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with legislation governing the audit practice in Spain will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with legislation governing the audit practice in Spain, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Parent company's directors.



Repsol, S.A. and investees comprising the Repsol Group

- Conclude on the appropriateness of the Parent company's directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Parent company's audit and control committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Parent company's audit and control committee with a statement that we have complied with relevant ethical requirements, including those relating to independence, and we communicate with the audit and control committee those matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Parent company's audit and control committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters.

We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Report on other legal and regulatory requirements

Report to the Parent company's audit and control committee

The opinion expressed in this report is consistent with the content of our additional report to the Parent company's audit and control committee dated February 20, 2019.

Appointment period

The General Ordinary Shareholders' Meeting held on May 19, 2017, appointed us as auditors of the Group for a period of three years, as from the year ended December 31, 2018.



Repsol, S.A. and investees comprising the Repsol Group

Services provided

Services provided to the audited Group for services other than the audit of the accounts are disclosed in note 32.2 to the consolidated financial statements.

PricewaterhouseCoopers Auditores, S.L. (S0242)



Iñaki Goirienea Basualdu (16198)

February 20, 2020



Repsol, S.A. and investees comprising the Repsol Group

REPSOL\OPINION 31-12-19 CONSOL INGLES/ N° Protocolo 156759

REPSOL, S.A.

AUDIT REPORT, CONSOLIDATED FINANCIAL STATEMENTS AND CONSOLIDATED
MANAGEMENT REPORT AT 31 DECEMBER 2019

DISTRIBUCION

CLIENTE

5

PwC - Madrid

1

6

REPSOL Group

2019

Consolidated
financial
statements

*Translation of a report originally
issued in Spanish.
In the event of a discrepancy,
the Spanish language version
prevails*



Repsol, S.A. and Investees comprising the Repsol Group
Balance sheet at December 31, 2019 and 2018

ASSETS	Note	€ Million	
		12/31/2019	12/31/2018
Intangible assets	12	4,470	5,096
Property, plant and equipment	13	23,145	25,431
Investment property		66	68
Investments accounted for using the equity method	14	7,237	7,194
Non-current financial assets	9	1,125	1,103
Deferred tax assets	23	4,050	3,891
Other non-current assets	16	1,315	701
NON-CURRENT ASSETS		41,408	43,484
Non-current assets held for sale		5	6
Inventories	17	4,597	4,390
Trade and other receivables	18	5,911	6,105
Other current assets		195	296
Other current financial assets	9	2,800	1,711
Cash and cash equivalents	9	2,979	4,786
CURRENT ASSETS		16,487	17,294
TOTAL ASSETS		57,895	60,778

EQUITY AND LIABILITIES	Note	€ Million	
		12/31/2019	12/31/2018 ⁽¹⁾
Share capital		1,566	1,559
Share premium and reserves		26,731	25,894
Treasury shares and own equity investments		(1,170)	(350)
Net income for the period attributable to the parent		(3,816)	2,341
Other equity instruments		1,024	1,024
SHAREHOLDERS' EQUITY	7	24,335	30,468
Equity instruments with changes through other comprehensive income		24	13
Hedging transactions	10	(109)	(106)
Translation differences		678	253
OTHER CUMULATIVE COMPREHENSIVE INCOME		593	160
NON-CONTROLLING INTERESTS		281	286
EQUITY	7	25,209	30,914
Non-current provisions	15	3,912	3,431
Non-current financial liabilities	8	10,929	10,818
Deferred tax liabilities	23	2,375	2,335
Other non-current liabilities		385	470
NON-CURRENT LIABILITIES		17,601	17,054
Current provisions	15	865	500
Current financial liabilities	8	6,538	4,486
Trade and other payables	19	7,682	7,824
CURRENT LIABILITIES		15,085	12,810
TOTAL EQUITY AND LIABILITIES		57,895	60,778

⁽¹⁾ Includes all modifications necessary in relation to changes in the presentation of lease payables (see Note 3.2.1) and provisions for tax-related administrative and judicial proceedings due to uncertain income tax positions (see Notes 3.2.1 and 23).

Repsol, S.A. and Investees comprising the Repsol Group
Income statement for the years ending December 31, 2019 and 2018

	Note	€ Million	
		2019	2018
Sales		49,006	49,701
Income from services rendered		322	172
Changes in inventories of finished goods and work in progress		11	130
Other operating income		725	1,073
Procurements		(36,803)	(38,056)
Amortization and depreciation of non-current assets		(2,434)	(2,140)
(Provision for)/Reversal of provisions for impairment		(5,322)	(1,066)
Personnel expenses		(1,946)	(1,874)
Transport and freights		(1,314)	(1,114)
Supplies		(888)	(739)
Gains/(Losses) on disposal of assets		147	62
Other operating expenses		(4,755)	(3,696)
OPERATING NET INCOME	20	(3,251)	2,453
Net interest		(243)	(230)
Change in fair value of financial instruments		216	200
Exchange gains/(losses)		(27)	467
Impairment of financial instruments		6	(370)
Other financial income and expenses		(253)	(240)
FINANCIAL RESULT	22	(301)	(173)
NET INCOME FROM INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD	14	351	1,053
NET INCOME BEFORE TAX		(3,201)	3,333
Income tax	23	(588)	(1,386)
NET INCOME FROM CONTINUING OPERATIONS		(3,789)	1,947
NET INCOME FROM CONTINUING OPERATIONS ATTRIBUTABLE TO NON-CONTROLLING INTERESTS		(27)	(18)
NET INCOME FROM CONTINUING OPERATIONS ATTRIBUTABLE TO THE PARENT		(3,816)	1,929
NET INCOME FROM DISCONTINUED OPERATIONS ATTRIBUTABLE TO THE PARENT	24	—	412
TOTAL NET INCOME ATTRIBUTABLE TO THE PARENT		(3,816)	2,341
EARNINGS PER SHARE ATTRIBUTABLE TO THE PARENT	25	Euros / share	
Basic		(2.48)	1.38
Diluted		(2.48)	1.38

Repsol, S.A. and investees comprising the Repsol Group

Statement of recognized profit or loss corresponding to the years ending December 31, 2019 and 2018

	€ Million	
	2019	2018
CONSOLIDATED NET INCOME FOR THE PERIOD ⁽¹⁾	(3,789)	2,359
Due to actuarial gains and losses	(5)	4
investments accounted for using the equity method	(3)	25
Equity instruments with changes through other comprehensive income	14	3
Tax effect	1	4
OTHER COMPREHENSIVE INCOME. ITEMS NOT RECLASSIFIABLE TO NET INCOME	7	36
Cash flow hedging:	1	39
Valuation gains / (losses)	(55)	3
Amounts transferred to the income statement	56	36
Translation differences:	406	332
Valuation gains / (losses)	431	383
Amounts transferred to the income statement	(25)	(51)
Share of investments in joint ventures and associates:	—	181
Valuation gains / (losses)	—	—
Amounts transferred to the income statement	—	181
Tax effect	12	14
OTHER COMPREHENSIVE INCOME. ITEMS RECLASSIFIABLE TO NET INCOME	419	566
TOTAL OTHER COMPREHENSIVE INCOME	426	602
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD	(3,363)	2,961
a) Attributable to the parent	(3,391)	2,940
b) Attributable to non-controlling interests	28	21

⁽¹⁾ Corresponds to the sum of the following consolidated income statement headings: "Net income from continuing operations" and "Net income from discontinued operations attributable to the parent".

Repsol S.A. and Investees comprising the Repsol Group
Statement of changes in equity corresponding to the years ending December 31, 2019 and 2018

€ Million	Equity attributable to the parent and other equity instrument holders							
	Shareholders' equity					Other cumulative comprehensive income	Non-controlling interests	Equity
	Share capital	Share premium and reserves	Treasury shares and own equity investments	Net income for the period attributable to the parent	Other equity instruments			
Closing balance at 12/31/2017	1,556	25,541	(45)	2,121	1,024	(404)	270	30,063
Impact of new standards	—	(351)	—	—	—	(5)	—	(356)
Adjusted opening balance	1,556	25,190	(45)	2,121	1,024	(409)	270	29,707
Total recognized income/(expenses)	—	29	—	2,341	—	570	21	2,961
Transactions with partners or owners								
Share capital increase/(reduction)	72	(72)	—	—	—	—	—	—
Dividends and shareholder remuneration	—	(275)	—	—	—	—	(5)	(280)
Transactions with treasury shares and own equity investments (net)	(69)	(1,072)	(305)	—	—	—	—	(1,446)
Increases/(reductions) due to changes in scope	—	—	—	—	—	—	—	—
Other transactions with partners and owners	—	—	—	—	—	—	—	—
Other equity variations								
Transfers between equity-line items	—	2,121	—	(2,121)	—	—	—	—
Subordinated perpetual obligations	—	(29)	—	—	—	—	—	(29)
Other variations	—	2	—	—	—	(1)	—	1
Closing balance at 12/31/2018	1,559	25,894	(350)	2,341	1,024	160	286	30,914
Impact of new standards (see Note 3.2.1)	—	(162)	—	—	—	—	—	(162)
Adjusted opening balance	1,559	25,732	(350)	2,341	1,024	160	286	30,752
Total recognized income/(expenses)	—	(7)	—	(3,816)	—	432	28	(3,363)
Transactions with partners or owners								
Share capital increase/(reduction)	78	(78)	—	—	—	—	—	—
Dividends and shareholder remuneration	—	(330)	—	—	—	—	(7)	(337)
Transactions with treasury shares and own equity investments (net)	(71)	(932)	(820)	—	—	—	—	(1,823)
Increases/(reductions) due to changes in scope	—	21	—	—	—	4	(25)	—
Other transactions with partners and owners	—	—	—	—	—	—	—	—
Other equity variations								
Transfers between equity-line items	—	2,341	—	(2,341)	—	—	—	—
Subordinated perpetual obligations	—	(29)	—	—	—	—	—	(29)
Other variations	—	13	—	—	—	(3)	(1)	9
Closing balance at 12/31/2019	1,566	26,731	(1,170)	(3,816)	1,024	593	281	25,209

Repsol S.A. and Investees comprising the Repsol Group
Statement of cash flows corresponding to the years ending December 31, 2019 and 2018

	Note	€ Million	
		2019	2018
Income before tax		(3,201)	3,333
Adjustments to income:		8,632	2,360
Amortization and depreciation of non-current assets	12 and 13	2,434	2,140
Other (net)		6,198	220
Changes in working capital		137	(389)
Other cash flows from operating activities:		(719)	(725)
Dividends received		464	472
Income tax refunded/(paid)		(975)	(762)
Other proceeds from/(payments for) operating activities		(208)	(435)
CASH FLOWS FROM OPERATING ACTIVITIES	26	4,849	4,579
Payments for investments:	5, 12 and 13	(6,390)	(5,501)
Group companies and associates		(107)	(807)
Property, plant and equipment, intangible assets and investment property		(3,227)	(2,661)
Other financial assets		(3,056)	(2,033)
Proceeds from divestments:	5	1,895	4,074
Group companies and associates		17	3,372
Property, plant and equipment, intangible assets and investment property		133	119
Other financial assets		1,745	583
Other cash flows		88	68
CASH FLOWS FROM INVESTING ACTIVITIES	26	(4,407)	(1,359)
Proceeds from and (payments for) equity instruments:	7	(1,844)	(1,595)
Acquisition		(1,911)	(1,808)
Disposal		67	213
Proceeds from and (payments for) financial liability instruments:	8	412	(796)
Issue		13,213	18,127
Return and amortization		(12,801)	(18,923)
Payments on shareholder remuneration and other equity instruments	7	(396)	(297)
Other cash flows from financing activities:		(461)	(344)
Interest payments		(467)	(454)
Other proceeds from/(payments for) financing activities		6	110
CASH FLOWS FROM FINANCING ACTIVITIES	26	(2,289)	(3,032)
EXCHANGE RATE FLUCTUATIONS EFFECT		40	(3)
NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS	26	(1,807)	185
CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD		4,786	4,601
CASH AND CASH EQUIVALENTS AT END OF PERIOD:	9	2,979	4,786
Cash and banks		2,370	4,124
Other financial assets		609	662

Repsol S.A. and Investees comprising the Repsol Group
NOTES TO THE 2019 FINANCIAL STATEMENTS

NOTES

GENERAL INFORMATION

(1) ABOUT THIS REPORT	8
(2) ABOUT THE REPSOL GROUP	8
(3) ABOUT THESE FINANCIAL STATEMENTS	11

SEGMENT REPORTING

(4) BUSINESS SEGMENT REPORTING	21
--------------------------------------	----

MAIN ACQUISITIONS AND DIVESTMENTS

(5) MAIN ACQUISITIONS AND DIVESTMENTS	23
---	----

CAPITAL STRUCTURE, DEBT AND FINANCIAL RESOURCES

(6) CAPITAL STRUCTURE	25
(7) EQUITY	25
(8) FINANCIAL RESOURCES	28
(9) FINANCIAL ASSETS	30
(10) DERIVATIVE AND HEDGING TRANSACTIONS	32
(11) FINANCIAL RISKS	35

NON-CURRENT ASSETS AND LIABILITIES

(12) INTANGIBLE ASSETS	39
(13) PROPERTY, PLANT AND EQUIPMENT	41
(14) INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD	43
(15) CURRENT AND NON-CURRENT PROVISIONS	46
(16) OTHER NON-CURRENT ASSETS	48

CURRENT ASSETS AND LIABILITIES

(17) INVENTORIES	49
(18) TRADE AND OTHER RECEIVABLES	49
(19) TRADE AND OTHER PAYABLES	50

INCOME

(20) OPERATING INCOME	51
(21) ASSET IMPAIRMENT	53
(22) FINANCIAL RESULT	58
(23) TAXES	59
(24) NET INCOME FROM DISCONTINUED OPERATIONS	63
(25) EARNINGS PER SHARE	63

CASH FLOWS

(26) CASH FLOWS	64
-----------------------	----

OTHER DISCLOSURES

(27) COMMITMENTS AND GUARANTEES	66
(28) INFORMATION ON RELATED PARTY TRANSACTIONS	67
(29) PERSONNEL OBLIGATIONS	71
(30) REMUNERATION OF THE MEMBERS OF THE BOARD OF DIRECTORS AND EXECUTIVES	69
(31) CLIMATE CHANGE AND ENVIRONMENTAL INFORMATION	75
(32) FURTHER BREAKDOWNS	76
(33) SUBSEQUENT EVENTS	77
(34) EXPLANATION ADDED FOR TRANSLATION TO ENGLISH	78

APPENDIX:⁽¹⁾

APPENDIX I: GROUP'S CORPORATE STRUCTURE

APPENDIX IA: MAIN COMPANIES COMPRISING THE REPSOL GROUP AT DECEMBER 31, 2019	79
APPENDIX IB: MAIN CHANGES IN THE SCOPE OF CONSOLIDATION	87
APPENDIX IC: JOINT OPERATIONS OF THE REPSOL GROUP AT DECEMBER 31, 2019	91
APPENDIX II: SEGMENT REPORTING AND RECONCILIATION WITH EU-IFRS FINANCIAL STATEMENTS	97
APPENDIX III: REGULATORY FRAMEWORK	99

⁽¹⁾ The Appendices form an integral part of the consolidated Financial Statements.

GENERAL INFORMATION

(1) ABOUT THIS REPORT

These Financial Statements of Repsol, S.A. and its investees, comprising the Repsol Group, present fairly the Group's equity and financial position at December 31, 2019, as well as the Group's earnings performance, the changes in the consolidated equity and the consolidated cash flows for the year then ended.

The preparation of the consolidated Financial Statements is the responsibility of the Board of Directors of the Group's parent and makes it necessary to use accounting estimates and judgments when applying the accounting standards. The areas in which most significant judgements and estimates have to be made are detailed in Note 3.

These consolidated Financial Statements have been prepared by the Board of Directors of Repsol, S.A. at its meeting held on February 19, 2020 and they will be submitted, together with the financial statements of its investees, for approval at their respective Annual General Meetings; it is expected that they will be approved without any modifications¹.

The Group's Management Report is published together with the consolidated Financial Statements. In addition, Repsol has published "*Information on oil and gas exploration and production activities*" and the "*Report on payments to governments on oil and gas exploration and production activities*" as supplementary information not reviewed by the external auditor. All these reports are available at www.repsol.com.

(2) ABOUT THE REPSOL GROUP

2.1) About Repsol

Repsol is a group of companies with a presence worldwide (hereinafter "*Repsol*", "*Company*", "*Repsol Group*" or "*Group*") that, with a vision of being a multi-energy efficient, sustainable and competitive company, performs activities in the hydrocarbon sector throughout its entire value chain (exploration, development and production of crude oil and natural gas, refining, production, transportation and sale of a wide range of oil and petrochemical products, oil derivatives and natural gas), as well as activities for the generation and sale of electricity².

2.2) About the parent company

The parent company of the Repsol Group that prepares and files these Financial Statements is Repsol, S.A. It is registered at the Madrid Companies Register in sheet no. M-65289; its tax ID number (C.I.F.) is A-78/374725 and its C.N.A.E. no. is 70.10.

Repsol, S.A. is a private-law entity, incorporated in accordance with Spanish law, which is subject to the Spanish Companies Act (*Ley de Sociedades de Capital*)³, and all other legislation related to listed companies.

Its registered office is located at calle Méndez Álvaro, 44, Madrid, where the Shareholder Information Office is also located, the telephone number of which is 900 100 100. Its website is located at www.repsol.com.

The shares of Repsol, S.A. are represented by book entries and listed on the continuous market of the Spanish stock exchanges (Madrid, Barcelona, Bilbao and Valencia)⁴. The Company also has an ADS (American Depositary Shares) Program, which is quoted on the OTCQX market (a platform in the US over-the-counter markets that differentiates those issuers with better market information policies and solid business activities).

2.3) About the Repsol Group

The Repsol Group contains more than 300 companies incorporated in more than 40 countries (mainly in Spain, Canada, the United States, and the Netherlands) that, from time to time, carry out activities abroad through branches, permanent establishments, etc.

The Group carries out its transactions in various business segments (see Note 4) and its main activities are: i) *Upstream*; exploration and production of crude oil and natural gas reserves, and ii) *Downstream*; refining and petrochemicals, trading and transportation of crude oil and oil products, sale of oil, chemical and LPG products, sale, transportation and regasification of

¹ The 2018 Consolidated Financial Statements were approved at Repsol's Annual General Meeting held on May 31, 2019.

² For further information, see section 2.1 Value chain and business segments of the 2019 Management Report, available at www.repsol.com.

³ Consolidated text approved by Legislative Royal Decree 1/2010, of July 2.

⁴ On January 28, 2019, the shares of Repsol, S.A. were withdrawn from the public offering and listing regime in Argentina.

natural gas and liquefied natural gas (LNG), and generation of electricity and sale of electricity and gas in Spain. The main metrics by segments are summarized as follows:

€Million	Income (from third parties)		Income from operations		Adjusted net income		Capital employed	
	2019	2018	2019	2018	2019	2018	2019	2018 ⁽¹⁾
Upstream	5,270	5,699	1,969	2,514	1,050	1,325	17,205	21,515
Downstream	46,763	47,008	1,928	2,143	1,456	1,583	14,078	11,338
Corporate	—	—	(236)	(261)	(464)	(556)	2,009	1,500
TOTAL	52,033	52,707	3,661	4,396	2,042	2,352	33,292	34,353

Note: Figures calculated in accordance with the Group's reporting model described in Note 4.

⁽¹⁾ Capital employed without considering the impact of IFRS 16 Leases.

The Repsol Group comprises subsidiaries, joint arrangements and associates. The Group's main companies and the summarized corporate organization chart are presented in section 2.6 of the 2019 Management Report. For detailed information, see Appendix IA to these Financial Statements.

In 2019 changes were made to the composition of the Group, mainly due to the acquisition of new businesses related to the energy transition (most notably renewable electricity generation projects in Spain) and the international expansion of the Service Station business in Mexico and the Lubricants business in Singapore. In 2018, the sale of the 20% interest in Naturgy Energy Group, S.A. and the acquisition of Viesgo are noteworthy of mention.

For further information on changes in the Group's composition, see Note 5 and Appendix IA and IB.

2.4) Main new developments in the year⁵

- In the last few months of 2019, Repsol initiated a strategic change with the publication in December of its commitment to gradually reduce its carbon intensity indicator⁶ to become a company with **net zero emissions by 2050**.
- These targets will serve as a basis for the 2020-2025 Strategic Plan, which will be presented to the market and investors in the first half of 2020. The Company is therefore making progress in its commitment to lead the energy transition, in line with the objectives of the Paris Agreement and the United Nations Sustainable Development Goals.
- In line with this new strategic approach and in the context of the new dynamics of the oil and gas markets that have been consolidated over the last year, as well as the new public policies aimed at the decarbonization of the economy and driving the energy transition, the main **assumptions for assessing** both future investments and existing assets have been reviewed. In particular, expectations for crude oil and gas prices have been lowered, long-term estimates regarding the consumption of oil products have been reduced, and the costs of CO₂ emissions have been increased. Although acceptance of these new scenarios has made it possible to optimize sustainability and the value of the businesses in this new environment, it has had an impact of €4,849 million after tax on the measurement of assets for accounting purposes in 2019, mainly in the *Upstream* segment, on gas-producing assets in the US and Canada (see Note 21).
- With regard to the management of the asset portfolio, the *Upstream* segment notably includes the acquisition of the 63% interest in the asset of unconventional production of crude oil, gas and associated liquids at **Eagle Ford** (Texas, United States) from Equinor for \$352 million (see Note 5) in which Repsol now controls 100% and is the operator of the asset.
- In *Downstream*, after completing the acquisition of Viesgo, investments in **renewable electricity generation assets in Spain** totaled €119 million, highlighting in 2019 two wind projects (€87 million) of 335 MW in Aragon and 225 MW in Palencia, and two other solar projects of 204 MW in Cadiz and 127 MW in Ciudad Real.

Accordingly, **the refinery maintenance plan was completed** to minimize the production of fuel oil and maximize the production of products with lower carbon intensity and higher value, as well as to adapt to the new international specifications for low sulfur marine fuel.

In the commercial business, the Company has strengthened its position as a **customer-centered** multi-energy supplier, with a **differentiated service** and a clear commitment to **digitalization**. Repsol Electricity and Gas exceeds 1 million customers

⁵ For a complete description of the main events during the period, see section 1 *2019 Highlights* of the year at the Consolidated Management Report, available at www.repsol.com.

⁶ For additional information regarding the new strategic approach and the risks associated with climate change, see sections 2.4 *Strategy* and 6.1 *Climate change*, respectively, at the Consolidated Management Report.

and the Waylet payment application has exceeded 1.4 million users, who can now pay in the more than 3,500 service stations of the Repsol network and more than 4,600 related retailers.

- **Shareholder remuneration.** Through the "*Repsol Flexible Dividend*" program, Repsol offered shareholders a return in 2019 equal to €0.916/share, under the scrip dividend formula. In addition, a capital reduction was carried out through the redemption of treasury shares, aimed at offsetting the dilutive effect of the bonus share issue formalized in 2019 within the framework of the "*Repsol Flexible Dividend*" program.

In addition, the Board of Directors has agreed to submit a proposal for approval at the next Annual General Meeting to reduce share capital by an amount equal to 5% of share capital at December 31, 2018, independently of any proposal that may be submitted at the Annual General Meeting in the context of the "*Repsol Flexible Dividend*" program (see Note 7).

(3) ABOUT THESE FINANCIAL STATEMENTS

3.1) General principles

The consolidated Financial Statements were prepared based on the accounting records of Repsol, S.A. and its investees. They are presented in accordance with the International Financial Reporting Standards (IFRSs) as issued by the International Accounting Standards Board (IASB), adopted by the European Union (EU) as of December 31, 2019, and other provisions of the applicable regulatory framework.

Repsol prepares its consolidated financial statements including the investments in all its subsidiaries, joint arrangements and associates, whose accounting standards have been unified with those of the parent in order to present consolidated financial statements by applying uniform accounting policies.

The consolidated Financial Statements are presented in millions of euros, which is the functional currency of the parent company and presentation currency of the consolidated financial statements.

3.2) Comparative information

The most notable new developments in the accounting standards applied by the Group as of January 1, 2019⁷ due to their impact on these financial statements, include IFRS 16 *Leases* and IFRIC 23 *Uncertainty over income tax treatments*, as described below.

3.2.1) Application of new accounting standards

IFRS 16 Leases⁸

Application

IFRS 16 Leases introduces changes for the lessee who, at the inception date of a lease, is required to recognize in the balance sheet a liability for lease payments and an asset for the right to use the “underlying asset” over the lease term. In addition, an expense for the financial restatement of the lease liability must be recognized separately from the expense for the amortization of the right-of-use asset.

IFRS 16 has been applied for the first time in the 2019 financial statements.

The first-time application was carried out through a simplified retrospective approach on January 1, 2019, without restating the comparative information in relation to 2018. The impacts of its first-time application have been recognized directly in equity.

The Group has decided to make use of the options envisaged in the standard for lessees, which permits lease liabilities and right-of-use assets corresponding to lease agreements for assets of little value (amount in euros equivalent to USD 5,000) and short-term leases (leases for a period equal to or less than one year) not to be recognized in the balance sheet.

In agreements that contain lease and other components, mainly services, the Repsol Group has separated such components, recognizing solely the lease component pursuant to IFRS 16 and the other component as a performance contract, with the expense recognized on an accrual basis under the terms of the agreement.

A specific review of the inventory of lease agreements classified as operating leases according to the previous standard was carried out, as well as certain service contracts that could be classified as leases according to the new standard. No significant difference has arisen as a result of this analysis.

The Group has calculated the lease liability as the present value of the outstanding payments of the lease agreements in force at the date of first-time application and retrospectively calculated the value of the right-of-use asset, only for those agreements with the greatest quantitative significance, having considered the value of the lease liability as the initial value of the corresponding right-of-use asset for the remaining agreements.

⁷ In addition, the following standards have been applied as of January 1, 2019 without significant impacts for the Group: i) Amendments to IFRS 9 *Prepayment features with negative compensation*; ii) Amendments to IAS 28 *Long-term interests in associates and joint ventures*; iii) Amendments to IAS 19 *Employee benefits: plan amendment, curtailment or settlement*; and vi) Annual improvements to IFRSs, 2015-2017 Cycle.

⁸ Replaces IAS 17 *Leases*, IFRIC 14 *Determination of whether an arrangement contains a lease*, SIC 15 *Operating leases - Incentives*, and SIC 27 *Evaluation of the substance of the transactions with the legal form of a lease*.

The lease term of the agreements was determined as the non-cancellable period of a lease taking into consideration the option to extend or terminate the lease when there is reasonably high probability that this option will be exercised.

With regard to the discount rate used for these calculations, the Group generally used the incremental borrowing rate of the lessee at January 1, 2019, which was determined taking into consideration, among other factors, the term of the agreement, the economic climate of the country and the currency in which it was denominated and, when relevant, the characteristics of the underlying asset. The weighted average discount rate applied to operating lease liabilities recognized at the date on which IFRS 16 was initially applied was 3%.

Lastly, in relation to the recognition of leases in joint operations, which is very common in hydrocarbon exploration and production activities, the Group performed a specific analysis of all its contractual obligations and recognized all those arrangements for which it has a contractual obligation with the lessor in the balance sheet, i.e. all those arrangements that: (i) it has signed in full as operating partner on its own behalf; (ii) it has jointly signed with the other partners in a joint arrangement, in line with its percentage of ownership in the arrangement; or (iii) have been signed by the operating partner on behalf of the consortium (jointly and severally) or the other partners of the joint arrangement, in line with the terms and percentage of ownership of each partner in the arrangement. With regard to the arrangements signed on its behalf by a third party in the position of operating partner in a joint arrangement, the Group will recognize, as its percentage of ownership in the arrangement, those contracts for which it is determined that a sub-lease exists, considering in this assessment, both the repayment obligation to the operating partner of the costs of the head lease arrangement, and the control by the Group of the right to use the asset identified.

Financial impact of first-time application

The first-time application of IFRS 16 has represented an estimated impact of -€83 million after taxes recognized in "Retained earnings and other reserves":

	12/31/2018	Adjustment IFRS 16	01/01/2019
Assets for rights of use of the assets (Note 13)	754	1,153	1,907
Investments accounted for using the equity method	7,194	(50)	7,144
Accounts receivable	—	30	30
Current and non-current financial liabilities ⁽¹⁾	(1,624)	(1,351)	(2,975)
Non-current provisions and other ⁽²⁾	(4,738)	122	(4,616)
Effect on net assets and liabilities		(96)	
Deferred tax assets and liabilities		13	
Effect on equity		(83)	

⁽¹⁾ Includes the finance lease liabilities in accordance with the previous accounting standard, recognized in 2018 under "Other non-current liabilities" and "Trade and other payables" in the balance sheet. In 2019, the Group, as a result of the application of IFRS 16, decided to present its lease payables under "Current financial liabilities" and "Non-current financial liabilities" in the balance sheet.

⁽²⁾ The onerous charge associated with certain operating lease agreements was canceled against the corresponding asset.

The reconciliation between the operating lease commitments at December 31 and the liabilities recognized on January 1, 2019 in accordance with IFRS 16 is as follows:

	€ Million
Operating lease commitments as at December 31, 2018	1,599
Financial discount on future payments	(225)
Short-term and low-value leases	(23)
Operating lease liability recognized as at January 1, 2019	1,351

Other impacts of IFRS 16

The new accounting treatment of leases did not have a significant impact on the Group's net income in 2019. However, other financial aggregates have been affected and, for example, operating income has increased (lower operating expenses) and the financial result has decreased (higher financial expenses). The cash generated has remained unaltered by the application of IFRS 16, but its classification has changed since cash flow from operating activities has increased and cash flow from financing activities has decreased, to the same extent.

In relation to the Alternative Performance Measures used by the Group, the application of IFRS 16 has had several effects: i) EBITDA ("Earnings Before Interest, Tax, Depreciation and Amortization") has increased as it now includes the expense corresponding to the leases as amortization and financial expenses; ii) cash flows from operations have also increased, since

from now the cash outflows for leases are included in cash flows from financing activities; iii) as of January 1, 2019, the calculation of net debt, capital employed and the ROACE (“Return on average capital employed”) now includes lease liabilities (those recognized in accordance with the previous accounting standard and the new lease liabilities recognized due to the application of IFRS 16); and, to make it easier to monitor the current Strategic Plan and the historic performance of return and debt, the Group also presents these magnitudes excluding the effect of the lease liabilities (criteria followed by the Group up until December 31, 2018).

With regard to testing the assets for impairment, the recognition of right-of-use assets made it necessary to assign their carrying amount to different cash-generating units and to exclude the corresponding fixed lease payments from the calculations of value in use, in order to ensure consistency in assessing the recoverability of the assets and calculating their recoverable amount.

IFRIC 23 Uncertainty over income tax

IFRIC 23⁹ clarifies how to apply the recognition and measurement requirements of IAS 12 *Income taxes* in those circumstances where there is uncertainty.

The application of this interpretation has led the Group to reevaluate certain tax liabilities for an additional amount of €79 million. This change is a result of having determined that various uncertain tax treatments, in accordance with the information available and the expectation of resolution of the situation: (i) must be considered jointly instead of individually, and (ii) it is more appropriate to measure the amount of the liability to be recognized in accordance with the expected value instead of the most likely value. This impact was recognized retrospectively, and cumulative as of January 1, 2019, under “Equity - Retained earnings and other reserves” in the balance sheet (see Note 7).

In relation to their presentation, the uncertain tax treatments that result in the recognition of income tax liabilities in accordance with the criteria of IFRIC 23 are recognized under “Deferred tax liabilities and other” (previously recognized under “Non-current provisions” and “Current provisions”) in the balance sheet (see Note 23). The balances relating to 2018 were changed for comparison purposes.

3.2.2) Restatement of earnings per share

In accordance with accounting standards, earnings per share at December 31, 2018, have been restated with respect to the information published in the consolidated financial statements for 2018, as the average number of outstanding shares considered in the calculation should take account of the new number of shares issued after the capital increase carried out as part of the “Repsol Flexible Dividend” shareholder remuneration program described in Note 7.

3.3) New standards issued for mandatory application in future years

The standards and amendments to standards issued by the IASB that will be mandatory in future reporting periods are listed below:

Standards and amendments to standards	Date of first application
Adopted by the European Union	
Amendments to IFRS 9, IAS 39 and IFRS 7: <i>Interest rate benchmark reform</i> ⁽¹⁾	January 1, 2020
Amendments to IAS 1 and IAS 8: <i>Definition of material</i> ⁽²⁾	January 1, 2020
Amendments to <i>References to the Conceptual Framework for Financial Reporting</i> ⁽²⁾	January 1, 2020
Pending adoption by the European Union	
Amendments to IFRS 3 <i>Definition of a business</i> ⁽²⁾	January 1, 2020
IFRS 17 <i>Insurance contracts</i> ⁽³⁾	January 1, 2021
Amendments to IAS 1 <i>Classification of liabilities as current and non-current</i>	January 1, 2022
Amendments to IFRS 10 and IAS 28 <i>Sale or contribution of assets between an investor and its associate or joint venture</i> ⁽⁴⁾	Undefined

⁽¹⁾ The Group has adopted these changes early so as to avoid the possible discontinuation of certain interest rate cash flow hedging relationships, which are detailed in Note 10. There are no additional significant impacts from their application.

⁽²⁾ The Group has not identified any significant impact from the initial application of these regulatory changes, given their nature and prospective application, beyond any changes that may be made, where appropriate, to the information disclosed following the change in the concept of materiality.

⁽³⁾ The Group is assessing the impact that the application of this standard could have on its consolidated financial statements, but no significant effects have been identified to date.

⁽⁴⁾ The application of these amendments to IFRS 10 and IAS 28, which were originally issued in September 2014, was deferred indefinitely in December 2015, until such time as the IASB completes the project relating to the equity method, which, in turn, has been delayed until the post-implementation phase of IFRS 10, IFRS 11 and IFRS 12.

⁹ International Financial Reporting Interpretations Committee No. 23

3.4) Accounting policies

3.4.1) General accounting policies

The Financial Statements have been prepared in accordance with EU-IFRSs at December 31, 2019 and other provisions of the applicable regulatory framework. This section includes clarifications or specificities that improve their understanding.

Repsol prepares its consolidated financial statements including the investments in all its subsidiaries, joint arrangements and associates¹⁰.

The items included in these consolidated Financial Statements relating to the Group companies are measured using their functional currency, which is the currency of the main economic environment in which they operate; when this differs from the presentation currency, the conversion is carried out as stated below: i) the assets and liabilities in each of the balance sheets presented are translated applying the closing exchange rate on the balance sheet date, ii) income and expense items are translated applying the average cumulative exchange rate for the financial year in which the transactions were performed (however, the transaction-date exchange rate is used to translate significant transactions), and iii) any exchange differences arising as a result of the foregoing are recognized under "*Equity - Translation differences*".

Transactions in currencies other than the functional currency of a Group company are deemed to be 'foreign currency transactions' and are translated to the functional currency by applying the exchange rates prevailing at the date of the transaction. At each year end, the foreign currency monetary items on the balance sheet are measured applying the exchange rate prevailing at that date and the exchange rate differences arising from such measurement are recognized under "*Financial result - Exchange gains/(losses)*".

The exchange rates against the euro of the main currencies used by the Group companies at December 31, 2019 and 2018 were as follows:

	December 31, 2019		December 31, 2018	
	Closing rate	Accumulated average rate	Closing rate	Accumulated average rate
US dollar	1.12	1.12	1.15	1.18

3.4.2) Specific accounting policies

In order to facilitate the reading and understanding of the disclosures in the notes to these financial statements, those accounting policies that are considered relevant or represent an accounting option for the Group are described: principles of consolidation (Note 3), calculation of the recoverable amount of the assets (Note 3), business combinations (Note 5), accounting hedges (Note 10), oil product exchange and revenue recognition (Note 20) and CO₂ emission rights (Note 31).

Accounting policies relating to hydrocarbon exploration and production activities

Repsol recognizes hydrocarbon exploration and production operations using accounting policies mostly based on the "successful efforts" method. Under this method, the various costs incurred are treated as follows for accounting purposes:

The costs of acquiring **exploration permits and the geological and geophysical (G&G) costs** incurred during the exploration phase are capitalized under "*Exploration permits*" in intangible assets. They are not amortized during the exploration and evaluation phase and they are tested for impairment at least once a year and, in any case, when there is an indication that they may have become impaired, in accordance with the indicators of IFRS 6 *Exploration for and evaluation of mineral resources*. Once the exploration and evaluation phase is over, if no reserves are found, the amounts capitalized are recognized as an expense in the income statement.

¹⁰ Classified based on the control exercised over them:

- i) subsidiaries: those over which Repsol exercises direct or indirect control and are fully consolidated;
- ii) joint ventures: those in which strategic operational and financial decisions require the unanimous consent of the parties sharing control (joint control) and are classified as i) joint operations arranged through a Joint Operating Agreement (JOA) or similar vehicle and whose interests are held by the Group through its ownership interest in subsidiaries that are fully consolidated, or ii) joint ventures (JVs) that are accounted for using the equity method.

In the Oil & Gas industry, hydrocarbon exploration and production activities are usually carried out through collaboration or association with companies that qualify as joint agreements that are set up through JOAs that are included in the financial statements of the partners on the basis of the interest in the assets, liabilities, income and expenses arising from the agreement or as joint ventures that are included in the financial statements of the partners using the equity method; and

- iii) associates: interests over which it has significant influence, which do not require consent from Repsol in making strategic operating and financial decisions but over which it has the power to participate, and that are accounted for using the equity method.

The costs of acquiring **new interests, including those acquired in business combinations, in areas with proved and unproved reserves and resources** (including licenses, resource-related costs, legal costs, etc.) are capitalized as incurred under "*Investments in areas with reserves*" in property, plant and equipment.

Exploratory drilling costs are recognized as assets under "*Investments in exploration*" until it is determined whether reserves justifying their commercial development have been found. If no reserves are found, the capitalized drilling costs are recognized in the income statement. In the event that reserves are found, but remain under evaluation for their classification as proved, their recognition depends on the following:

- a. If additional investments are required prior to the start of production, they continue to be capitalized as long as the following conditions are met: (i) the amount of reserves found justifies the completion of a productive well if the required investment is made, and; (ii) satisfactory progress has been made in the evaluation of reserves and the operational viability of the project. If any of these conditions fails to be met, they are treated as impaired, and are expensed in the income statement.
- b. In all other cases, if there is no commitment to carry out significant activities to evaluate reserves or develop the project within a reasonable period after well drilling has been completed, or if activities have been halted, they are recognized as an expense in the income statement.
- c. The costs incurred in exploratory drilling work that have yielded a commercially exploitable reserve are reclassified to "*Investments in areas with reserves*" under property, plant and equipment at their carrying amount.

Exploration costs other than G&G costs ("Exploration rights and geological and geophysical costs"), excluding the costs of drilling exploration wells and exploration licenses, are recognized as an expense in the income statement when incurred.

Development expenditure incurred in lifting proved reserves and in processing and storing oil and gas are recognized as assets under "*Investments in areas with reserves*" in property, plant and equipment.

Future field abandonment and dismantling costs are estimated on a field-by-field basis, and are capitalized at their present value when they are initially recognized under "*Investments in areas with reserves*" against the line item for dismantling provisions (see Note 15).

The investments capitalized as described above are **depreciated** according to the unit of production method and in accordance with the following criteria:

- a. Investments in the acquisition of proved and probable reserves and common facilities are depreciated over the estimated commercial life of the field on the basis of the production for the financial year as a proportion of those reserves.
- b. The costs incurred in surveys for the development and extraction of hydrocarbon reserves are depreciated over the estimated commercial life of the oil field on the basis of the relationship between the production of the period and the total of the most probable proved reserves of the field.
- c. Investments made in fields that are in the exploration or development phase are not depreciated. These investments are tested for impairment at least once a year and whenever indications of impairment are detected.

The changes in **estimated reserves** are considered on a prospective basis in calculating depreciation.

Accounting policies relating to Downstream and Corporate:

Non-current assets are recognized at acquisition cost and depreciated on a straight-line basis over their estimated useful lives once they are in optimum conditions for use. The estimated useful lives of the main assets of *Downstream* and Corporate are detailed below:

Estimated useful life	Years
Buildings and other constructions	20-50
Machinery and plant:	
Machinery, plant and tools	8-25
Specialized complex installations (Refining and Chemical industrial complexes):	
- Units	8-25
- Storage tanks	20-40
- Cabling and networks	12-25
Specialized complex installations (electricity and gas):	
- Electricity generation plants	18-40
- Gas and electricity infrastructure and distribution	12-40
Transport elements	5-20
Other property, plant and equipment:	
- Furniture and fixtures	9-15

In relation to the connection rights of service stations, their ownership is conditional on the life of the contracts that give rise to them, which are amortized on a straight-line basis over the term of each contract (between 25 and 30 years).

3.5) Accounting estimates and judgements

The preparation of financial statements in accordance with generally accepted accounting principles makes it necessary to make assumptions and estimates that affect the valuation of the amounts of the assets and liabilities recognized, the presentation of contingent assets and liabilities at year end and the income and expenses recognized during the year. The actual results could differ significantly depending on the estimates made.

The accounting policies and areas that require the highest degree of judgement and estimates in the preparation of these financial statements are: (i) crude oil and natural gas reserves; (ii) calculation of the recoverable amount of assets (see Notes 12,13,14 and 21); (iii) business combinations (see Note 5), (iv) provisions for litigation, dismantling and other contingencies (see Note 15); (v) income tax, tax credits and deferred tax assets (see Note 23); (vi) market value of derivative financial instruments (see Note 10); (vii) calculation of expected loss on financial instruments; and (viii) assessment of investments in Venezuela (see Notes 14 and 21).

Crude oil and gas reserves

The estimate of oil and gas reserves¹¹ and resources is a key component of the Company's decision-making process. Oil and gas reserve volumes are used to calculate depreciation and amortization charges, applying the unit-of-production ratio method, and to test these *Upstream* assets for impairment (see "*Recoverable amount of assets*" in this Note). Changes in volumes of reserves and resources could have a significant impact on the Group's results.

To estimate oil and gas reserves and resources, Repsol uses the criteria established by the "*SPE/WPC/AAPG/SPEE/SEG/SPWLA/EAGE Petroleum Resources Management System*", commonly referred to by its acronym SPE-PRMS (SPE standing for Society of Petroleum Engineers).

Recoverable amount of assets

Impairment test

In order to ascertain whether its assets have become impaired, the Group compares their carrying amount with their recoverable amount at least annually and whenever there are indications that an asset might have become impaired ("*impairment test*").

¹¹ The classification of reserves can be consulted below:

Proved reserves: Proved reserves (scenario 1P) are those quantities of crude oil, natural gas and natural gas liquids that, with the information available to date, are estimated to be recoverable with reasonable certainty. There should be at least a 90% probability that the amounts recovered will equal or exceed the 1P estimate.

Probable reserves: Probable reserves are those additional reserves, which together with proved reserves make up scenario 2P. There should be at least a 50% probability that the amounts recovered will equal or exceed the 2P estimate. This scenario reflects the best estimate of the reserves.

Developed reserves: Proved or probable quantities expected to be recovered from existing wells and facilities.

Contingent resources: Those quantities of oil that are estimated, at a given date, to be potentially recoverable from accumulations known from the application of development projects, but which are not currently considered commercially recoverable due to one or more contingencies.

Repsol applies "*SPE/WPC/AAPG/SPEE/SEG/SPWLA/EAGE Petroleum Resources Management System*", where these definitions can be consulted.

Independent engineering firms periodically audit registered volumes (at least 95% of the reserves are audited externally in a three-year cycle). For information on the Group's reserves, see "*Information on hydrocarbon exploration and production activities*" available at www.repsol.com.

If the recoverable amount of an asset is estimated to be less than its net book value, the carrying amount of the asset is reduced to its recoverable amount, and an impairment loss is recognized in the income statement.

After an impairment loss has been recognized, amortization charges are calculated prospectively on the basis of the reduced carrying amount of the impaired asset.

When there are new events, or changes in existing circumstances, which prove that an impairment loss recognized on a prior date could have disappeared or decreased, there is a new estimate of the recoverable amount of the corresponding asset, to determine whether the impairment losses recognized in previous periods should be reversed. An impairment loss of goodwill cannot be reversed in subsequent years.

If a previously recognized impairment loss is reversed, the carrying amount of the asset is increased to the revised estimate of its recoverable amount, so that this new value does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset in prior years.

Cash-generating units

For the “*impairment test*”, assets are grouped into cash-generating units (CGUs) if, when individually considered, they do not generate cash inflows that are independent of the cash inflows from other assets of the CGU. The grouping of assets into the various CGUs implies the use of professional judgements and the determination, among other criteria, of the business units and geographical areas in which the Group operates. Against this backdrop, in the *Upstream* segment, each CGU corresponds to one of the various contractual exploration areas widely known as “*blocks*”; exceptionally, if the cash flows generated by more than one block are mutually interdependent, these blocks will be grouped into a single CGU. In the *Downstream* segment, the CGUs correspond to the business activities (mainly Refining, Chemicals, Commercial businesses -Mobility, LPG, Lubricants, Asphalt and Specialisms-, Wholesaler and Gas Trading, and electricity generation and sale) and geographical areas. In 2019, there were no significant changes to the composition of the UGEs.

Goodwill acquired on a business combination is allocated among the CGUs or groups of cash-generating units (CGUs) that benefit from the synergies of the business combination, up to the limit of the business segment.

Calculating the recoverable amount

The recoverable amount is the higher of fair value less costs of sale and value in use.

The methodology used by the Group to estimate the recoverable amount of assets is, in general, the value in use calculated by discounting to present value the future cash flows after tax expected to derive from the operation of these assets.

The cash flow projections are based on the best available estimates of the income, expenses and investments of the CGUs using sector forecasts, prior results and the outlook for the performance of the business and development of the market:

- Macroeconomic variables are those used in the preparation of budgets and strategic plans that define a macroeconomic framework for the countries in which the Group operates and that consider variables such as inflation, GDP, exchange rate, etc. The aforementioned macroeconomic forecasts are prepared on the basis of the content of internal reports that use in-house estimates, based on updated external information of relevance (forecasts prepared by consultants and specialized entities).
- The oil and natural gas price trend estimates used for the impairment test are prepared on the basis of available macroeconomic, financial and market information and the forecasts provided by analysts. Key market variables and their foreseeable evolution are analyzed for this calculation, including their own forecasts of the balance of supply and demand of energy and prices. The longer-term vision is also explained by the monitoring of other variables such as: the decline; the current CAPEX; the financial sustainability of the companies in the sector to certain price environments; and the dynamics in OPEC countries in terms of fiscal sustainability. Econometric models of prices are made with all these elements, which are compared with both public and private external forecasts.
 - i. To estimate near-term price trends, forecast reports produced by a selection of investment banks, macro consultants and international benchmark agencies are taken into account.¹²
 - ii. The sources that present a sufficiently detailed analysis of long-term forecasts are the benchmark agencies

¹² The macro consultants used are Platts Analytics, IHS and Wood Mackenzie. The reference agencies are the International Energy Agency (IEA) and the US Energy Information Administration (EIA).

(International Energy Agency (IEA) and Energy Information Administration (EIA) in US)

Note 21.1 specifies the assumptions regarding future prices used to perform the annual impairment test, which have led to valuation adjustments to significant assets.

Discount rates

Future cash flows are discounted to their present value at a specific rate for each CGU, determined based on the currency of its cash flows and the risks associated with them. The discount rate used by Repsol is the weighted average cost of capital employed after tax for each country and business. This rate seeks to reflect current market assessments with regard to the time value of money and the specific risks of the asset. Therefore, the discount rate used takes into account the risk-free rate, the country risk, the currency in which the cash flows are generated and the market, credit and business risk¹³. For the sake of consistency, estimated future cash flows do not reflect the risks that have already been considered in the discount rate or vice versa. The discount rate used considers the average leverage of the sector over the last five years, as a reasonable approximation of the optimal capital structure, using comparable oil companies as a reference. Note 21.1 shows the discount rates used in the 2019 impairment test.

Hydrocarbon exploration and production activities

Valuations of Exploration and Production assets (*Upstream*) use cash flow projections for a period that covers the economically productive useful lives of the oil and gas fields, limited by the contractual expiration of the operating permits, agreements or contracts. The general principles applied to determine the variables that most affect the cash flows of this business are described below:

- Hydrocarbon sale prices. The international benchmark prices used by the Group are: Brent, WTI (West Texas Intermediate) and HH (Henry Hub). In countries where international list prices do not reflect local market circumstances, the prices modeled factor in local market prices.
- Reserves, resources and production profiles. Production profiles are estimated on the basis of output levels at existing wells and the development plans in place for each productive field (see previous heading "*Crude oil and gas reserves*").
- Operating expenses and investments. These are calculated for the first year on the basis of the Group's annual budget and thereafter in accordance with the asset development programs, applying an escalation factor for operating expenses and investments (basically of 1-1.5%).

Downstream assets

In the *Downstream* segment, the cash flows of the various businesses are estimated on the basis of the outlook for their key variables (demand for oil products, unit contribution margins, fixed costs and investment flows required to maintain the level of activity), in accordance with the expectations reflected in the annual budget and in the strategic plans for each business, in line with the new scenario of energy transition and decarbonization of the economy. However, cash inflows and outflows corresponding to future restructuring exercises or investments to enhance the assets' performance are not considered. The cash flow projection period considered for this is generally five years; cash flows after year five are extrapolated without factoring in any further growth. Specifically:

- In the Refining and Mobility businesses in Spain, long-term projections were made up to 2040 (in line with the time frame used by the IEA in its estimated demand for oil products).
- The cash flows for the Wholesale and Trading Gas businesses were estimated in accordance with the following key assumptions:

¹³ The main components of the discount rate are detailed as follows:

- The risk-free interest rate for cash flows in US dollars relate to that of the US 10-year sovereign bond and for cash flows in euros to that of the German 10-year sovereign bond;
- With regard to country risk, the following are used: (i) market quotations, such as the spread of sovereign bonds in euros or US dollars over debt issued by Germany (euros) or the US (USD), respectively, (ii) country risk estimates contained in the EMBI (Emerging Markets Bond Index) published by JP Morgan, and (iii) country risk estimates published by three external providers - Country Risk Rating (IHS Global Insight), International Country Risk Guide (PRS Group) and Business Monitor (Fitch Group) - all adjusted for business-specific risks;
- A different credit risk premium is used depending on the currency (EUR and USD); and
- Business risk premiums are specifically calculated on the basis of 5-year historical series from comparable companies, for the Upstream, Refining & Marketing, Chemical, LPG and Gas & Power businesses.

Compared to 2018, there were no significant changes in country risk or business risk in 2019.

- i. Gas and LNG prices. The international benchmark prices used are: HH, Algonquin, JKM (Japan Korea Marker) and NBP (National Balancing Point), adjusted in accordance with references in the corresponding market if the prices do not reflect market circumstances.
- ii. Gas and LNG sales volumes and margins. The volumes used for cash flow forecasting purposes are estimated on the basis of the contracts in force at year-end and activity estimates, all in accordance with the annual budget and strategic plan. Margins factor in historical data, the price forecasts detailed in the previous point and the outlook for margins going forward.

Associates and joint ventures

The recoverability of the Group's investments in associates or joint ventures is assessed by verifying the impairment losses for the entire carrying amount of the investment, including any goodwill that may be implicit in the investment, by comparing its recoverable amount with its carrying amount (see Note 13). The recoverable amount of an investment in an associate or joint venture is assessed individually, unless the associate or joint venture does not generate cash inflows from continuing use that are largely independent of those from the Group's other assets or cash-generating unit.

Sensitivities

In view of the foregoing, changes in the key assumptions used in calculating the recoverable amount of the assets may have a significant effect on the Group's results (see Note 21.2).

Business combinations

The Group's business combinations are accounted for using the acquisition method (see Note 5) and require judgments and estimates when assigning their fair values to the assets acquired and liabilities assumed in the transaction and assigning the purchase price to these fair values. Note 5 specifies the main business combinations for the year.

Provisions for litigation, dismantling and other contingencies

The final cost of settling complaints, claims and litigation may vary from the estimates previously made due to differences in the identification of dates, interpretation of rules, technical opinions and assessments of the amount of damages and liabilities.

Repsol uses judgements and estimates to recognize provisions for the cost of dismantling its hydrocarbon production operations. These calculations are complex on account of the need to recognize the present value of the estimated future costs and to adjust this figure in subsequent years in order to reflect the passage of time and changes in the estimates due to changes in the underlying assumptions used as a result of technological advances and regulatory changes, economic, political and environmental security factors, as well as changes in the initially-established schedules or other terms. The dismantling provisions are updated regularly to reflect trends in estimated costs and the discount rates. These discount rates take into account the risk-free rate, by term and currency, country risk and a spread according to debt structure and the cash flow projection period. Specifically, the weighted average rate set by the Group was 4.0%

Additionally, Repsol makes judgements and estimates in recognizing costs and establishing provisions for environmental clean-up and remediation costs, which are based on current information regarding costs and expected plans for remediation based on applicable laws and regulations, the identification and assessment of the effects on the environment, as well as sanitation technologies.

Therefore, any change in the factors or circumstances related to provisions of this nature, as well as changes in laws and regulations could, as a consequence, have a significant effect on the provisions recognized for these costs (see Note 15).

Calculation of income tax, tax credits and deferred tax assets

The appropriate assessment of the income tax expense is dependent on several factors, including estimates of the timing and realization of deferred tax assets and the timing of income tax payments. Collections and payments may be materially different from these estimates as a result of changes in the expected performance of the Company's businesses or in tax regulations or their interpretation, as well as unforeseen future transactions that impact the Company's tax balances (see Note 23).

Market value of derivative financial instruments

The valuation techniques used for the derivative financial instruments classified in levels 2 and 3¹⁴ of the hierarchy are based, in accordance with accounting standards, on an income approach, which consists of discounting known or estimated future flows using discount curves constructed on the basis of reference market interest rates (in the case of derivatives, they are estimated using implied market forward curves), including adjustments for credit risk based on the life of the instruments. In the case of options, price-fixing models based on Black & Scholes formulas are used.

The main variables for the valuation of financial instruments vary depending on the type of instrument valued, but are mainly the following: exchange rates (spot and forward), interest rate curves, counterparty risk curves, equity prices and volatilities of all the aforementioned factors. In all cases, market data are obtained from recognized information agencies or correspond to quotations from official bodies.

Calculation of expected loss on financial instruments

Repsol makes judgements and estimates for the recognition of impairment of its financial instruments. The valuation models used by the Group are widely accepted in the markets. However, the complexity of their calculation lies in determining variables such as the probability of default, exposure and loss given default (see Note 11).

Any change in the variables or circumstances related to these provisions could have a significant effect on the provisions.

Evaluation of investments in Venezuela

Repsol has a presence in Venezuela through its shareholdings in mixed oil companies and gas licensees. The current situation of crisis in the country generates increased uncertainty regarding business performance. To assess the recoverability of the investments in this country, which include both the investment in the share capital of the companies and the financing granted through loans and trade receivables, it is necessary to use certain hypotheses and assumptions (such as asset development plans, compliance with the agreements signed and the changes in the environment) which involves judgements and estimates that may vary from those initially made (see Notes 11, 14 and 21.3).

¹⁴ Financial assets recognized at fair value are classified, in accordance with their calculation methodology, into three levels:

- Level 1: Valuations based on a quoted price in an active market for an identical instrument and relate to derivatives held for trading and investments funds.
- Level 2: Valuations based on a quoted price in an active market for similar financial assets or based on other valuation techniques that rely on observable market inputs.
- Level 3: Valuations based on inputs that are not directly observable in the market.

SEGMENT REPORTING

(4) BUSINESS SEGMENT REPORTING¹⁵

4.1) Definition of segments

The segment reporting disclosed by the Group in this section is presented in accordance with the disclosure requirements of IFRS 8 *Operating segments*.

The definition of the Group's business segments is based on the different activities performed and from which the Group earns revenue or incurs expenses, as well as on the organizational structure approved by the Board of Directors for business management. Using these segments as a reference point, Repsol's management team (Executive Committee) analyzes the main operating and financial aggregates in order to make decisions about resource allocation and to assess how the Company is performing.

At December 31, 2019 and 2018, the operating segments of the Group are:

- *Upstream*, corresponding to the exploration and production of crude oil and natural gas reserves.
- *Downstream*, corresponding mainly to the following activities: (i) refining, (ii) petrochemistry, (iii) trading and transportation of crude oil and oil products, (iv) sale of oil, chemical and LPG products, (v) sale, transport and regasification of natural gas and liquefied natural gas (LNG), and (vi) generation of electricity and sale of electricity and gas in Spain.

Lastly, *Corporate and others* includes activities not attributable to the aforementioned business segments, and specifically, corporate expenses, financial result and inter-segment consolidation adjustments.

The Group has not aggregated any operating segments for presentation purposes.

4.2) Presentation model of the results by segments

In presenting the results and other financial aggregates of its operating segments, Repsol includes the results of its joint ventures¹⁶, in accordance with the Group's interest, considering its operational and economic metrics in the same manner and with the same level of detail as for fully consolidated companies. Thus, the Group considers that the nature of its businesses and the way in which results are analyzed for decision-making purposes is adequately reflected.

In addition, the Group, considering its business reality and in order to make its disclosures more comparable with those in the sector, uses a measure of segment profit known as adjusted net income, which corresponds to net income from continuing operations at replacement cost ("*Current Cost of Supply*" or CCS), net of taxes and non-controlling interests, without including certain income and expenses ("*Special Items*"). The financial result is assigned to the adjusted net income of *Corporate and others*.

The Current Cost of Supply (CCS), commonly used in this industry to present the results of *Downstream* businesses that must work with huge inventories subject to continual price fluctuations, is not an accepted European accounting regulation, yet does enable the comparability with other sector companies as well as the monitoring of businesses independently of the impact of price variations on their inventories. Under Income at CCS, the cost of volumes sold during the reporting period is calculated using the procurement and production costs incurred during that same period. Therefore, adjusted net income does not include the so-called Equity effect. This Inventory effect is presented separately, net of tax and non-controlling interests, and corresponds to the difference between Income at CCS and that obtained using the weighted average cost approach, which is the method used by the Group to determine its earnings in accordance with European accounting regulations.

Furthermore, adjusted net income does not include the so-called special items, i.e. certain material items whose separate presentation is considered appropriate in order to facilitate analysis of the ordinary business performance. This heading includes gains/losses on divestments, restructuring charges, asset impairment losses, and provisions for contingencies and charges and other relevant income/expenses that do not form part of the ordinary management of the businesses. These results are presented separately, net of the tax effect and non-controlling interests.

¹⁵ Some of metrics presented in this Note are classified as Alternative Performance Metrics (APMs) in accordance with ESMA guidelines (for further information, see Appendix I of the Consolidated Management Report or www.repsol.com.) All of the figures shown throughout this Note have been reconciled with the EU-IFRS financial statements in Appendix II.

¹⁶ In the segment reporting model, joint ventures are consolidated proportionally in accordance with the Group's ownership interest. See Note 14 and Appendix I, where the Group's main joint ventures are identified.

4.3) Financial information by business segment

Results

SEGMENTS	€ Million	
	2019	2018
Upstream	1,050	1,325
Downstream	1,456	1,583
Corporate and other	(464)	(556)
ADJUSTED NET INCOME	2,042	2,352
Inventory effect	(35)	(68)
Special items	(5,823)	57
NET INCOME	(3,816)	2,341

The main financial information by business segment is included in this note. Additional information can be found in the Management Report attached to these financial statements, which is published together with these financial statements, and is easily accessible at www.repsol.com.

Cash flows and capital employed

€ Million	Cash flow from operations		Free cash flow		Capital employed	
	2019	2018	2019	2018	2019	2018 ⁽¹⁾
Upstream	3,140	3,341	765	1,453	17,205	21,515
Downstream	2,777	1,854	1,419	105	14,078	11,338
Corporate	(80)	233	(124)	3,498	2,009	1,500
TOTAL	5,837	5,428	2,060	5,056	33,292	34,353

⁽¹⁾ Capital employed without considering the impact of IFRS 16 Leases.

Disclosures by geographical area

The breakdown, by geographical area and segment, of the main aggregates at December 31, 2019 and 2018, for which geographic segmentation is material, is provided below:

	€ Million					
	Results from operations		Adjusted net income		Operating investments ⁽¹⁾	
	2019	2018	2019	2018	2019	2018
Upstream	1,969	2,514	1,050	1,325	2,429	1,973
Europe, Africa and Brazil	1,326	1,614	653	768	526	442
Latin America-Caribbean	522	726	387	501	341	314
North America	96	273	76	212	1,025	659
Asia and Russia	371	465	182	264	164	166
Exploration and other	(346)	(564)	(248)	(420)	373	392
Downstream	1,928	2,143	1,456	1,583	1,376	1,831
Europe	1,822	2,039	1,398	1,500	1,226	1,578
Rest of the world	106	104	58	83	150	253
Corporate and other	(236)	(261)	(464)	(556)	56	70
TOTAL	3,661	4,396	2,042	2,352	3,861	3,874

⁽¹⁾ Includes investments accrued during the period.

For more segment reporting and the reconciliation of these figures with the EU-IFRS Financial Statements, see Appendix II.

MAIN ACQUISITIONS AND DIVESTMENTS

(5) MAIN ACQUISITIONS AND DIVESTMENTS

Accounting policies: Business combinations

Business combinations in which the Group acquires control of one or more businesses through the merger or spin-off of several companies or through the acquisition of all the assets and liabilities of a company or of a party constituting one or more businesses, are recognized using the acquisition method in accordance with the provisions of IFRS 3 *Business Combinations*. The acquisition method involves, except for the recognition and measurement exceptions set out in IFRS 3, recognizing the identifiable assets acquired and liabilities assumed at their fair value at the acquisition date, provided that this value can be measured reliably. Acquisition-related costs are recognized as expenses in the income statement.

The difference between the cost of the business combination and the fair value of the identifiable assets acquired less the liabilities assumed is recognized as goodwill if it is positive, or as income in the income statement if it is negative.

When a business combination is achieved in stages, the acquisition-date carrying amount of the previously held equity interest in the acquiree is remeasured at its acquisition-date fair value, with any resulting gain or loss recognized in profit or loss.

5.1) Acquisition of businesses from Viesgo

On November 2, 2018, Viesgo's unregulated low-emission electricity generation business and its regulated and unregulated gas and electricity retailers were acquired for €733 million.

The accounting at December 31, 2019 for this business combination was definitive, once the 12-month period from the acquisition ended, as provided for in IFRS 3 *Business Combinations*. During this period, the measurement of the assets and liabilities acquired was reviewed, without any significant changes in the amount of goodwill initially recognized:

€ Million	Carrying amount of Repsol	Carrying amount of the acquired company
Intangible assets	118	60
Property, plant and equipment	361	391
Deferred tax assets	257	257
Other non-current assets	20	20
Other current assets	138	138
Cash and cash equivalents	26	26
Total Assets	920	892
Current and non-current provisions	(66)	(68)
Deferred tax liabilities	(12)	(5)
Other current liabilities	(158)	(158)
Total Liabilities	(236)	(231)
NET ASSETS ACQUIRED	684	661
COST OF ACQUISITION	733	
GOODWILL	49	

5.2) Acquisition of 63% of the Eagle Ford block

In November 2019, the 63% interest of its partner, Equinor, in the assets of Eagle Ford was acquired for \$352 million. This unconventional asset, located in southern Texas (United States), produces crude oil and gas with associated liquids. With this transaction, Repsol now controls 100% of the asset, operating the asset and incorporating approximately 280 net square kilometers of the mining concession, and 34,000 barrels of oil equivalent daily.

The purchase price was provisionally allocated to the assets acquired (mainly property, plant and equipment) and the liabilities assumed based on their estimated fair values at the date of acquisition¹⁷. No significant differences were identified between the acquisition price and the estimated fair value and, therefore, no goodwill was recognized.

5.3) Sale of the interest in Naturgy Energy Group

On May 18, 2018, Repsol, S.A. completed the sale of its interest in Naturgy Energy Group, S.A. (200,858,658 shares representing 20.072% of the share capital) for a total price of €3,816 million, equal to €19 per share, all in accordance with the terms established in the sale and purchase agreement entered into with Rioja Bidco Shareholdings, S.L.U. on February 22, 2018.

The gain generated by the sale amounted to €344 million net of tax, recognized under “*Net income from discontinued operations*” in the income statement (see Note 24), which also includes the profit generated by this interest up until February 22, 2018, amounting to €68 million.

¹⁷ The fair value of the assets (property, plant and equipment) was calculated using an income approach, i.e. discounted cash flows by considering unobservable market variables consistent with those described in Note 21.

CAPITAL STRUCTURE, DEBT AND FINANCIAL RESOURCES

(6) FINANCIAL STRUCTURE

Repsol, as an essential part of its strategy, has committed to a policy of financial prudence. The target financial structure is defined by this commitment of solvency and the aim to maximize shareholder returns, by optimizing the cost of capital.

The determination of the target financial structure takes into account the leverage ratio, defined as the relationship between net debt¹⁸ (including, where appropriate, lease liabilities) and capital employed¹⁹. Both metrics are calculated, for these purposes, in accordance with the Group's reporting mModel described in Note 4 and the reconciliation of these figures to those established in EU-IFRSs and used for the preparation of these consolidated financial statements can be found in the Management Report (www.repsol.com). The calculations of these ratios at December 31, 2019 and 2018, are as follows:

€ Million	With leases	Without leases	
	2019	2019	2018
Equity	25,209	25,336	30,914
Non-current financial liabilities	10,929	8,220	9,392
Current financial liabilities	6,538	6,114	4,289
Non-current financial assets ⁽¹⁾	(974)	(953)	(974)
Other current financial assets	(2,800)	(2,792)	(1,711)
Cash and cash equivalents	(2,979)	(2,979)	(4,786)
Financial instruments from interest rate derivatives and others (see Note 10)	(48)	(48)	(48)
Net debt from joint ventures	(2,583)	(3,342)	(2,723)
Net financial debt ⁽²⁾	8,083	4,220	3,439
Capital employed ⁽²⁾	33,292	29,556	34,353
Leverage ratio	24.3%	14.3%	10.0%

⁽¹⁾ Corresponds to "Non-current financial assets" in the balance sheet without including equity instruments.

⁽²⁾ Alternative Performance Measures. For further information, see Appendix I of the consolidated Management Report.

(7) EQUITY

	€ Million	
	2019	2018
Shareholders' equity:	24,335	30,468
Share capital	1,566	1,559
Share premium and Reserves:	26,731	25,894
Share premium	6,278	6,428
Legal reserve ⁽¹⁾	312	299
Retained earnings and other reserves ⁽²⁾	20,248	19,342
Dividends and remuneration on account	(107)	(175)
Treasury shares and own equity investments	(1,170)	(350)
Net income for the period attributable to the parent	(3,816)	2,341
Other equity instruments	1,024	1,024
Other cumulative comprehensive income	593	160
Non-controlling interests	281	286
TOTAL EQUITY	25,209	30,914

⁽¹⁾ Under the Spanish Companies Act, 10% of profit for each year of the parent company must be transferred to the legal reserve until the balance of this reserve reaches at least 20% of share capital. The legal reserve can be used to increase capital provided that the remaining reserve balance does not fall below 10% of the increased share capital amount. Otherwise, until the legal reserve exceeds 20% of share capital, it can only be used to offset losses, provided that sufficient other reserves are not available for this purpose.

⁽²⁾ "Other reserves" includes the impact of first-time application of IFRS 16 and IFRIC 23 in 2019 (see Note 3.2.1) and the impact of first-time application of IFRS 9 and IFRS 15 in 2018.

7.1) Share capital

The subscribed share capital at December 31, 2019 and 2018 registered with the Companies Register was represented by 1,527,396,053 fully subscribed and paid up shares of €1 par value each, in book entry form, and all listed on the Spanish stock exchanges. The Company participates in an ADS (American Depositary Share) program in the United States, whose shares are traded on the OTCQX market.

¹⁸ The formula considers net and not gross debt to factor in the effect of financial investments.

¹⁹ Corresponds to the sum of net financial debt and equity.

Following the bonus share issue concluded in January 2020 (see Note 7.3) the share capital of Repsol, S.A. is currently represented by 1,566,043,878 shares, each with a par value of €1. Under accounting regulations, because the above-mentioned capital increase was registered with the Companies Register before the Board of Directors authorized the financial statements for issue, this bonus share issue has been recognized in the Group's financial statements at December 31, 2019.²⁰

According to the latest information available at the date of authorization of the accompanying Consolidated Financial Statements for issue, the significant shareholders are:

Significant shareholders	% of voting rights attributed to shares		% of voting rights through financial instruments	% of total voting rights
	Direct	Indirect		
Sacyr, S.A. ⁽¹⁾	—	7.835	—	7.835
BlackRock, Inc. ⁽²⁾	—	4.762	0.236	4.998
Norges Bank	2.905	—	0.165	3.070

⁽¹⁾ Sacyr, S.A. holds its interest through Sacyr Investments II, S.A., Sacyr Investments S.A. and Sacyr Securities, S.A.

⁽²⁾ BlackRock, Inc. holds its interest through a number of controlled entities. The information relating to BlackRock, Inc. is based on the statement submitted by this company to the CNMV on December 10, 2019, indicating that share capital amounted to 1,527,396,053 shares.

At December 31, 2019 the following Group companies' shares were publicly listed:

Company	Traded	Listed	Stock exchanges ⁽¹⁾	Closing	Quarter average	Currency
Repsol, S.A.	1,527,396,053	100%	Spanish stock exchanges (Madrid, Barcelona, Bilbao, Valencia) OTCQX	13.93 15.68	14.51 15.99	Euros Dollars
Refinería La Pampilla, S.A.	8,319,175,713	100%	Lima stock exchange	0.123	0.101	soles

⁽¹⁾ Exchanges or markets for which the Group has specifically applied for admission to trading. Other exchanges, markets or multilateral trading platforms on which the shares may be traded without having been specifically requested by the Group are not included.

7.2) Treasury shares and own equity investments

The main transactions undertaken by the Repsol Group involving treasury shares²¹ were as follows:

€ Million	2019			2018		
	No. of shares	Amount	% capital	No. of shares	Amount	% capital
Opening balance	24,157,554	350	1.55%	3,028,924	45	0.19%
Market purchases ⁽¹⁾	176,384,235	2,561	11.26%	149,753,457	2,343	9.61%
Market sales ⁽¹⁾	(48,948,699)	(717)	3.13%	(60,081,841)	(913)	3.85%
Capital redemption ⁽²⁾	(71,394,987)	(1,024)	4.56%	(68,777,683)	(1,125)	4.41%
Repsol Flexible Dividend ⁽³⁾	570,802	—	0.04%	234,697	—	—%
Balance at year end⁽⁴⁾	80,768,905	1,170	5.16%	24,157,554	350	1.55%

⁽¹⁾ In 2019 "Market purchases" included purchases made under the Share Repurchase Program for their redemption (see next section), which began on August 30 and ended on November 5, through which 70,368,868 shares have been acquired. Also in 2019 and 2018 "Market purchases" and "Market sales" included the shares acquired and delivered within the framework of the Share Acquisition Plan and Share Purchase Plans for the beneficiaries of the multi-year variable remuneration programs (696,565 shares were delivered in 2019 in accordance with the provisions of each of the plans (see Note 29.4) and other transactions within the framework of the discretionary treasury share transactions described in the Repsol Group's Internal Code of Conduct in the securities market area.

⁽²⁾ Includes 1,026,119 treasury shares acquired before March 27, 2019 (date of the call notice for the 2019 Annual General Meeting).

⁽³⁾ New shares received in the share capital increases carried out within the framework of the "Repsol Flexible Dividend" program corresponding to treasury shares.

⁽⁴⁾ At December 31, 2019, includes derivatives arranged by Repsol, S.A. with financial institutions for a notional total of 70 million shares.

²⁰ At December 31, 2019, a capital reduction was recognized under "Dividends and remuneration on account" in the balance sheet, as well as a payment obligation under "Trade and other payables", to the shareholders who had accepted the irrevocable commitment to purchase the bonus share issue closed in January 2020, corresponding to the sale of rights to Repsol for an amount of €107 million.

²¹ The shareholders at the Annual General Meeting held on March 28, 2014 and May 11, 2018, authorized the Board of Directors to carry out the derivative acquisition of Repsol shares, directly or through subsidiaries, up to a maximum number of shares such that the sum of those already held by Repsol and any of its subsidiaries does not exceed 10% of the Company's share capital, insofar as the price or value of the consideration delivered is not less than the par value of the shares or more than their quoted price on the stock exchange. The current authorization (conferred by the shareholders at the Annual General Meeting of May 11, 2018) was granted for a period of five years from the date of the Annual General Meeting, and rendered void the authorization granted at the Annual General Meeting held on March 28, 2014, in relation to any part thereof that had not been used.

7.3) Dividends and shareholder remuneration

In 2019 and 2018, the Company's shareholders were also remunerated by means of the "Repsol Flexible Dividend" program, the figures of which are included in the following chart:

	No. of bonus issue rights sold to Repsol	Purchase commitment price (€/right)	Disbursement in cash (€ Million)	New shares issued	Remuneration in shares (€ Million)
December 2017/January 2018	393,708,447	0.388	153	29,068,912	440
June/July 2018	206,366,731	0.485	100	39,708,771	655
December 2018/January 2019	425,542,521	0.411	175	31,481,529	453
June/July 2019 ⁽¹⁾	441,300,729	0.505	223	39,913,458	564

⁽¹⁾ To replace what would have been the final dividend for 2018.

In November 2019, a capital reduction was carried out through the redemption of €71 million treasury shares²² (representing approximately 4.56% of Repsol's share capital at December 31), approved by the shareholders at the Annual General Meeting on May 31, 2019, aimed at offsetting the dilutive effect of the capital increases through the bonus share issue formalized in 2019 within the framework of the "Repsol Flexible Dividend" program. The acquisition cost of the shares redeemed amounted to €1,024 million.

In addition, in January 2020, under the "Repsol Flexible Dividend" program, replacing what would have been the interim dividend from 2019, Repsol paid out €107 million in cash (€0.424 per right before withholdings) to those shareholders opting to sell their bonus share rights back to the Company, and delivered 38,647,825 shares, worth €541 million, to those opting to take their dividend in the form of new shares from the Parent.

At the date of authorization for issue of these consolidated Financial Statements, the Company's Board of Directors plans to propose at the next Annual General Meeting to continue the "Repsol Flexible Dividend" program, through a bonus share issue, on the dates on which the final dividend has traditionally been paid and the corresponding capital reduction through the redemption of treasury shares to offset the dilutive effect of these capital increases. The Board also agreed to submit for approval at the next Annual General Meeting a proposal to reduce capital by an amount equal to 5% of share capital at December 31, 2018, through the redemption of treasury shares. This last proposal for a capital reduction is independent of any proposal that may be submitted at the next Annual General Meeting in the context of shareholder remuneration through the "Repsol Flexible Dividend" program.

7.4) Other equity instruments

On March 25, 2015, Repsol International Finance, B.V. (hereinafter, "RIF") issued a perpetual subordinated bond guaranteed by Repsol, S.A., with a value of €1,000 million, with no defined maturity date, and redeemable at the request of the issuer from year six or under certain circumstances stipulated in the bond terms and conditions.

This bond was placed with qualified investors and listed on the Luxembourg Stock Market, accruing a fixed annual coupon of 3.875% payable to the bondholders annually from the issuance date until March 25, 2021, and, thereafter, a fixed annual coupon equal to the 6-year swap rate applicable plus a spread.

The issuer can defer the coupon payments without triggering an event of default. Coupons so deferred will be cumulative and must be paid in certain cases described in the related terms and conditions of the issue (for further information, see the informational prospectus on the issue available at www.repsol.com).

This bond was recognized under "Other equity instruments", included under equity in the balance sheet, considering that it does not meet the accounting conditions required to be treated as a financial liability²³. The financial expense, net of taxes, associated with the coupon on the subordinated bond has been recognized under "Retained earnings and other reserves" amounting to €29 million.

²² The capital reduction was carried out through the redemption of existing treasury shares as of the date of the Board of Directors meeting held on March 27, 2019 and the shares acquired through the share repurchase program completed on November 5, 2019.

²³ This bond does not involve a contractual obligation to make payment in cash or other financial assets or an obligation to exchange financial assets or liabilities.

7.5) Non-controlling interests

The equity attributable to non-controlling interests at December 31, 2019 and 2018 relates basically to the following companies:

	€ Million	
	2019	2018
Petronor, S.A.	187	173
Refinería La Pampilla, S.A.	48	66
Repsol Comercial de Productos Petrolíferos, S.A.	33	32
Other companies	13	15
TOTAL	281	286

In 2019 Refinería La Pampilla, S.A. completed a capital increase amounting to \$201 million, of which 99.8389% was subscribed by the Group. As a result of this capital increase, Repsol's ownership interest in this company increased by 10% to 92.42%.

(8) FINANCIAL RESOURCES

8.1) Financial liabilities

The breakdown of financial liabilities included in the balance sheet headings can be found below:

	€ Million	
	2019	2018
Non-current financial liabilities:		
Non-current financial liabilities ⁽¹⁾	10,929	10,818
Non-current trade derivatives ⁽²⁾	11	18
Current financial liabilities:		
Current financial liabilities ⁽¹⁾	6,538	4,486
Current trade derivatives ⁽³⁾	350	250
TOTAL	17,828	15,572

⁽¹⁾ The change is mainly due to the application of IFRS 16 and to the commitments acquired to purchase treasury shares through derivative instruments described in the previous section, which have been partially offset by the cancellation of a bond at maturity and the reclassification between both headings of bonds maturing within a period of no more than 12 months.

⁽²⁾ Recognized under "Other non-current liabilities" on the balance sheet.

⁽³⁾ Recognized under "Trade and other payables" on the balance sheet.

The breakdown of these financial liabilities at December 31, 2019 and 2018, is provided below:

€ Million	December 31, 2019 and 2018							
	At fair value through profit or loss		At amortized cost		Total		Fair value	
	2019	2018	2019	2018	2019	2018	2019	2018
Bonds and obligations	—	—	4,199	5,243	4,199	5,243	4,551	5,493
Loans ⁽¹⁾	—	—	2,946	2,789	2,946	2,789	2,946	2,789
Lease liabilities	—	—	2,709	1,427	2,709	1,427	n/a	n/a
Bank borrowings	—	—	917	1,208	917	1,208	934	1,161
Derivatives ⁽²⁾	82	74	—	—	82	74	82	74
Other financial liabilities	—	—	88	95	88	95	88	96
Non-current	82	74	10,859	10,762	10,941	10,836	8,601	9,613
Bonds and obligations	—	—	3,721	2,855	3,721	2,855	3,748	2,862
Loans	—	—	970	660	970	660	970	660
Lease liabilities	—	—	424	197	424	197	n/a	n/a
Bank borrowings	—	—	1,328	704	1,328	704	1,328	704
Derivatives ⁽²⁾	397	300	—	—	397	300	397	300
Other financial liabilities	—	—	48	20	48	20	48	20
Current	397	300	6,491	4,436	6,888	4,736	6,491	4,546
TOTAL ^{(2) (3)}	479	374	17,350	15,198	17,829	15,572	15,092	14,159

⁽¹⁾ Includes mainly the loan granted by Repsol Sinopec Brasil, S.A. (see Note 8.2), the interest rate of which is renewed on an annual basis.

⁽²⁾ In 2019 it includes non-current and current hedging derivatives amounting to €73 million and €24 million, respectively (€56 million and €1 million in 2018, respectively). For further information, see Note 10.

⁽³⁾ In relation to liquidity risk, the distribution of funding by maturity at December 31, 2019 and 2018 is provided in Note 11.

The breakdown of average financial balances outstanding and cost by instrument is as follows:

€Million	2019		2018	
	Average volume	Average cost	Average volume	Average cost
Bonds and obligations	7,709	2.29%	8,598	2.59%
Other financial liabilities	2,521	2.46%	2,037	2.99%
Bank borrowings	3,684	3.28%	3,016	2.98%
TOTAL	13,914	2.58%	13,651	2.74%

8.2) Loans

This includes loans granted to Group companies that are not eliminated in the consolidation process. At December 31, 2019 and 2018, there were loans amounting to €3,915 million and €3,449 million, respectively, worth particular note is the loan granted by Repsol Sinopec Brasil S.A. via its subsidiary Repsol Sinopec Brasil B.V. (see Note 14) to its shareholders in proportion to their respective shareholdings, which at December 31, 2019 and 2018 showed a balance for the Group of €2,946 million and €2,788 million, respectively.

8.3) Lease liabilities

The breakdown of the liabilities recognized²⁴ for lease payables at December 31, 2019 is as follows:

	€ Million					Total
	2020	2021	2022	2023	2024 and sub. years ⁽¹⁾	
Lease payments	424	282	250	238	1,939	3,133

¹⁾ 12% of the portfolio is for lease agreements with a maturity of more than 15 years.

8.4) Bank borrowings

This heading reflects the loans granted to the Group companies, mainly in Spain and Peru, by several banks in order to fund their projects and operations. It also includes drawdowns under short-term credit facilities extended by banks.

8.5) Bonds and obligations

Key issues, repurchases and redemptions carried out in 2019²⁵

- In February 2019 the bond issued by Repsol International Finance B.V. (RIF) in January 2012 as part of the European Medium Term Notes (EMTN) Program was repaid upon maturity for a nominal amount of €1,000 million, with a fixed annual coupon of 4.875%.
- In July 2019, a bond issued by RIF in July 2016 for a nominal amount of €100 million, with a fixed annual coupon of 0.125%, was redeemed at maturity as part of the EMTN Program.
- In August 2019, RIF issued bonds underwritten by Repsol, S.A., as part of the EMTN Program, for an amount of €750 million, with a fixed annual coupon of 0.25% and maturing in August 2027.

²⁴ The liabilities recognized do not include: (i) variable lease payments, which are not significant with respect to fixed payments. (ii) the options for expanding the current portfolio of contracts for 2020-2076, the estimated future undiscounted payments of which would amount to €199 million (this does not include the optional extensions of the contracts with Emera Brunswick Pipeline and Maritimes & North East Pipeline described in Note 13 due to the low probability of execution), the most significant being the five-year extension of the lease agreement for a ship amounting to €115 million (with two further similar extensions); and (iii) the signed leases that have not yet begun, with fixed future payments amounting to €20 million in 2020 and €90 million in 2021 and subsequent years.

²⁵ Main issues, repurchases or redemptions in 2018: (i) in January a bond issued by ROGCI (nominal amount of \$251 million and an annual fixed coupon of 3.75%) was redeemed early, (ii) in February a bond issued by RIF (nominal amount of €750 million and an annual fixed coupon of 4.375%) was canceled at maturity, (iii) in July a bond issued by RIF (nominal amount of €600 million and an annual coupon tied to 3-month Euribor plus a spread of 70 basis points) was canceled at maturity.

The outstanding balance of the bonds and obligations at December 31, 2019 is as follows:

ISIN	Issuer	Date of issue	Currency	Nominal amount (millions)	Average rate %	Maturity	Listed ⁽⁵⁾
US87425EAE32 ⁽³⁾	Repsol Oil & Gas Canada Inc.	Oct-97	Dollar	50	7.250%	Oct-27	—
US87425EAH62 ⁽³⁾	Repsol Oil & Gas Canada Inc.	May-05	Dollar	88	5.750%	May-35	—
US87425EAJ29 ⁽³⁾	Repsol Oil & Gas Canada Inc.	Jan-06	Dollar	102	5.850%	Feb-37	—
US87425EAK91 ⁽³⁾	Repsol Oil & Gas Canada Inc.	Nov-06	Dollar	115	6.250%	Feb-38	—
US87425EAN31 ⁽³⁾	Repsol Oil & Gas Canada Inc.	May-12	Dollar	57	5.500%	May-42	—
XS0933604943 ⁽¹⁾	Repsol International Finance, B.V.	May-13	Euro	1,200	2.625%	May-20	LuxSE
XS0975256685 ⁽¹⁾	Repsol International Finance, B.V.	Oct-13	Euro	1,000	3.625%	Oct-21	LuxSE
XS1148073205 ⁽¹⁾	Repsol International Finance, B.V.	Dec-14	Euro	500	2.250%	Dec-26	LuxSE
XS1207058733 ⁽²⁾	Repsol International Finance, B.V.	Mar-15	Euro	1,000	4.500% ⁽⁴⁾	Mar-75	LuxSE
XS1334225361 ⁽¹⁾	Repsol International Finance, B.V.	Dec-15	Euro	600	2.125%	Dec-20	LuxSE
XS1352121724 ⁽¹⁾	Repsol International Finance, B.V.	Jan-16	Euro	100	5.375%	Jan-31	LuxSE
XS1613140489 ⁽¹⁾	Repsol International Finance, B.V.	May-17	Euro	500	0.500%	May-22	LuxSE
XS2035620710 ⁽¹⁾	Repsol International Finance, B.V.	Aug-19	Euro	750	0.250%	Aug-27	LuxSE

Note: Does not include the subordinated perpetual bond issued by RIF on March 25, 2015 in the amount of €1,000 million, which qualifies as an equity instrument (see Note 7.4).

⁽¹⁾ Issues made under the EMTN Program and guaranteed by Repsol, S.A.

⁽²⁾ Subordinated bond issued by Repsol International Finance B.V. and guaranteed by Repsol, S.A.

⁽³⁾ Repsol Oil & Gas Canada, Inc. issues guaranteed by Repsol, S.A.

⁽⁴⁾ Coupon scheduled for reset on March 25, 2025 and March 25, 2045.

⁽⁵⁾ LuxSE (Luxembourg Stock Exchange). Multilateral trading systems or other trading centers or non-official OTC markets are not considered.

RIF also runs a Euro Commercial Paper (ECP) Program, underwritten by Repsol, S.A., with a limit up to €2,000 million. Under this program, several issues and cancellations took place over the course of the period, with a nominal amount of €1,845 million at December 31, 2019 (€1,635 million at December 31, 2018).

Financial conditions and debt obligations

In general, the financial debt agreements include the early termination clauses customary in agreements of this nature.

The ordinary bonds issued by RIF and guaranteed by Repsol, S.A., with an aggregate face value at year-end of €4,650 million, contain certain early termination clauses (including cross-acceleration or cross-default, applicable to the issuer and the guarantor) and negative pledge covenants in relation to future bond issues. In the event of failure to comply with any of these covenants, the trustee, at its sole discretion or at the behest of the holders of at least one-fifth of the bonds or on the basis of an extraordinary bondholder resolution, is entitled to declare the call of the bonds immediately. In addition, the holders of the bonds issued since 2013 can elect to have their bonds called in the event of a change of control at Repsol or if, as a result of such change of control, Repsol's credit ratings are downgraded to below investment grade status.

Additionally, the subordinated bond issue of €1,000 million on March 25, 2015 by RIF and guaranteed by Repsol, S.A. do not have early redemption covenants other than in the event of dissolution or liquidation. The same conditions apply to the perpetual subordinated bond of €1,000 million described in Note 7.4²⁶.

At the date of authorization for issue of these Consolidated Financial Statements, the Repsol Group was not in breach of any of its financial obligations or of any other obligation that could trigger the early repayment of any of its financial commitments.

At December 31, 2019 and 2018 there are no amounts secured by the Group companies in issuances, repurchases or redemptions made by associates, joint arrangements or companies that are not part of the Group.

8.6) Fair value

The classification of the financial liabilities recognized at fair value, by fair value calculation method, is as follows:

€ Million	Level 1		Level 2		Level 3		Total	
	2019	2018	2019	2018	2019	2018	2019	2018
At fair value ⁽¹⁾	319	223	160	151	—	—	479	374
TOTAL	319	223	160	151	—	—	479	374

⁽¹⁾ Includes level 1 and level 2 hedging derivatives amounting to €97 million and €57 million, respectively.

See Note 3 for classification and valuation techniques for financial instruments.

²⁶ This bond does not include a contractual obligation to deliver cash or another financial asset or an obligation to exchange financial assets or liabilities.

(9) FINANCIAL ASSETS

The breakdown of the current and non-current financial assets included under the headings of the balance sheet is as follows:

	€ Million	
	2019	2018
Non-current assets		
Non-current financial assets	1,125	1,103
Non-current trade derivatives ⁽¹⁾	9	33
Current assets		
Other current financial assets	2,800	1,711
Current trade derivatives ⁽²⁾	168	241
Cash and cash equivalents ⁽³⁾	2,979	4,786
TOTAL	7,081	7,874

⁽¹⁾ Recognized under "Other non-current assets" on the balance sheet.

⁽²⁾ Recognized under "Other receivables" on the balance sheet.

⁽³⁾ See the statement of cash flows.

The breakdown, by type of asset, of financial assets included in the balance sheet can be found below:

€ Million	December 31, 2019 and 2018							
	At fair value through profit or loss		At fair value through other comprehensive income		At amortized cost ⁽³⁾		Total	
	2019	2018	2019	2018	2019	2018	2019	2018
Equity instruments ⁽²⁾	29	24	122	105	—	—	151	129
Derivatives ⁽⁴⁾	9	33	—	—	—	—	9	33
Loans	—	—	—	—	759	921	759	921
Time deposits	—	—	—	—	150	—	150	—
Others	43	53	—	—	22	—	65	53
Non-current	81	110	122	105	931	921	1,134	1,136
Derivatives ⁽⁴⁾	238	308	40	10	—	—	278	318
Loans	—	—	—	—	203	174	203	174
Time deposits	—	—	—	—	2,481	1,455	2,481	1,455
Cash and cash equivalents	8	9	—	—	2,971	4,777	2,979	4,786
Others	—	3	—	—	6	2	6	5
Current	246	320	40	10	5,661	6,408	5,947	6,738
TOTAL ⁽¹⁾	327	430	162	115	6,592	7,329	7,081	7,874

⁽¹⁾ Does not include "Other non-current assets" and "Trade and other receivables" in the balance sheet, which at December 31, 2019 amounted to €1,306 million for non-current and €5,743 million for current, while at December 31, 2018 these headings amounted to €668 million for non-current and €5,864 million for current, respectively.

⁽²⁾ This heading includes non-controlling financial investments in certain companies over which the Group does not have management influence.

⁽³⁾ The items which do not accrue explicit interest are recognized at their nominal value whenever the effect of not discounting the related cash flows is not significant.

⁽⁴⁾ Includes current cash flow hedging derivatives (through other comprehensive income) amounting to €40 million (€10 million in 2018), and non-current fair value derivatives amounting to €2 million.

9.1) Loans

In 2019 and 2018, current and non-current loans include those loans granted mainly to companies accounted for using the equity method, which are not eliminated in the consolidation process, amounting to €962 million and €1,095 million. These included financing to joint ventures in Venezuela (see Notes 14 and 22), the balance of which at December 31, 2019 and 2018 amounted to €426 million and €518 million, respectively.

The average accrued return on these financial assets²⁷ amounts to an average interest rate of 4.3% and 5.07% in 2019 and 2018, respectively, and their maturity is as follows:

²⁷ Also includes time deposits amounting to €150 million.

	€ Million	
	2019	2018
2020	—	195
2021	139	142
2022	67	60
2023	77	54
Subsequent years	476	470
TOTAL	759	921

9.2) Cash and cash equivalents

Cash and cash equivalents are as follows:

	€ Million	
	2019	2018
Cash equivalents ⁽¹⁾	609	662
Cash on hand and at banks	2,370	4,124
TOTAL	2,979	4,786

⁽¹⁾ They primarily correspond to liquid financial assets, deposits or liquid financial investments needed to meet payment obligations in the short term that can be converted into a known amount of cash within a period usually shorter than three months and that are subject to an insignificant risk of changes in value.

9.3) Fair value

The classification of the financial assets recognized at fair value (FV), by fair value calculation method, is as follows:

€ Million	Level 1		Level 2		Level 3		Total	
	2019	2018	2019	2018	2019	2018	2019	2018
	At FV through profit or loss	121	204	175	202	29	24	325
At FV through other comprehensive income	2	—	40	10	122	105	164	115
TOTAL	123	204	215	212	151	129	489	545

See Note 3 for classification and valuation techniques for financial instruments.

(10) DERIVATIVE AND HEDGING TRANSACTIONS

10.1) Accounting hedges

The Group contracts derivatives to hedge exposure to changes in cash flows, most notably in 2019 and 2018:

- A cash flow hedge²⁸ in dollars in the form of interest rate swaps associated with the funding for the investment in the Canaport LNG project (Canada), for a notional amount of €289 million, maturing at long term, and with a negative fair value of €72 million at December 31, 2019. Under this hedge, the Group paid an average fixed interest rate of 5.279% and receives 3-month Libor. The fair value recognized in equity, yet to be recognized in profit or loss, amounts to -€53 million after tax at December 31, 2019 (-€40 million after tax at December 31, 2018). The impact before tax recognized in 2019 and 2018 in the income statement amounted to €9 million.
- Cash flow hedges in the form of interest rate swaps²⁶ arranged in 2014 for a notional amount of €1,500 million to hedge future bond issues in late 2014 and early 2015. Under these hedges, the Group paid a weighted average interest rate of 1.762% and receives 6-month Euribor. The fair value recognized in equity, yet to be recognized in profit or loss, amounts to -€63 million after tax at December 31, 2019 (-€73 million after tax at December 31, 2018). The impact before tax recognized in 2019 in the income statement amounted to €14 million (€13 million in 2018).
- Cash flow hedges to mitigate the risk of fluctuations in electricity purchase prices maturing between 2020 and 2023. At December 31, 2019, its notional amount was €226 million and its negative fair value was €24 million.
- Cash flow hedges to mitigate the risk of fluctuations in gas prices maturing in 2020. At December 31, 2019, its notional amount was -€267 million and its positive fair value was €40 million (€10 million at December 31, 2018).

²⁸ Hedges tied to [LIBOR/EURIBOR]. In accordance with the "Amendments to IFRS 9 and IAS 39: Interest rate benchmark reform" applied early (see Note 3.3), the cash flows of the hedging instrument and the hedged item will not be altered as a result of this reform.

In addition, the Group maintains instruments to hedge its exposure to fluctuations in foreign exchange rates relating to the ownership interest in the net assets of foreign operations. Of note are the financial instruments designated as hedges of net investments with respect to certain dollar assets in the *Upstream* segment, the notional amount of which at December 31 amounted to \$3,836 million (€3,416 million). In 2018, the notional amount was \$3,108 million (€2,714 million).

The instruments designated as accounting hedges²⁹ at December 31, 2019 and 2018 are detailed below:

€ Million	Nominal amounts hedging instruments ⁽¹⁾		Carrying amount of the hedging instrument								Total FV		Changes in FV	
	2019	2018	Non-current assets		Current assets		Non-current liabilities		Current liabilities		2019	2018	2019	2018
Cash flows	248	189	—	—	40	10	(72)	(56)	(24)	(1)	(56)	(47)	1	23
Interest rate	289	298	—	—	—	—	(71)	(56)	(1)	(1)	(72)	(57)	(15)	13
Product price	(41)	(109)	—	—	40	10	(1)	—	(23)	—	16	10	16	10
Fair value	(22)	—	2	—	—	—	(1)	—	—	—	1	—	1	—
Product price	(22)	—	2	—	—	—	(1)	—	—	—	1	—	1	—
Net investment	(3,416)	(2,714)	—	—	—	—	(2,857)	(2,714)	(559)	—	(3,416)	(2,714)	(59)	(126)
Exchange rate	(3,416)	(2,714)	—	—	—	—	(2,857)	(2,714)	(559)	—	(3,416)	(2,714)	(59)	(126)
TOTAL ⁽²⁾⁽³⁾	(3,190)	(2,525)	2	—	40	10	(2,930)	(2,770)	(583)	(1)	(3,471)	(2,761)	(57)	(103)

(1) Instruments in US dollars translated into euros at year-end rates.

(2) Fair value measurement methods are described in Note 9.3.

(3) The information relating to hedged items is broken down as follows:

€ Million	Changes in FV	
	2019	2018
Cash flow hedges: interest rate	15	(13)
Cash flow hedges: product price	(16)	(10)
Fair value hedges: product price	(1)	—
Hedges of net investments: exchange rate	59	126

The changes in reserves relating to hedging instruments at December 31, 2019 and 2018 recognized under "Other cumulative comprehensive income" in the balance sheet are detailed below:

€ Million	2019		2018	
	Cash flow hedges	Hedges of net investments ⁽¹⁾	Cash flow hedges	Hedges of net investments
Opening balance at December 31	(106)	(41)	(163)	54
Gains/(Losses) for measurement allocated to other comprehensive income	(55)	(59)	3	(126)
Amounts transferred to the income statement	56	—	36	—
Translation differences	(1)	—	(3)	—
Share of investments in joint ventures and associates	—	—	11	—
Effective tax	(3)	16	10	31
Closing balance at December 31	(109)	(84)	(106)	(41)

(1) The cumulative amount of translation differences from discontinued hedges amounts to -€77 million.

²⁹ In cash flow hedges, the effective portion of changes in fair value is recognized under "Hedging transactions" in equity and the gain or loss relating to the ineffective portion (absolute excess of the cumulative change in fair value of the hedging instrument over the hedged item) is recognized in the income statement. Accumulated amounts in equity are transferred to the income statement in periods in which the hedged items affect the income statement or, in the case of a hedge of a transaction that results in the recognition of a non-financial asset or liability, are included in the cost of the asset or liability when the asset or liability is recognized in the balance sheet. Hedges of net investments are accounted for in the same way as cash flow hedges, although changes in the valuation of these transactions are recognized in equity under "Translation differences" until the hedged foreign transaction is disposed of, at which time they are transferred to the income statement.

The cumulative balances by type of hedging instrument at December 31, 2019 and 2018 are:

€ Million	Cash flow hedging reserve and translation reserve	
	2019	2018
Cash flow hedges	(109)	(106)
- Interest rate	(163)	(162)
- Product price	11	10
- Share of investments in joint ventures and associates	—	—
- Tax effect	43	46
Hedges of net investments	(84)	(41)
- Exchange rate	(139)	(80)
- Tax effect	55	39

10.2) Other derivative transactions

Furthermore, Repsol has arranged a series of derivatives to manage its exposure to foreign exchange rate and price risk of crude oil and oil products (including CO₂) that are not recognized as accounting hedges under IFRS 9. These derivatives include currency forward contracts that mature in less than a year, as part of the global strategy to manage the exposure to exchange-rate risk. Additionally, the Group has entered into futures and swap contracts to hedge the product risk that derives from future physical transactions such as the sale and/or purchase of crude oil and other oil products.

The breakdown of these derivative instruments is as follows:

€ Million	Non-current assets		Current assets		Non-current liabilities		Current liabilities		Total fair value	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Exchange rate	—	—	110	77	—	—	(46)	(49)	64	28
Product price	7	33	128	231	(9)	(18)	(327)	(250)	(201)	(4)
TOTAL ⁽¹⁾	7	33	238	308	(9)	(18)	(373)	(299)	(137)	24

⁽¹⁾ In 2019, this heading includes derivatives whose measurement in respect of interest rates amounts to €24 million. (2018: €9 million).

The breakdown of these derivatives at December 31, 2019 and 2018 is provided below:

€ Million	Maturity fair values											
	2019						2018					
	2020	2021	2022	2023	Sig.	Total	2019	2020	2021	2022	Sig.	Total
Exchange rate	64	—	—	—	—	64	28	—	—	—	—	28
Product price	(198)	(1)	4	(6)	—	(201)	(19)	10	—	1	4	(4)
Purchase futures	17	—	(10)	—	—	7	(455)	1	(1)	—	—	(455)
Sale futures ⁽¹⁾	(230)	—	13	(6)	—	(223)	365	(13)	—	—	2	354
Options	1	—	—	—	—	1	—	—	—	—	—	—
Swaps	(32)	(1)	1	—	—	(32)	54	6	1	1	2	64
Others ⁽²⁾	46	—	—	—	—	46	17	16	—	—	—	33
TOTAL	(134)	(1)	4	(6)	—	(137)	9	10	—	1	4	24

⁽¹⁾ The following is a breakdown of the physical units and the fair value of the product price derivatives associated with sales contracts:

Sale futures	2019				2018			
	Physical units		FV (€Million)		Physical units		FV (€Million)	
EUAs CO ₂ (Thousand tons)	24,749		(179)		35,829		(326)	
Crude oil (Thousand barrels)	17,924		(51)		43,300		395	
Gas (TBTU)	290		7		34		79	
Products	—		—		—		206	
Total			(223)				354	

⁽²⁾ Long-term oil and gas sale and purchase firm commitments are analyzed with the aim of determining whether they correspond to the supply or marketing needs of the normal business activities of the Group or whether, on the contrary, these should be considered as a derivative instrument and be recognized in accordance with the criteria set forth in IFRS 9.

In 2019 and 2018, short-term forward contracts and currency swaps were arranged that generated a financial profit of €157 million and €127 million, respectively, which are recognized under "Financial result - Change in fair value of financial instruments".

In 2019 and 2018, the impact of the valuation of product derivatives and the price of CO₂ on "Operating income" was €281 million and €134 million, respectively.

(11) FINANCIAL RISKS

Group business is exposed to different kinds of financial risk, including: market risk, liquidity risk and credit risk. Repsol has a risk management structure and systems that enable it to identify, measure and control the risks to which the Group is exposed.

11.1) Market risk

Market risk is the potential loss faced due to adverse changes in market variables. The Group is exposed to several types of market risks: exchange rate risk, interest rate risk and commodities risk. The Company monitors exposure to market risk through ongoing sensitivity analysis. This strategy is complemented with other risk management measures when required by the nature of the risk exposure. Accordingly, the risk that affects the result is subject to maximum risk levels, measured in terms of Value at Risk (VaR), defined by the Executive Committee in line with the different authorization levels and supervised on a daily basis by an area that is separate from the area responsible for management.

A sensitivity analysis of the main risks inherent in financial instruments is included for each of the market risks described below, showing how income and equity could be affected (under "*Other comprehensive income*") as a result of the financial instruments held by the Group at the reporting date. The sensitivity analysis uses changes in variables representative of their historical behavior.

a) Exchange rate risk

The Group's profit and equity are exposed to fluctuations in the exchange rates of the currencies in which it transacts, with the US dollar generating the greatest level of exposure.

Exposure to exchange rate risk can be traced, on the one hand, to financial assets and investments, liabilities and monetary flows in currencies other than the functional currency of the Group's parent and, on the other hand, exchange rate risk extends to Group companies whose assets, liabilities and monetary flows are denominated in a currency other than the functional currency of said companies.

Repsol constantly monitors the Company's exposure to fluctuations in the exchange rate of currencies in which it undertakes significant operations and actively manages exchange rate risk positions that affect the financial result of the income statement. To this end, it contracts derivative financial instruments that seek to provide a consolidated economic hedge of currencies for which there is a liquid market.

Furthermore, cash flow hedges are arranged for the purpose of protecting the economic value of the flows corresponding to investment and divestment operations, corporate operations or project execution or one-off contracts for which the monetary flows are distributed over a period of time.

For exchange rate derivatives, see Note 10.

The sensitivity of net income and equity to exchange rate risk, as a result of the appreciation or depreciation of the euro against the dollar, is illustrated below:

	Appreciation (+) / depreciation (-) in exchange rate	€ Million
Effect on net income after tax	5%	6
	(5)%	(6)
Effect on equity	5%	89
	(5)%	(81)

b) Interest rate risk

Fluctuations in interest rates can affect interest income and expense from financial assets and liabilities with variable interest rates; which may also impact the fair value of financial assets and liabilities with a fixed interest rate. Furthermore, these fluctuations can affect the carrying amount of assets and liabilities due to variations in the discount rates of applicable cash flows, the return on investments and the future cost of raising financial resources.

Repsol's debt is linked to the most competitive financial instruments at any given time, both in terms of the capital market and banking market, and based on those market conditions considered to be ideal for each of them. Furthermore, Repsol contracts interest rate derivatives to reduce the risk of variations in financial burdens and in the fair value of its debt, and to mitigate the interest rate risk on future fixed-rate debt issues, which are designated in general as hedging instruments (see Note 10).

At December 31, 2019 and 2018, the net debt balance at fixed rates amounted to €6,423 million and €7,183 million, respectively. This is equivalent to 84% and 116%, respectively, of total net debt including interest rate derivative financial instruments.

The sensitivity of net income and equity, as a result of the effect of fluctuations in interest rates on the financial instruments held by the Group at December 31, is shown in the following table:

	Increase (+) / decrease (-) in interest rates (basis points)	€ Million
Effect on net income after tax	50 p.b.	5
	-50 p.b.	(5)
Effect on equity	50 p.b.	11
	-50 p.b.	(12)

In relation to the process of transitioning to new interest rate benchmarks currently under way in various jurisdictions worldwide, the Group has begun reviewing its inventory of contracts, in accordance with the timetable envisaged in the reform, in order to identify those that include interest rate clauses that may be affected, as well as the substitute interest rate clauses (fall-back clauses) contained therein.

c) Commodity price risk

The Group's results are exposed mainly to volatility in the prices of oil, derivative products, natural gas and electricity.

In some cases, Repsol arranges derivatives to mitigate its exposure to commodity price risk. These derivatives provide an economic hedge of the Group's results, although they are not always designated as hedging instruments for accounting purposes (see Note 10).

At December 31, 2019 an increase or decrease of 10% in these prices would have approximately led to the following changes in net income.

	Increase (+) / decrease (-) in commodity prices	€ Million
Effect on net income after tax	+10%	15
	(10)%	(15)

11.2) Liquidity risk

The liquidity policy applied by Repsol is structured around guaranteeing the availability of the necessary funds to ensure compliance with the obligations assumed and the evolution of the Group's business plans, while maintaining the ideal amount of liquid resources and seeking the highest level of efficiency in the management of financial resources at all times. In line with this prudent financial policy, Repsol maintains cash resources and other liquid financial instruments³⁰ and undrawn lines of credit that are sufficient to cover current debt maturities 1.2 times.

Repsol controls and monitors its financial needs ranging from the production of daily cash flow forecasts to the financial planning involved in the annual budgets and its strategic plan; it maintains diversified and stable sources of financing that facilitate efficient access to financial markets, all within the framework of a financing structure that is compatible with the corresponding credit rating in the investment grade category.

The Group had undrawn lines of credit amounting to €1,808 million and €2,249 million at December 31, 2019 and 2018, respectively.

The tables below contain an analysis on the maturities of the financial liabilities existing at December 31, 2019 and 2018:

	Maturities (€ Million)							Maturities (€ Million)						
	2019							2018						
	2020	2021	2022	2023	2024	Seq.	Total	2019	2020	2021	2022	2023	Seq.	Total
Bonds and obligations ⁽¹⁾	3,815	1,123	587	86	86	5,333	11,030	2,953	1,966	1,122	586	83	4,606	11,316
Loans and other financial debts ⁽¹⁾	2,383	198	246	80	3,041	585	6,533	1,426	250	239	337	88	3,465	5,805
Derivatives ⁽²⁾	(39)	—	—	—	—	—	(39)	59	7	7	6	6	23	108
Suppliers	3,638	—	—	—	—	—	3,638	3,244	—	—	—	—	—	3,244
Other payables	3,854	—	—	—	—	—	3,854	4,506	—	—	—	—	—	4,506

³⁰ Includes immediately available time deposits recognized under "Other current financial assets" amounting to €2,631 million.

NOTE: The amounts shown are the contractual undiscounted cash flows and, therefore, they differ from the amounts included on the balance sheet. Lease liabilities are not included (see Note 8.2).

- (1) Corresponds to future maturities of amounts recognized under "Non-current financial liabilities" and "Current financial liabilities", including interest or future dividends related to these financial liabilities. It does not include financial derivatives.
(2) The contractual maturities of the derivatives included under this heading are outlined in Note 10. It does not include trade derivatives recognized under "Other non-current liabilities" and "Other payables" on the balance sheet.

11.3) Credit risk³¹

Credit risk is defined as the possibility of a third party not complying with their payment obligations, thus creating credit losses. The Group specifically evaluates all available information consistent with internal credit risk management for each financial instrument, including those of a commercial nature.

The Group's exposure to credit risk, according to the type of financial instrument together with the impairment recognized at December 31, 2019 for each of them, is broken down as follows:

	Gross balance	Average impairment	Impairment	Net balance 12/31/2019	Net balance 12/31/2018
Current financial assets and Cash ⁽¹⁾	5,779	—	—	5,779	6,497
Non-current financial assets ⁽²⁾	3,827	61%	2,331 ⁽³⁾	1,496	1,583
Other current and non-current assets ⁽⁴⁾	2,123	29%	(612)	1,510	996
Trade and other receivables ⁽⁵⁾	6,111	3%	(200)	5,911	6,105

- (1) Impairments of less than one million euros due to the high credit quality of the counterparties (banks and financial institutions with ratings equal to or greater than BB). The Group's cash surplus is used to acquire safe and liquid short-term instruments, including short-term bank deposits and other instruments with similar characteristics. The portfolio of these investments is diversified to avoid a concentration of risk in any one instrument or counterparty.
(2) This heading is presented in the balance sheet net of the provision for the equity deficit of Cardón IV (see Note 14).
(3) Includes assets impaired in Phase III (see following section, "Expected loss"). The impairment losses at December 31, 2019 relate mainly to ongoing litigation and bankruptcy proceedings (€1,748 million) and to loans and lines of credit granted to joint ventures in Venezuela (€537 million).
(4) Includes mainly assets impaired in Phase III corresponding mainly to accounts receivable related to activity in Venezuela (see Notes 20.4 and 21.3).
(5) See the following section "Trade and other receivables".

Trade and other receivables

The trade receivables are shown on the balance sheet at December 31, 2019 and 2018, net of provisions for impairment, for an amount of €5,911 million and €6,105 million, respectively. The following table shows the age of trade receivables net of provisions for impairment (including expected loss):

Maturities	€ Million			
	2019		2018	
	Debt	Impairment	Balance	Balance
Unmatured debt	5,580	44	5,536	5,667
Matured debt 0-30 days	242	7	235	257
Matured debt 31-180 days	108	29	79	116
Matured debt over 180 days	141	80	61	65
TOTAL	6,071	160	5,911	6,105

The Group's credit risk on trade receivables is not significantly concentrated as it is spread out among a large number of customers and other counterparties. The maximum net exposure to a third party after its trade receivables have become impaired, including official bodies and public sector entities, does not exceed 1.7%.

As a general rule, the Group establishes a bank guarantee issued by financial institutions as the most suitable instrument of protection from credit risk. In some cases, the Group has contracted credit insurance policies whereby this partially transfers to third parties the credit risk related to the business activity of some of their businesses.

As part of its business activities, the Group has guarantees extended by third parties in an amount of €3,206 million at December 31, 2019 and €3.584 million at December 31, 2018. Of this balance, the trade receivables secured by guarantees stood at €908 million at December 31, 2019 and €531 million at December 31, 2018, respectively.

³¹ The credit risk information included in this section does not include the credit risk of investees or joint ventures, the impact of which is recognized under "Net income from investments accounted for using the equity method". Expected credit losses are an estimate, weighted by probability, of credit losses (i.e. the present value of all cash deficits) over the expected life of the financial instrument. A cash deficit is defined as the difference between the cash flows due to the entity under the contract and the cash flows it expects to receive. Because expected credit losses take into account both the amount and timing of payments, there is a credit loss if the entity expects to collect in full, but later than contractually agreed.

EXPECTED LOSS:

The Group calculates the expected credit loss on its **trade accounts receivable** using its own risk assessment models for its customers, taking into account the probability of default, the balance at risk and the estimated Loss Given Default (LGD), taking into account all the information available for each customer. As a general rule, the Group applies a threshold of more than 180 days in default for the consideration that objective evidence of default/deterioration has been incurred. These criteria are applied in the absence of other objective evidence of non-compliance, such as bankruptcy situations, etc.

The remaining **financial instruments**, mainly certain loans and financial guarantees granted to joint ventures, are individually monitored for the purposes of determining when, if any, there may have been a significant impairment in credit risk or default.

The expected loss on financial instruments is calculated based on the stage of the debtor's credit risk³¹. The impairment losses on the **financial assets**, to which the expected credit loss model is applicable, are calculated using the following formula:

$$\text{Expected credit loss} = \text{Probability of default}^{(1)} \times \text{Exposure}^{(2)} \times \text{LDG}^{(3)}$$

⁽¹⁾ Probability of default: is calculated individually for each trade debtor according to the solvency models approved by the Group, except for individuals, for whom an average default rate is used. The models take into account quantitative information (economic-financial variables of the customer, external and internal payment behavior, etc.), qualitative information (sector of activity, macroeconomic data on the country, etc.) and market sensitivity variables (e.g. price performance). An internal rating and an associated probability of default are obtained for each debtor, according to the models.

⁽²⁾ Exposure: is calculated taking into account the total amount of outstanding credit and a potential future exposure according to the available risk limit.

⁽³⁾ Loss Given Default (LGD): reflects the percentage of unrecovered exposure in the event of default, also taking into account whether or not such exposure is guaranteed, and is based on the historical behavior of customers.

With regard to financial instruments relating to operations in **Venezuela**, the expected loss was calculated by considering the cash flow scenarios expected for the business, weighted by their estimated probability. Three LGD scenarios (moderate, significant and severe) are applied with different assumptions and economic impacts on the estimated cash flows. The probability of occurrence of these scenarios is weighted according to the historical information of sovereign defaults (Moody's Report: "Sovereign Default and Recovery Rates, 1983-2017") and Management's expectations. The estimation of the cash flow scenarios is consistent with those used for the purpose of calculating the recoverable amount of assets. The assessment of credit risk impairment in Venezuela required estimates of the implications and evolution of a highly uncertain environment, which made it advisable to have an independent expert to validate Management's judgements.

³² Phase 1: At the time of initial recognition, the expected credit loss is calculated with the probability of default in the first 12 months. In the case of trade receivables, the calculation is spread over the life of the instrument, in accordance with the accounting standard.

Phase 2: When the instrument undergoes a significant increase in risk, the expected loss is calculated with the probability of default for the entire life of the instrument.

Phase 3: When the instrument is already impaired, the expected loss for the entire life of the instrument is calculated and, in the event that interest accrues, it is calculated on the net balance of the provision for credit losses.

NON-CURRENT ASSETS AND LIABILITIES

(12) INTANGIBLE ASSETS

The breakdown of the intangible assets and of the related accumulated amortization and impairment losses at December 31, 2019 and 2018 is as follows:

	€ Million									
	Upstream				Downstream				Corporate	
	Goodwill	Exploration permits	Computer software	Other assets	Service station association rights and other rights ⁽⁴⁾	Computer software	CO ₂ emission allowances ⁽⁵⁾	Concessions and others ⁽⁶⁾	Computer software and others	
GROSS COST										
Balance at January 1, 2018	2,947	2,221	176	80	746	300	69	182	307	7,028
Investments ⁽¹⁾	84	192	12	4	56	48	50	9	33	488
Disposals or reductions	(2)	(112)	(8)	(6)	(70)	(16)	—	—	(5)	(219)
Translation differences	110	97	9	5	8	2	—	1	—	232
Change in scope of consolidation	64	—	—	—	3	18	—	136	—	221
Reclassifications and other movements	—	22	9	—	63	13	(7)	6	(2)	104
Balance at December 31, 2018	3,203	2,420	198	83	806	365	112	334	333	7,854
First-time application of IFRS 16 ⁽²⁾	—	—	—	—	(562)	—	—	—	—	(562)
Balance at January 1, 2019	3,203	2,420	198	83	244	365	112	334	333	7,292
Investments ⁽¹⁾	17	217	15	5	59	86	114	99	24	636
Disposals or reductions	—	(67)	—	—	(9)	(2)	(1)	(13)	(29)	(121)
Translation differences	53	42	4	2	2	1	—	—	—	104
Change in scope of consolidation	(7)	—	—	—	—	—	—	25	—	18
Reclassifications and other movements	(69)	73	1	1	10	11	88	2	—	151
Balance at December 31, 2019	3,197	2,685	218	91	306	461	313	447	328	8,080
ACCUMULATED AMORTIZATION AND IMPAIRMENT LOSSES										
Balance at January 1, 2018	(184)	(1,052)	(102)	(66)	(468)	(175)	—	(159)	(238)	(2,444)
Amortization	—	(122)	(21)	(1)	(40)	(21)	—	(6)	(24)	(235)
Disposals or reductions	—	113	8	—	69	8	—	—	5	203
(Provision for)/Reversal of provisions for impairment ⁽³⁾	(8)	(210)	—	(1)	—	—	—	1	(4)	(222)
Translation differences	—	(49)	(6)	(5)	(3)	(1)	—	(1)	—	(65)
Changes in scope of consolidation	—	—	—	—	—	—	—	—	—	—
Reclassifications and other movements	—	12	—	—	—	—	—	(7)	—	5
Balance at December 31, 2018	(192)	(1,308)	(121)	(73)	(442)	(189)	—	(172)	(261)	(2,758)
First-time application of IFRS 16 ⁽²⁾	—	—	—	—	274	—	—	3	—	277
Balance at January 1, 2019	(192)	(1,308)	(121)	(73)	(168)	(189)	—	(169)	(261)	(2,481)
Amortization	—	(48)	(20)	—	(25)	(37)	—	(23)	(25)	(178)
Disposals or reductions	—	67	—	—	9	2	—	12	30	120
(Provision for)/Reversal of provisions for impairment ⁽³⁾	(868)	(296)	—	—	—	—	(6)	(3)	(3)	(1,176)
Translation differences	—	(22)	(2)	(1)	(1)	(1)	—	—	—	(27)
Changes in scope of consolidation	—	—	—	—	—	—	—	—	—	—
Reclassifications and other movements	34	121	—	1	9	—	—	1	—	132
Balance at December 31, 2019	(1,026)	(1,486)	(143)	(73)	(176)	(225)	(6)	(182)	(259)	(3,610)
Net balance at December 31, 2018	3,011	1,112	77	10	364	176	112	162	72	5,096
Net balance at December 31, 2019	2,171	1,199	75	18	130	236	307	265	69	4,470

⁽¹⁾ Investments in 2019 and 2018 come from the direct acquisition of assets. Investments in "Exploration permits" mainly refer to the acquisition of acreage and geological and geophysical costs in the amount of €199 million and €170 million in 2019 and 2018, respectively.

⁽²⁾ Rights of use reclassified as property, plant and equipment (see Notes 3.2.1 and 13).

⁽³⁾ See Note 21.

⁽⁴⁾ Includes both the service stations association rights (see Note 3.4.2). At December 31, 2019 the capitalized costs of obtaining contracts amounted to €102 million.

⁽⁵⁾ In 2019, it included €201 million corresponding to the CO₂ emission allowances assigned free of charge for 2019 in accordance with the National Allocation Plan (€63 million in 2018) and the reduction of the allowances consumed by the emissions produced in 2019 amounting to €113 million (€70 million in 2018). For additional information on CO₂ allowances, see Note 31.1.

⁽⁶⁾ Includes the customer portfolio acquired from Viesgo (see Note 4).

Goodwill

The breakdown of goodwill, by segment and company, at December 31, 2019 and 2018 is as follows:

Goodwill	€ Million	
	2019	2018
Upstream:		
Repsol Oil & Gas Canada, Inc.	1,640	2,441
Other companies	106	89
Downstream⁽¹⁾:		
Repsol Portuguesa, S.A.	154	154
Repsol Gas Portugal, S.A.	106	106
Repsol Comercial de Productos Petrolíferos, S.A.	103	104
Repsol Electricidad y Gas, S.A.	49	49
Other companies	13	68
TOTAL⁽²⁾	2,171	3,011

⁽¹⁾ Corresponds to a total of 12 CGUs, with the most significant individual amount not exceeding to 31% of the total of segment. Of the total, €424 million and €443 million in 2019 and 2018, respectively, correspond to companies whose main activities are carried on in Europe.

⁽²⁾ Includes €1,026 million and €191 million of accumulated impairment losses in 2019 and 2018, respectively.

Upstream:

The goodwill that arose from the acquisition of ROGCI, which was allocated to the segment for the purpose of assessing its recoverability, is justified, among other reasons, by the synergies arising from the acquisition as a result of savings in corporate functions and support functions that benefit the segment as a whole, and which could not be allocated to specific assets on a non-arbitrary basis.

Once most of these synergies had been captured and after the decrease in the recoverable amount of the assets in the *Upstream* segment (see Note 21.2), an impairment loss of €793 million was recognized on the goodwill. Unfavorable changes in the key assumptions that determine the recoverable amount of segment assets, mainly declining oil and gas prices, sales volume (production) and increases in the discount rate, would result in additional impairment losses on the goodwill of ROGCI. Note 21.2 includes additional information on the effect of changes in the key assumptions made on the value of segment assets.

Downstream:

The recoverability of the goodwill of the *Downstream* segment was analyzed in accordance with the criteria detailed in Note 3. In addition, for those CGUs where the goodwill allocated thereto is significant compared to the total amount of goodwill, Repsol analyses whether there are reasonably foreseeable changes in the key assumptions for determining the recoverable amount.

Specifically, the most relevant sensitivity analyses have been carried out, on an individual basis, on the following assumptions: i) a decrease in sales volume (5%), ii) an increase in operating and investment costs (5%), iii) a decrease in the unit contribution margin (5%), and iv) an increase in the discount rate (100 basis points). Repsol considers that, based on present knowledge, reasonably foreseeable changes in these assumptions would not have a significant impact on the Group's financial statements at December 31, 2019.

(13) PROPERTY, PLANT AND EQUIPMENT

The breakdown of "Property, plant and equipment" and of the related accumulated depreciation and impairment losses at December 31, 2019 and 2018 is as follows:

	€ Million								Total
	Upstream			Downstream			Corporate		
	Investments in areas with reserves	Operating investments	Other property, plant and equipment	Land, buildings and other constructions	Machinery and plant	Other property, plant and equipment	Property, plant and equipment in progress	Land, construction and others ⁽⁶⁾	
GROSS COST									
Balance at January 1, 2018	24,108	3,535	437	1,941	19,034	1,218	844	1,037	52,154
Investments	1,188	266	92	6	16	22	788	25	2,403
Disposals or reductions	(1,431)	(203)	(18)	(22)	(167)	(16)	(7)	(2)	(1,866)
Translation differences	1,082	147	23	24	125	15	7	—	1,423
Change in scope of consolidation ⁽¹⁾	—	—	—	5	345	—	7	—	357
Reclassifications and other movements ⁽²⁾	(40)	(125)	49	53	643	91	(801)	—	(130)
Balance at December 31, 2018	24,907	3,620	583	2,007	19,996	1,330	838	1,060	54,341
First-time application of IFRS 16	(80)	—	255	417	1,084	123	—	19	1,818
Balance at January 1, 2019	24,827	3,620	838	2,424	21,080	1,453	838	1,079	56,159
Investments	1,601	184	160	30	149	169	848	19	3,160
Disposals or reductions	(103)	(151)	(16)	(25)	(122)	(19)	(3)	(33)	(472)
Translation differences	479	67	17	11	62	8	3	—	647
Change in scope of consolidation ⁽¹⁾	—	(3)	—	9	7	—	9	—	22
Reclassifications and other movements ⁽²⁾	(366)	(582)	(97)	66	695	68	(794)	—	(1,010)
Balance at December 31, 2019	26,438	3,135	902	2,515	21,871	1,679	901	1,065	58,506
ACCUMULATED DEPRECIATION AND IMPAIRMENT LOSSES ⁽³⁾									
Balance at January 1, 2018	(10,476)	(2,498)	(188)	(982)	(12,121)	(827)	—	(462)	(27,554)
Depreciation	(1,028)	(115)	(14)	(35)	(635)	(41)	—	(37)	(1,905)
Disposals or reductions	1,385	179	15	18	162	15	—	2	1,776
(Provision for)/Reversal of provisions for impairment ⁽⁴⁾	(438)	(29)	(34)	1	14	(60)	—	—	(546)
Translation differences	(470)	(100)	(9)	(18)	(86)	(6)	—	—	(689)
Changes in scope of consolidation	—	—	—	(1)	—	—	—	—	(1)
Reclassifications and other movements ⁽²⁾	19	(15)	3	—	(2)	4	—	—	9
Balance at December 31, 2018	(11,008)	(2,578)	(227)	(1,017)	(12,668)	(915)	—	(497)	(28,910)
First-time application of IFRS 16	65	—	(88)	(222)	(459)	325	—	—	(379)
Balance at January 1, 2019	(10,943)	(2,578)	(315)	(1,239)	(13,127)	(590)	—	(497)	(29,289)
Depreciation	(1,161)	(54)	(60)	(58)	(793)	(89)	—	(41)	(2,256)
Disposals or reductions	2	151	6	18	109	16	—	33	335
(Provision for)/Reversal of provisions for impairment ⁽⁴⁾	(3,887)	(392)	(9)	(3)	284	(9)	—	—	(4,016)
Translation differences	(196)	(45)	(7)	(8)	(46)	4	—	—	(298)
Changes in scope of consolidation	—	3	—	—	—	—	—	—	3
Reclassifications and other movements ⁽²⁾	45	409	3	(22)	(270)	(5)	—	—	160
Balance at December 31, 2019	(16,140)	(2,506)	(382)	(1,312)	(13,843)	(673)	—	(505)	(35,361)
Net balance at December 31, 2018	13,899	1,042	356	990	7,328	415	838	563	25,431
Net balance at December 31, 2019	10,298	629	520	1,203	8,028	1,006	901	560	23,145

⁽¹⁾ See Note 5.

⁽²⁾ In 2019 and 2018 this item includes reclassifications from "Property, plant and equipment in progress" mainly to "Machinery and plant", as a result of several upgrade, repair and remodeling projects of the Group's refineries. In 2019, the reclassification of the Upstream assets in Vietnam to "Other non-current assets" is worthy of note (see Notes 16 and 21.3). "Machinery and plant" includes the reclassification of the net reversal of the impairment loss on the Gas & Trading business in North America to "Onerous contracts" (see Note 15).

⁽³⁾ See Note 3 for the measurement and useful life of the items of property, plant and equipment.

⁽⁴⁾ See Note 21. At December 31, 2019 and 2018, the provisions for impairment losses on assets came to €7,553 million and €3,532 million, respectively.

⁽⁵⁾ In 2019 and 2018, includes property, plant and equipment in progress corresponding to investments in the industrial complexes of the Refining and Chemicals businesses, mainly in Spain and, to a lesser extent, in Peru and Portugal.

⁽⁶⁾ Includes mainly "Land and buildings" amounting to €459 million and €460 million in 2019 and 2018, respectively. "Other" mainly includes, "Machinery and plant" and "Other properties" in the amount of €101 million and €103 million in 2019 and 2018, respectively.

The breakdown, by geographical area, of the Group's most significant investments is detailed in "Disclosures by geographical area" included in Note 4.3, which is presented using the Group's reporting model.

This heading also includes investments made by the Group in service concession arrangements in the amount of €243 million and €256 million at December 31, 2019 and 2018, respectively. These concessions revert to the State over a period of time ranging from 2020 to 2066.

The figures corresponding to non-depreciable assets, i.e., land and property, plant and equipment in progress, amount to €586 million and €1,054 million at December 31, 2019, respectively, and €584 million and €974 million at December 31, 2018, respectively.

“Property, plant and equipment” includes fully depreciated items in the amount of €9,536 million and €9,303 million at December 31, 2019 and 2018, respectively.

In accordance with industry practices, Repsol insures its assets and operations worldwide. The risks insured include damage to property, plant and equipment, together with the subsequent interruptions in its business that such damage may cause. The Group believes that the current coverage level is, in general, appropriate for the risks inherent to its business.

The breakdown of and changes in the right-of-use assets, as well as their accumulated depreciation, are as follows:

€ Million	Machinery and plant ⁽²⁾	Transport elements ⁽³⁾	Buildings ⁽⁴⁾	Land	Other property, plant and equipment	Total
Balance at December 31, 2018	643	—	—	111	—	754
First-time application of IFRS 16 ⁽¹⁾	805	144	111	73	20	1,153
Balance at January 1, 2019	1,448	144	111	184	20	1,907
Acquisitions	147	159	38	9	1	354
Disposals and reductions	(1)	—	(11)	(1)	(6)	(19)
Depreciation and amortization	(167)	(48)	(26)	(18)	(10)	(269)
Translation differences and other	62	1	(2)	11	(4)	68
Balance at December 31, 2019	1,489	256	110	185	1	2,041

⁽¹⁾ Includes rights of use previously classified under intangible assets.

⁽²⁾ Includes service stations, gas pipelines and operation platforms.

⁽³⁾ Includes ships and land transport vehicles.

⁽⁴⁾ Includes offices and parking lots.

The most significant lease agreements are as follows:

- On May 15, 2006 the Group signed an agreement with Emera Brunswick Pipeline Company, Ltd. for the transportation of natural gas through a pipeline that connects the Canaport plant with the US border for a period of 25 years (renewable for up to an additional 30 years). It came into effect in July 2009. At December 31, 2019, the rights of use under this contract were provisioned in full and future payments were recognized as financial liabilities at \$429 million (€382 million).
- In addition, on April 21, 2006 the Group signed an agreement with Maritimes & North East Pipeline for the transportation of Canadian natural gas from the Canadian border to Dracut (USA) for an initial term of 25 years (renewable for up to an additional 30 years). It initially came into effect in March 2009. At December 31, 2019, the corresponding rights of use amounted to €468 million³³ and the future payments recognized as a financial liability were \$1,072 million (€954 million).
- For the service stations that the Group has in Spain, Portugal, Italy, Peru and Mexico, lease agreements are signed for various concepts and with varying terms. At December 31, 2019, the corresponding rights of use amounted to €936 million and the future payments recognized as a financial liability were €911 million.

³³ Contract provisioned for an amount of €256 million (see Note 15).

(14) INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD

Movement in this heading during 2019 and 2018 was as follows:

	€ Million	
	2019	2018
Opening balance for the year	7,194	9,268
Impact of new standards (Note 3.2.1)	(50)	—
Adjusted opening balance for the year	7,144	9,268
Net investments	(7)	5
Changes in scope of consolidation ⁽¹⁾	56	(3,235)
Net income from investments accounted for using the equity method ⁽²⁾	351	1,053
Net income from discontinued operations	—	68
Dividends paid out	(426)	(597)
Translation differences	145	209
Reclassifications and other movements ⁽³⁾	(26)	423
Balance at year end	7,237	7,194

⁽¹⁾ In 2018 it mainly includes the write down of the investment in Naturgy.

⁽²⁾ Corresponds to the net income for the period from continuing operations. It does not include "Other comprehensive income" amounting to €142 million in 2019 (€139 million for joint ventures) and €234 million in 2018 (€230 million for joint ventures), mainly due to translation differences.

⁽³⁾ Includes mainly the reclassification of the equity deficit of Petroquiriquire and Cardón (see "Value of interest in joint ventures" below).

The breakdown of the investments accounted for using the equity method is as follows:

	€ Million	
	Carrying amount of the investment ⁽²⁾	
	2019	2018
Joint ventures	7,126	7,037
Associates ⁽¹⁾	111	157
TOTAL	7,237	7,194

⁽¹⁾ This mainly includes the interest in Petrocarabobo, S.A. together with Oleoducto de Crudos Pesados (OCP) Ltd.

⁽²⁾ In 2019, €6,780 million correspond to *Upstream* (€6,812 million in 2018).

Joint ventures are considered, to the extent that the shareholders have a right to the net assets, those that are based on the shareholder agreements signed with each of the shareholders in each company, by virtue of which strategic operational and financial decisions require the unanimous consent of the parties sharing control. The most significant joint ventures are:

Repsol Sinopec Brasil (RSB)

Repsol, S.A. holds a 60% interest in the Repsol Sinopec Brasil (RSB) group, which comprises Repsol Sinopec Brasil, S.A. and its subsidiaries. Repsol's interest is implemented by holding shares representing 60% of the share capital of Sinopec Brasil, S.A. The remaining 39.991% corresponds to Tittop Loxembourg, S.A.R.L.

This company's main businesses are hydrocarbon exploration and production, the import and export of oil and gas and derivative products, the storage, distribution and sale of oil, oil derivatives and natural gas, as well as the provision of services related to these activities. It operates mainly in Brazil.

For loans granted to the Repsol Group by RSB, see Note 8.2. For the guarantees granted by the Group to RSB, see Note 27.

YPFB Andina, S.A.

Repsol holds a 48.33% interest in YPFB Andina, S.A., through Repsol Bolivia, S.A., with the other shareholders being YPF Bolivia (51%) and non-controlling shareholders (0.67%). It engages in hydrocarbon exploration, operation and sale. It operates mainly in Bolivia.

BPRY Caribbean Ventures, LLC. (BPRY)

Repsol holds a 30% interest in BPRY Caribbean Ventures LLC (through Repsol Exploración, S.A.). The remaining 70% is owned by British Petroleum. This company and its subsidiaries mainly engage in hydrocarbon exploration, operation and sale, and other related activities, such as the construction and operation of oil rigs, pipelines and other facilities in Trinidad and Tobago.

Petroquiriquire, S.A.

Repsol has a 40% interest in Petroquiriquire, S.A. through Repsol Exploración, S.A. Petroquiriquire is a public-private venture, partly held by Corporación Venezolana de Petróleo, S.A. (CPV) with 56% and PDVSA Social, S.A. with 4%. Its core activity is the production and sale of oil and gas in Venezuela. For information on the Group's risks and exposure in Venezuela, see Note 21.3.

Cardón IV, S.A.

Repsol has a 50% interest in Cardón IV, S.A. through Repsol Exploración, S.A. The other 50% is owned by the ENI group. Cardón IV is a gas licensee whose core activity is the production and sale of gas in Venezuela. For information on the Group's risks and exposure in Venezuela, see Note 21.3.

Repsol Sinopec Resources UK Ltd. (RSRUK)

A company held by Talisman Colombia Holdco, Ltd. and Addax Petroleum UK Limited ("Addax"), a subsidiary of the Sinopec Group, with a 51% and 49% interest, respectively, and whose core activity is hydrocarbon exploration and operation in the North Sea. This joint venture is governed by a shareholder agreement that requires the unanimous consent of both shareholders for all significant financial and operating decisions. For information on the arbitration procedure concerning the purchase by Addax of its 49% interest in RSRUK, see Note 15.

Equion Energía Ltd.

Equion is a company held 51% and 49% by Ecopetrol, S.A. and Talisman Colombia Holdco, Ltd, respectively. Equion mainly engages in the exploration, research, operation, development and sale of hydrocarbon and derivative products in Colombia. Based on a shareholder agreement with Ecopetrol, S.A., Repsol treats Energía Ltd. as one of its joint ventures.

The tables below provides a summary of the financial information for these investments, prepared in accordance with EU-IFRS accounting policies, as detailed in Note 3 and its reconciliation with the carrying amount of of the investment in the consolidated financial statements:

Income from joint ventures:

€ Million	RSB		YPFB Andina		BPRY		Petroquiriquire		Cardón IV		RSRUK		Equion	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Revenue	1,339	1,560	213	217	1,794	2,162	244	277	538	570	1,156	1,253	337	399
Amortization and provisions for impairment	(413)	(253)	(85)	(96)	(1,890)	(990)	(77)	(122)	(46)	(650)	(401)	(336)	(130)	(169)
Other operating income/(expenses) ⁽²⁾	(466)	(782)	(90)	(139)	(932)	(1,037)	(60)	(77)	(144)	189	(276)	186	(79)	(34)
Operating income	460	525	38	(18)	(1,028)	135	107	78	348	109	479	1,103	128	196
Net interest	168	128	10	7	(95)	(95)	(51)	(37)	(146)	(189)	23	—	13	3
Financial result	(62)	15	(7)	(10)	(26)	(10)	3	(5)	(7)	(5)	(94)	(146)	(30)	2
Net income from investments accounted for using the equity method-net of taxes	23	23	14	13	—	—	—	—	—	—	—	—	—	—
Net income before tax	589	691	55	(8)	(1,149)	30	59	36	195	(85)	408	957	111	201
Tax expense ⁽³⁾	(159)	(238)	(12)	6	690	(93)	(87)	193	(107)	(282)	(136)	373	(45)	(84)
Net income attributable to the parent	430	453	43	(2)	(459)	(63)	(28)	229	88	(367)	272	1,330	66	117
Repsol interest	60%	60%	48%	48%	30%	30%	40%	40%	50%	50%	51%	51%	49%	49%
Consolidation income	258	272	21	(1)	(138)	(19)	(11)	92	44	(184)	139	678	32	57
Dividends	274	283	44	1	—	—	—	247	—	—	—	—	—	—
Other comprehensive income⁽⁴⁾	87	193	10	21	13	29	(8)	(22)	(10)	(18)	17	(5)	5	11

Note: The itemized amounts below feature the Group's percentage of ownership interest in each of the companies:

- ⁽¹⁾ In 2019, BPRY includes impairment losses recognized as a result of the new gas price scenarios (see Note 21). In addition, in 2019 Petroquiriquire and Cardón IV includes the impairment of property, plant and equipment and accounts receivable from PDVSA amounting to €5 million and €29 million, respectively. In 2018, it included the impairment of property, plant and equipment of Petroquiriquire and Cardón IV, amounting to €323 million.
- ⁽²⁾ In 2018 it included lease expenses for the year mainly arising from the lease of the floating production storage and offloading (FPSO) platforms guaranteed by the Group (see Note 27) amounting to €126 million.
- ⁽³⁾ In 2018, in Venezuela it includes the impact of the cancellation of deferred tax assets as a result of Presidential Decree No. 35, offset by the positive tax impacts arising from translation differences.
- ⁽⁴⁾ Relates to "Valuation gains/(losses)" and "Amounts transferred to the income statement" in the statement of recognized income and expense.

Value of interest in joint ventures:

€ Million	RSB		YPFB Andina		BPRY		Petroquiriquire		Cardón IV		RSRUK		Equion	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Assets														
Non-current assets	9,434	7,951	894	867	7,067	7,660	215	210	1,033	1,009	3,278	3,543	36	252
Current assets	1,316	473	435	445	582	797	4,093	3,926	309	222	1,556	1,016	690	541
Cash and cash equivalents	27	35	94	53	74	64	13	13	12	41	8	26	51	50
Other current assets	1,289	438	341	392	508	733	4,080	3,913	297	181	1,548	990	639	491
Total Assets	10,750	8,424	1,329	1,312	7,649	8,457	4,308	4,136	1,342	1,231	4,834	4,559	726	793
Liabilities														
Non-current liabilities	2,056	648	234	235	5,481	5,910	898	852	1,605	1,803	2,875	2,857	20	124
Financial liabilities	933	—	—	—	1,656	1,810	740	698	1,203	1,410	143	—	—	—
Other non-current liabilities ⁽¹⁾	1,123	648	234	235	3,825	4,100	158	154	402	393	2,732	2,857	20	124
Current liabilities	1,432	528	168	121	382	345	4,459	4,284	629	388	248	283	95	134
Financial liabilities	141	213	—	—	—	—	—	—	—	—	—	—	—	—
Other current liabilities	1,291	315	168	121	382	345	4,459	4,284	629	388	248	283	95	134
Total Liabilities	3,488	1,176	402	356	5,863	6,255	5,357	5,136	2,234	2,191	3,123	3,140	115	258
NET ASSETS	7,262	7,248	927	956	1,786	2,202	(1,049)	(1,000)	(892)	(960)	1,711	1,419	611	535
Repsol interest	60%	60%	48%	48%	30%	30%	40%	40%	50%	50%	51%	51%	49%	49%
Share in net assets ⁽²⁾	4,357	4,349	445	459	536	661	(420)	(400)	(446)	(480)	873	724	299	262
Capital gains/(losses)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Carrying amount of the investment	4,357	4,349	445	459	536	661	—	—	—	—	873	724	299	262

Note: The itemized amounts below feature the Group's percentage of ownership interest in each of the companies:

⁽¹⁾ In 2019 and 2018 RSB includes non-current provisions for dismantling obligations for the amount of €112 million and €101 million.

⁽²⁾ Petroquiriquire: in 2019 and 2018 a provision was recognized for contingencies and charges rose to €420 million and €400 million at December 31, respectively, corresponding to the equity deficit of Petroquiriquire (see Note 15).

Cardón IV: The value of the investment is made equal to zero by deducting the carrying amount from the loan granted to Cardón IV, which is considered a net investment (see Note 9.1), and a provision for contingencies and charges is also recognized for the remaining equity deficit in 2019 in the amount of €75 million.

Lastly, and regarding joint arrangements and associates that are material or of significant relative importance: (i) there are no legal restrictions on the capacity to transfer funds; (ii) the financial statements that have been used refer to the same date as the financial statements of Repsol, S.A.; and (iii) there are no unrecognized losses.

(15) CURRENT AND NON-CURRENT PROVISIONS

15.1) Provisions

At December 31, 2019 and 2018, the balance and changes in these items during 2019 and 2018 are as follows:

	€ Million			
	Provisions for current and non-current contingencies and charges			
	Field decommissioning	Onerous contracts	Other provisions ⁽¹⁾	Total
Balance at January 1, 2018	2,175	812	1,028	4,015
Impact of new standards (see Note 3.2.1)	—	—	18	18
Balance at January 1, 2018	2,175	812	1,046	4,033
Provisions charged to income ⁽²⁾	85	55	365	505
Provisions reversed with a credit to income	(93)	(54)	(71)	(218)
Cancellation due to payment ⁽³⁾	(67)	(85)	(282)	(434)
Changes in scope of consolidation	16	—	43	59
Translation differences	50	34	16	100
Reclassifications and other ⁽⁴⁾	(204)	(31)	121	(114)
Balance at December 31, 2018	1,962	731	1,238	3,931
Impact of new standards (see Note 3.2.1)	—	(116)	—	(116)
Balance at January 1, 2019	1,962	615	1,238	3,815
Provisions charged to results ⁽²⁾	94	105	1,277	1,476
Provisions reversed with a credit to income	(85)	(12)	(33)	(130)
Cancellation due to payment	(99)	(51)	(86)	(236)
Changes in scope of consolidation	(4)	—	11	7
Translation differences	30	17	3	50
Reclassifications and other ⁽⁴⁾	(28)	(254)	77	(205)
Balance at December 31, 2019	1,870	420	2,487	4,777

⁽¹⁾ "Other provisions" includes mainly the provisions recognized to cover obligations arising from environmental risks (see Note 31), pension commitments (see Note 29), use of CO₂ allowances (see Note 31), employee incentive schemes (see Note 29), provisions for litigation (see Note 15.2), provisions for tax risks not related to income tax (see Note 23), provisions for workforce restructuring and other provisions to cover obligations arising from the Group's interests in companies. Following the application of IFRIC 23 (see Note 3.2.1), the tax provisions related to income tax are presented under "Deferred taxes and other" in the balance sheet (see Note 23).

⁽²⁾ Includes €114 million and €103 million reflecting the discounting to present value of provisions in 2019 and 2018. In 2019 "Provisions charged to results" includes the provisions corresponding to the arbitration initiated by Addax Petroleum UK Limited in relation to the purchase of Talisman Energy UK Limited (see 15.2) and the consumption of CO₂ rights during the year (see Note 31).

⁽³⁾ In 2018 "Other provisions", included mainly the payment arising from the settlement agreement that ended the "Galley" oil pipeline litigation and included the payments that canceled the provisions for workforce restructuring.

⁽⁴⁾ In 2019 "Onerous contracts" included the reclassification of the net reversal of the impairment of the Wholesaler&Trading Gas business in North America (see Notes 13 and 21). In 2019 and 2018 "Other provisions" included the adjustment for the negative value of the investments in Petroquiriquire and Cardón IV (see Note 14).

The following table provides an estimate of maturities of provisions at year-end 2019:

	Due dates ⁽¹⁾ € Million			Total
	Less than one year	From 1 to 5 years	> 5 years and/or undetermined	
Provisions for decommissioning fields	121	521	1,228	1,870
Provision for onerous contracts	52	148	220	420
Other provisions	692	865	930	2,487
TOTAL	865	1,534	2,378	4,777

⁽¹⁾ Due to the nature of the risks provisioned, these timing assessments are subject to uncertainty and changes that are beyond the Group's control. As a result, this schedule could change in the future depending on the circumstances on which these estimates are based.

⁽²⁾ In 2019, a change in the discount rate of +/- 50 p.b. would have the effect of decreasing/increasing provisions for dismantling costs by €(108) million and €120 million, respectively.

15.2) Disputes

The amounts provisioned are calculated on the basis of the best estimate of the amount needed to settle the lawsuit in question, underpinned, among others, by a case-by-case analysis of the facts, the legal opinions of its in-house and external advisors and prior experience in these matters.

At December 31, 2019, Repsol's balance sheet includes provisions for proceedings in the ordinary course of its activities totaling €948 million (€106 million at December 31, 2018). The most significant legal or arbitration proceedings and their status as of the date of authorization for issue of these Consolidated Financial Statements are summarized below.

United Kingdom

Addax arbitration in relation to the purchase of Talisman Energy UK Limited (TSEUK)

On July 13, 2015, Addax Petroleum UK Limited (“Addax”) and Sinopec International Petroleum Exploration and Production Corporation (“Sinopec”) filed a “*Notice of Arbitration*” against Talisman Energy Inc. (currently “ROGCI”) and Talisman Colombia Holdco Limited (“TCHL”) in connection with the purchase of 49% of the shares of TSEUK (currently “RSRUK”, see Note 13). On October 1, 2015 ROGCI and TCHL submitted the answer to the “*Notice of Arbitration*”. On May 25, 2016, Addax and Sinopec formalized the arbitration claim, in which they requested that, in the event that their claims be estimated in their entirety, they be paid the amount of their initial investment in RSRUK, materialized in 2012 through the purchase of 49% of this from TCHL, a 100% subsidiary of ROGCI, together with any additional investment, past or future, in such company, as well as any loss of opportunity that could have occurred, estimating all this in a figure total of approximately \$5.500 million.

The dispute relates to events which took place in 2012, prior to Repsol’s acquisition of Talisman in 2015 -and that does not involve any actions by Repsol.

ROGCI and TCHL submitted their response to the arbitration complaint and corresponding evidence on November 25, 2016. Addax and Sinopec submitted a reply brief with additional evidence on May 31, 2017; and ROGCI and TCHL submitted a rejoinder brief and further evidence on August 2, 2017. New expert reports were exchanged on October 18, 2017, November 1, 2017, and May 23, 2018.

ROGCI and TCHL asked the Arbitral Tribunal to dismiss the claims of Addax and Sinopec based on contractual guarantees and in January 2017 the Court decided that it would deliberate on that request prior to other issues. The hearing regarding this request took place on June 19 and 20, 2017. On August 15, 2017, the Arbitral Tribunal issued a Partial Award dismissing Addax and Sinopec warranty claims.

The Arbitral Tribunal decided, among other procedural matters, the split of the procedure in two phases: the first addressing liability and the second dealing with the quantum of any liability found that, where appropriate, would have been determined. The oral hearing on liability issues took place between January 29 and February 22 and between June 18 and 29, 2018, this last period being devoted mainly to the testimonies of the experts proposed by the parties. The hearing on the oral conclusions was held from July 9 to 11, 2018 and the written conclusions were presented on September 29 and October 12, 2018.

On January 29, 2020, the Arbitral Tribunal issued its second Partial Award on one aspect of the five matters to be determined in the liability phase and, although Repsol had considered the claims to be without merit -supported by external advice-, and still does, the Tribunal has decided that ROGCI and TCHL are liable to Sinopec and Addax in respect of that aspect of the claim.

As indicated, the partial Award issued addresses one of the five claims regarding liability. The Court has indicated that it will decide the result of the remaining ones in due time, through subsequent awards, although the time at which they will be issued is currently unknown. In principle, once all of them have been decided, a new procedural phase will be necessary to determine the amounts, whose schedule has not yet been established. It is likely that this calendar should include deadlines for new allegation briefs, evidence, additional expert statements and a new oral hearing. It is estimated that the phase related to the determination of the amount, without taking into account any challenges to the awards, will not be resolved before the first quarter of 2022.

Repsol is analyzing the different actions that fit this partial award, including and foresees its challenge before the Singapore courts.

Although it is not known with certainty the amount of the eventual compensation (if any), since the litigation still has a long way and numerous pending decisions, in view of the partial award issued, Repsol, prudently, has made an estimate of the economic impacts that could be derived finally and as a whole from the litigation, having accrued the corresponding provision of 837 million euros in their financial statements as of December 31, 2019.

Additionally, on November 30, 2017 Repsol, S.A. commenced an arbitration against China Petroleum Corporation and TipTop Luxembourg S.A.R.L seeking relief from any adverse ruling on the arbitration mentioned above together with other damages yet unquantified. This procedure is based on their conduct towards Repsol during the months leading up to its acquisition of the Talisman Group.

United States of America

The Passaic River / Newark Bay lawsuit

The events underlying this litigation related to the sale by Maxus Energy Corporation (“*Maxus*”) of its former chemicals subsidiary, Diamond Shamrock Chemical Company (“*Chemicals*”) to Occidental Chemical Corporation (“*OCC*”). Maxus agreed to indemnify Occidental for certain environmental contingencies relating to the business and activities of Chemicals prior to September 4, 1986. After that (1995), Maxus was acquired by YPF S.A. and subsequently (in 1999) Repsol S.A. acquired YPF.

In December 2005, the New Jersey Department of Environmental Protection (“*DEP*”) and the New Jersey Spill Compensation Fund (together, the “*State of New Jersey*”) sued Repsol YPF S.A. (today called Repsol, S.A., hereinafter, “*Repsol*”), YPF, YPF Holdings Inc. (“*YPFH*”), CLH Holdings (“*CLHH*”), Tierra Solutions, Inc. (“*Tierra*”), Maxus and OCC for the alleged contamination caused by the former Chemicals old plant which allegedly contaminated the Passaic River, Newark Bay and other bodies of water and properties in the vicinity.

On September 26, 2012 OCC lodged a Second Amended Cross Claim (the “*Cross Claim*”) against Repsol, YPF, Maxus, Tierra and CLHH (all of which together “*the Defendants*”) demanding, among other things, that Repsol and YPF be held liable for Maxus’ debts.

Between June 2013 and August 2014, the Defendants signed different agreements with the State of New Jersey, in which they do not acknowledge liability and through certain payments in exchange for the withdrawal by the State of New Jersey of its proceedings against them. In February 2015, Repsol file a claim against OCC for the \$65 million that it had to pay to the State of New Jersey.

On April 5, 2016 the Presiding Judge decided to dismiss OCC’s suit against Repsol in full. On June 17, 2016 Maxus filed for bankruptcy with the Federal Bankruptcy Court of the State of Delaware, and also requested the stay of the Cross Claim. On October 19, 2017, the Presiding Judge upheld Repsol’s claim against OCC in full, ordering OCC to pay \$65 million plus interest and costs.

On September 14, 2018, Maxus (assuming right of ownership of the claim on behalf of OCC) and OCC filed an appeal against these rulings. At the same time, OCC filed an appeal against the claim ordering them to pay the \$65 million that Repsol had to pay to the State of New Jersey.

On June 14, 2018, the Maxus Bankruptcy Administration filed a lawsuit (“*New Claim*”) in the Federal Bankruptcy Court of the State of Delaware against YPF, Repsol and certain subsidiaries of both companies for the same claims as those contained in the Cross Claim. On February, 2019, the Federal Bankruptcy Court rejected the petitions submitted by Repsol requesting that the Court reject the New Claim from the outset, which implies that the proceedings will be ongoing.

On December 10, 2019, the bankruptcy managers of Maxus filed an Insurance Claim in Texas against Greenstone Assurance Limited (a historical captive reinsurance company of the Maxus Group and currently 100% owned by Repsol - “*Greenstone*”), claiming that this company would be required to pay Maxus compensation for the liabilities arising from the indemnity granted to OCC, by virtue of alleged insurance policies issued by Greenstone between 1974 and 1998.

Repsol maintains the view, as has been shown in the Cross Claim, that the claims made in the New Claim and in the Insurance Claim are unfounded.

(16) OTHER NON-CURRENT ASSETS

This heading mainly includes, in 2019 and 2018, accounts receivable from PDVSA in Venezuela (see Notes 21.3 and 11.3) amounting to €347 million (€317 million in 2018), deposits associated with the dismantling of *Upstream* assets (“*sinking funds*”) in Malaysia and Indonesia amounting to €142 million (€119 million in 2018), and additionally, in 2019, the reclassification to this heading of the carrying amount of those assets whose activity was suspended in Vietnam (see Note 21.3).

CURRENT ASSETS AND LIABILITIES

(17) INVENTORIES

The breakdown of "Inventories" at December 31, 2019 and 2018 is as follows:

	€ Million	
	2019	2018
Crude oil and natural gas	1,457	1,640
Finished and semi-finished products	2,778	2,426
Materials and other inventories ⁽¹⁾	362	324
TOTAL ⁽²⁾	4,597	4,390

⁽¹⁾ Includes CO₂ allowances for a total of 1,616 thousand tons valued at €45 million.

⁽²⁾ Includes inventory write-downs of €51 million and €74 million at December 31, 2019 and 2018, respectively. The write-downs recognized and reversed amounted to -€6 million and €13 million, respectively (-€55 million and €13 million in 2018).

At December 31, 2019 the balance of commodity inventories, related to trading activity, recognized at fair value less costs to sell, amounted to €433 million, and the effect of their measurement at market value represented income of €20 million. Recoverable amounts are calculated using market information and benchmarks. Specifically, forward price curves provided by the market depending on the time horizon for the transactions. The main variables used are: prices taken from official publications (Platt's, Argus, OPIS, brokers, etc.) and historic or mark-to-market premiums, if available.

In the assessment of refinery products, production costs are allocated in proportion to the selling price of the related products (iso margin method) due to the existing difficulty to recognize the conversion costs of every product.

At December 31, 2019 and 2018 the Repsol Group complied with the legal requirements regarding minimum safety stocks established under prevailing legislation (see Appendix III) through its Spanish Group companies.

(18) TRADE AND OTHER RECEIVABLES

The breakdown of this heading at December 31, 2019 and 2018 is as follows:

	€ Million	
	2019	2018
Trade receivables for sales and services (gross amount)	3,984	3,947
Provisions for impairment	(200)	(189)
Trade receivables for sales and services	3,784	3,758
Receivables from operating activities and other receivables	669	917
Receivables from operations with staff	46	41
Public administrations	281	303
Trade operation derivatives (Note 9)	168	241
Other receivables	1,164	1,502
Current tax assets	963	845
Trade and other receivables	5,911	6,105

The changes in the provisions for impairment in 2019 and 2018 were as follows:

	€ Million	
	2019	2018
Opening balance for the year	189	173
Impact of new standards	—	71
Adjusted opening balance	189	244
Provision for/(reversal of) impairment losses ⁽¹⁾	11	(21)
Changes in scope of consolidation	—	28
Translation differences	2	5
Reclassifications and other movements	(2)	(67)
Balance at year end	200	189

⁽¹⁾ It is recognized under "(Provision for)/Reversal of provisions for impairment" in the balance sheet.

(19) TRADE AND OTHER PAYABLES

Repsol had the following accounts payable classified under "Trade and other payables":

	€ Million	
	2019	2018
Suppliers	3,638	3,244
Payables to public administrations	600	538
Derivative financial instruments (Note 10)	350	250
Others	2,902	3,521
Other payables	3,852	4,309
Current tax liabilities	192	271
TOTAL	7,682	7,824

Information on the average period of payments to suppliers in Spain

The disclosures made in respect of the average period of payment for trade payables are presented in accordance with that established in applicable law.

	Days	
	2019	2018
Average period of payment to suppliers ⁽¹⁾	24	23
Ratio of transactions paid ⁽²⁾	24	24
Ratio of transactions payable ⁽³⁾	30	26
	Amount (€ Million)	
Total payments made	11,833	10,757
Total payments outstanding	625	563

⁽¹⁾ $((\text{Ratio of transactions paid} * \text{total payments made}) + (\text{Ratio of transactions payable} * \text{total payments outstanding})) / (\text{Total payments made} + \text{total payments outstanding})$.

⁽²⁾ $\Sigma (\text{Number of days of payment} * \text{amount of the transaction paid}) / \text{Total payments made}$.

⁽³⁾ $\Sigma (\text{Number of days outstanding} * \text{amount of the transaction payable}) / \text{Total payments outstanding}$.

In accordance with the transitional provisions of Law 15/2010, the maximum legal payment deadline is 60 days.

INCOME

(20) OPERATING INCOME

On the same date as these consolidated Financial Statements, Repsol published its 2019 consolidated Management Report, which includes an explanation of performance results and other aggregates. The report is available at www.repsol.com.

20.1) Sales and income from services rendered

In 2019 revenue from *Upstream* activities amounted to €4,684 million, while that of the *Downstream* segment totaled €46,325 million (€5,182 million and €46,712 million, respectively, in 2018)³⁴. In *Upstream*, income was mainly generated either from the sale of crude oil, condensed oil and LPG and natural gas, or from the provision of hydrocarbon operation services, depending on the contracts in force in each of the countries in which the Group operates. In *Downstream*, income is generated mainly from the sale of oil products (petrol, fuel oil, LPG, asphalt, lubricants, etc.), petrochemical products (ethylene, propylene, polyolefins and interim products), gas (natural gas and LNG) and electricity.

The decrease in revenue in the *Upstream* segment (-9.6%) is mainly due to lower realization prices for crude oil and gas and, to a lesser extent, to lower volumes sold, mainly in Libya (as a result of greater disruptions due to safety conditions), Canada and Southeast Asia (Malaysia, Indonesia and Vietnam). In *Downstream*, revenue dropped slightly compared to 2018 (-0.8%), and reduced revenue as a result of lower volumes of oil products sold was offset by the contribution of the new electricity generation and electricity and gas sale businesses and the international expansion in Mexico.

The distribution, by country, of revenue³⁵ from ordinary activities ("*Sales*" and "*Income from services rendered*") in 2019 and 2018 is shown below:

€ Million	2019	2018
Spain	26,175	25,332
United States	3,052	3,095
Peru	2,846	2,941
Portugal	2,611	2,673
Other	14,644	15,832
TOTAL ⁽¹⁾⁽²⁾	49,328	49,873

⁽¹⁾ The distribution by geographical area has been drawn up based on the markets to which the sales or income relate.

⁽²⁾ The distribution of the target markets is as follows: i) EU euro zone: €33,879 million (€33,514 million in 2018), ii) EU non-euro zone: €396 million (€1,066 million in 2018), and iii) Other countries: €15,053 million (€15,293 million in 2018).

This heading includes excise duties levied on hydrocarbon consumption amounting to €6,850 million and €6,295 million in 2019 and 2018, respectively.

In sales in which the Group acts as an agent, the Group only recognizes the net interest margin as revenue.

20.2) Other operating income

This heading reflects, inter alia, income recognized on the remeasurement of trade derivatives (see Note 10) and the reversal of provisions, taken to the income statement (see Note 15). It also includes operating grants amounting to €19 million and €20 million in 2019 and 2018, respectively.

³⁴ For further information, see Appendix II.

³⁵ Income is recognized based on compliance with performance obligations to customers. Income from ordinary activities represents the transfer of committed goods or services to customers for an amount that reflects the consideration to which the entity expects to be entitled in exchange for these goods and services. There are five distinct steps in income recognition: i) Identify the customer's contract(s), ii) Identify performance obligations, iii) Determine the transaction price, iv) Assign the transaction price to the different performance obligations, and v) Income recognition according to the fulfillment of each obligation. At December 31, there were no relevant performance obligations outstanding with customers.

20.3) Procurements

This heading includes the following items:

	€ Million	
	2019	2018
Purchases	36,960	38,481
Changes in inventories	(157)	(425)
TOTAL	36,803	38,056

This heading includes excise duties levied on hydrocarbon consumption mentioned in “Sales and income from services rendered”.

20.4) (Provision for)/Reversal of provisions for impairment

These headings include the following items:

	€ Million	
	2019	2018
Provision for impairment of assets (Notes 11.3, 18, 21)	(5,746)	(1,241)
Income from the reversal of provisions for impairment (Note 21)	424	175
TOTAL	(5,322)	(1,066)

In 2019, this relates mainly to provisions for the impairment of gas-producing assets in the US and Canada in the *Upstream* segment as a result of the new price paths assumed and the reversal in the Wholesaler and Trading Gas business in North America due to the expected change in margins, details of which are provided in Note 21. It also includes impairment losses on unsuccessful exploratory investments (see Note 3.4.2) amounting to €118 million, recognized in the normal course of operations (in addition to the annual calculation of the recoverable amount of the assets).

In 2019 and 2018 it also includes the provision for credit risk impairment of trade and other receivables and of other non-current assets, mainly in Venezuela, in the amount of €129 million and €300 million, respectively. For further information, see Notes 11.3 and 21.3.

20.5) Personnel expenses

“Personnel expenses” includes the following items:

	€ Million	
	2019	2018
Remuneration and other	1,493	1,456
Social security costs	453	418
TOTAL	1,946	1,874

20.6) Exploration expenses

Hydrocarbon exploration expenses in 2019 and 2018 amounted to €916 million and €627 million, of which €120 million and €227 million are recognized under “Amortization and depreciation of non-current assets” and €690 million and €298 million under “(Provision for)/Reversal of provisions for impairment” in 2019 and 2018, respectively. Note 3 explains the Group’s accounting policies in relation to exploration activity.

The geographical distribution of the costs taken to the income statement in respect of exploration activities (see Note 3) is as follows:

	€ Million	
	2019	2018
Europe	134	213
America	143	143
Africa	111	146
Asia	403	108
Oceania	125	17
TOTAL	916	627

For more information, see the information on hydrocarbon exploration and production activities (non-audited information) at www.repsol.com.

20.7) Gains/(losses) on disposal of assets

No significant assets were disposed of in 2019 or 2018. These headings include translation differences recognized in the income statement for the abandonment of assets.

20.8) Transport and freights and other operating expenses

The higher costs under "*Transport and freight*" reflect the rise in prices for ship charters.

Moreover, "*Other operating expenses*" includes the following items:

	€ Million	
	2019	2018
Operator expenses ⁽¹⁾	613	605
Services of independent professionals	537	506
Leases ⁽²⁾	170	307
Taxes ⁽³⁾	433	423
Taxes on production	154	159
Other	279	264
Repair and upkeep ⁽⁴⁾	272	271
Measurement of trade derivatives ⁽⁵⁾	305	126
Consumption of CO ₂ allowances ⁽⁶⁾	325	116
Others ⁽⁷⁾	2,100	1,342
TOTAL	4,755	3,696

Note: In order to minimize transport costs and optimize the Group's logistics chain, oil product exchanges of a similar nature are carried out with other companies in different geographical locations. These transactions are not recognized in the income statement for the year as individual purchases and sales, but rather any economic differences are recognized at their net amount.

- ⁽¹⁾ Includes, among other items, the cost of agency services at the facilities of Compañía Logística de Hidrocarburos CLH, S.A., product bottling, storage, loading, transportation and dispatch services.
- ⁽²⁾ In 2019, it included expenses for short-term and low-value leases (€127 million) and for variable payments (€43 million).
- ⁽³⁾ They correspond to taxes other than income tax (see Note 23). Taxes on hydrocarbon production in *Upstream* activities have been paid mainly in Libya, Algeria and Peru. The other taxes reflect mainly local taxes. For further information on taxes paid, please refer to section 6.7 of the Consolidated Management Report (www.repsol.com) and the report on payments to public authorities published by the Company, which is also available at www.repsol.com.
- ⁽⁴⁾ Relates to repair, upkeep and maintenance activities carried out mainly at the Group's industrial complexes.
- ⁽⁵⁾ Relates mainly to derivatives arranged in trading activities involving crude oil, gas, oil products and electricity (see Note 10).
- ⁽⁶⁾ See Note 31.2.
- ⁽⁷⁾ Includes, among others, the provisions (see Note 15). The increase in 2019 is explained, among others, by the provision to cover litigious risks (see Note 15).

The decrease in "*Leases*" in 2019 is due to the application of new criteria for recognizing rights of use arising from leases in accordance with IFRS 16; the expense relating to the leases affected is now reflected as amortization of rights of use and as a financial expense (see Notes 13 and 22).

"*Consumption of CO₂ allowances*" increased as a result of the rise in prices for CO₂ emission allowances and the inclusion of the Viesgo businesses (see Note 31.2).

(21) ASSET IMPAIRMENT

21.1) Asset impairment test

The Group has assessed the recoverable amount of its cash-generating units as per the methodology described in Note 3 and the scenarios consistent with its new vision of the market, the expected environment and the new strategic approach. The main assumptions are described below:

a) Price trend:

In 2019, medium- and long-term dynamics in the oil and gas markets have been consolidated, leading to revised expectations for crude oil prices and, especially, gas prices: in particular, the abundant gas production in North America associated with unconventional fields (shale gas, gas associated with tight oil), new gas discoveries in other parts of the world, new trends in the global gas markets (development of LNG projects and less demand, especially in China) and in the oil market (increase in production and world reserves despite OPEC's supply-restricting policies).

In addition, the general nature of the public policies and commitments aimed at the decarbonization of the economy and, therefore, at restricting the use of fossil fuels and the development of new alternative technologies that drive the energy transition and will mean a reduction in the demand for hydrocarbon products in the medium and long term should be noted.

This will require companies to have a strategy in place to adapt to the energy transition that Repsol, following the analysis of its Board of Directors, has already begun by assuming decarbonization obligations that are in line with the climate change objectives of the Paris Agreement and the UN Sustainable Development Goals³⁶.

It is against this new backdrop that the adaptation of the future crude oil and gas price forecasts for the 2019 impairment test must be understood:

	2020	2021	2022	2023	2024	2025	2030	2035	Subsequent
Brent (\$/ barrel)	65	69	70	71	72	74	81	87	87
WTI	59	65	67	68	69	71	78	84	Brent -3 \$/bbl
HH (\$/ Mbtu)	3	3	3	3	3	3	4	5	+2%
CO ₂ (\$/Tn)	28	30	33	35	38	40	50	60	(1)

(1) Further growth to reach \$70/ton by 2040. The assumptions relate to the prices of emission allowances under the current EU ETS mechanism. Specific assumptions have been developed for other countries with emission allowances or CO₂ taxes.

This new price trend for crude oil and gas is in line with the IEA's Sustainable Development scenarios (*World Economic Outlook 2019*, published in November 2019) -which has the most complete models and has carried out the most exhaustive work to develop scenarios that would allow a universal supply of clean and affordable energy compatible with the reduction in CO₂ emissions required by COP21-, the main assumptions and conclusions of which regarding demand and supply dynamics coincide with those reached by Repsol as indicated above.

b) Discount rates :

	2019	2018
UPSTREAM ⁽¹⁾		
Latin America-Caribbean	7.5% - 37.6%	7.7% - 37.6%
Europe, Africa and Brazil	7.3% - 13.1%	6.9% - 11.8%
North America	8.0%	8.2% - 8.3%
Asia and Russia	7.6% - 10.1%	8.2% - 10.7%
DOWNSTREAM ⁽²⁾	4.2% - 9.0%	3.7% - 9.3%

(1) Discount rates in US dollars.

(2) Discount rates in euros and US dollars.

c) Impairment recognized

In 2019 provisions have been recognized for the impairment of the Group's assets in these balance sheet headings:

€ Million	Notes	Total
Goodwill	12 and 21	868
Other intangible assets ⁽¹⁾	21	245
Property, plant and equipment ⁽¹⁾	21	3,955
Investments accounted for using the equity method ⁽²⁾	14 and 21	396
Onerous charges	15	73
Deferred tax assets	23	574

(1) It does not include impairment losses on unsuccessful exploratory investments (see Note 3.4.2) amounting to €118 million, recognized in the normal course of operations (apart from the annual calculation of the recoverable amount of the assets).

(2) Net of tax.

Provisions, net of reversals, amounted to €6,111 million before tax (€4,867 million after tax); mainly corresponding to extraordinary write-offs arising from the impairment test at the end of the year under the new price scenarios and geopolitical environment described in the previous section (€4,849 million after tax).

Upstream assets

The Group has recognized net impairment losses, before tax, on its *Upstream* assets³⁷ amounting to -€5,694 million, which mainly affect:

- North America (-€3,572 million)³⁸: mainly in gas production assets in the US and Canada as a result of lower expected gas prices and the review of the business plans for the assets to respond to the new environment.

³⁶ See Note 2.4 and section 2.4 in the 2019 Consolidated Management Report

³⁷ This relates to the impairment losses recognized under "Goodwill", "Other intangible assets", "Property, plant and equipment" and "Investments accounted for using the equity method" before tax.

³⁸ In 2018, impairment losses in North America amounted to -€479 million as a result of reduced production volumes and lower prices.

- Latin America (-€414 million)³⁹: mainly in Trinidad and Tobago as a result of lower gas prices, and in Colombia as a result of delays on the part of the operator in the development plans.
- Europe, Africa and Brazil (-€209 million): mainly in Spain due to expectations of reduced activity and in Algeria due to lower gas prices.
- Exploratory and development assets (-€786 million): mainly in Vietnam, Algeria and Papua New Guinea. The new price scenarios do not allow a favorable conclusion on the commercial viability of certain exploratory licenses and drilling capitalized, some of which are also subject to geopolitical uncertainties.
- Goodwill (-€793 million): associated with the business combination of ROGCI (see Note 12).

Also, deferred tax assets allocated to this segment were reduced by -€470 million (see Note 23).

The recoverable amount of the assets impaired during the period amounted to €11,663 million.

Downstream assets

An impairment loss before tax of €229 million (net of the provision for onerous charges) recognized for the Gas & Trading business in North America (mainly the Canaport regasification plant and the gas pipelines for transporting gas in North America) was reversed due to the expected changes in the net interest margins for gas.

Deferred tax assets have also been reduced by -€104 million (see Note 23).

In the rest of the Downstream segment, the new scenarios assumed, in the context of decarbonization and energy transition envisaged, consider an environment marked by a reduction in the demand for oil products and fuels and an increase in the expected cost of CO₂ emissions. The quality of the assets and the capacity of the business models to adapt to the new strategic approach mean that, even in the new and demanding scenarios, no significant impairment losses were observed during the year.

21.2) Sensitivities

A change in the estimated future price curves and discount rates used would affect the amount of the impairment of the Repsol Group assets. The principal sensitivities to these variations without taking into account the rebalancing of other related variables or the possible adjustments of the operative plans, which would allow the negative impact of the above mentioned variations to be mitigated, are indicated in the table below:

	Increase (+) / decrease (-)	€ Million	
		Operating income	Net income
Change in hydrocarbons prices and production ⁽¹⁾	+10% (prices) / +5% (production)	2,597	2,390
	-10% (prices) / -5% (production)	(3,261)	(2,978)
Changes in margins and volumes ⁽²⁾	+5%	108	82
	-5%	(761)	(570)
Change in discount rate	+100 p.b.	(780)	(646)
	-100 p.b.	728	604

⁽¹⁾ Relates to the productive assets in the *Upstream* segment.

⁽²⁾ Relates primarily to the industrial businesses in the *Downstream* segment.

21.3) Geopolitical risks⁴⁰

Repsol is exposed to risks arising in countries that may present specific economic, social and political circumstances that may have a negative impact on its businesses (unexpected regulatory changes; highly volatile exchange rate; high inflation; possibility of economic and financial crises or political instability or social tensions and public unrest, etc.) and that may have a negative impact on its business.

According to the ratings in the *Country Risk Rating of IHS Global Insight* and the *Country Risk Score of the Economist Group*, the

³⁹ In 2018, impairment losses in Latin America corresponded to assets in Venezuela (see Notes 14 and 21) due to the increase in discount rates as a result of changes in country risk indicators.

⁴⁰ When assessing its assets for the impairment test, Repsol considers the geopolitical risks it is exposed to by estimating cash flows or calculating its discount rates.

Repsol Group is exposed to a particular geopolitical risk in Venezuela, Libya and Algeria. In addition, Vietnam has been added because the activities have been affected by the territorial conflict in the South China Seas.

Venezuela

Repsol's equity exposure⁴¹ in Venezuela at December 31, 2019 amounted to €239 million, which includes mainly the financing granted to its Venezuelan subsidiaries^{42,43} (see Note 9). At December 31, 2018 this line item amounted to €456 million. This reduction is explained by trade payables, as well as the revaluation of the credit risk for expected loss relating to PDVSA's debts to Group entities (see Notes 11 and 16).

In 2019, the situation of political instability, economic recession (GDP⁴⁴ dropped by 40% in 2019) and inflation⁴⁵ (7.374%⁴⁶ in 2019 and it is expected to be 3,000% in 2020) continues and, therefore, the State of Economic Emergency has been extended. Oil production has declined significantly in recent years. There was a significant devaluation of the Venezuelan currency against the euro (€52,231/BsS compared to €730/BsS at December 31, 2018, the SIMECA exchange rate) with no significant impact on the Group's financial statements, since the functional currency of its subsidiaries in the country is the US dollar, except in the case of Quiriquire Gas⁴⁷ (see Note 14).

In 2019 new sanctions were imposed against Venezuela. In particular, on January 28, 2019 the US extended the sanctions against PDVSA by including it on the "Specially Designated Nationals and Blocked Persons List" ("SDN List"). In addition, on April 17, 2019, the United States also included the Central Bank of Venezuela on the SDN List. This implies a prohibition for "US Persons"⁴⁸ to transact with PDVSA, the Central Bank of Venezuela and/or any of its controlled companies (interest greater than or equal to 50%) and an obligation to block their assets. Finally, on August 5, 2019, the United States issued the Executive Order on Blocking Property of the Government of Venezuela, ordering US Persons to freeze all assets of the Government of Venezuela and of any entity owned, controlled or acting on behalf of the Government of Venezuela that are in their possession or within US territory. The US has granted certain time limits to facilitate the orderly termination of transactions by granting various general licenses. Repsol has adopted the measures necessary to continue its activity in Venezuela, including the periodic reception of crude oil in payment of debts, with full respect for international regulations regarding sanctions, and is constantly monitoring its development and, therefore, any possible effects it may have on the aforementioned activities. These updates have not had a significant impact on the Group.

On January 7, 2019, Presidential Decree No. 35 was published, establishing that taxpayers who carry out operations in foreign currency must determine and pay their taxes in foreign currency (or cryptocurrency), pending regulatory development. The regulation entered into force on January 1, 2019 and affects the determination and payment of all national taxes. The main impact recognized in 2018 was the cancellation of deferred tax assets in companies accounted for using the equity method. In the future, the Decree could simplify the determination of income tax and eliminate the negative impact on this tax as a result of from future devaluations.

The Group has assessed the recoverability of its investments and the credit risk on accounts receivable from PDVSA. As a result, the Group has recognized provisions for the credit profile of PDVSA and for the deterioration of the business environment in

⁴¹ Equity exposure relates to net consolidated assets exposed to own risks of the countries reported.

⁴² Repsol holds a loan with Cardón IV, which matures annually and that can be extended by the shareholders (Repsol and Eni), which has therefore been considered part of the net investment of this company.

⁴³ In October 2016 Petroquiriquire, S.A., Repsol and PDVSA signed a range of agreements to shore up the financial structure of the mixed-ownership company and enable it to implement its Business Plan. The agreements involved (i) the provision by Repsol of a credit facility for up to \$1,200 million, backed by a guarantee given by PDVSA, to be used to pay past dividends owed to Repsol and for Petroquiriquire's capital and operating expenditures; and (ii) a commitment given by PDVSA to pay for hydrocarbon production of the mixed-ownership company via transfer to Petroquiriquire, S.A. of payments arising from crude oil sale contracts to off-takers or through outright cash payments in an amount sufficient for the mixed-ownership company to meet its capital and operating expenditures not covered by the financing from Repsol, and to pay Repsol's dividends generated in each financial year and its debt service obligations with Repsol. The financing granted by Repsol and the commitments assumed by PDVSA are governed by the Laws of the State of New York, and any disputes that should arise shall be submitted to arbitration in Paris in accordance with the rules of the International Chamber of Commerce. Drawdowns under the credit facility are subject to compliance by Petroquiriquire and PDVSA of certain conditions precedent, and the terms and conditions include the covenants, breach clauses and acceleration or early termination clauses that are customary in such transactions. Breach by PDVSA of its obligations under the guarantee, if there is a default by Petroquiriquire, could enable PDVSA's creditors and bondholders to declare default and acceleration of the rest of its financial debt. In addition, the agreement includes other elements such as a mechanism for offsetting of reciprocal debts between Petroquiriquire, S.A. and PDVSA. At December 31, 2019, drawdowns for this credit facility amounted to \$831 million.

⁴⁴ Source: Estimate from the International Monetary Fund.

⁴⁵ The Central Bank of Venezuela has not officially released a cumulative inflation figure since 2016.

⁴⁶ National Price Index of the National Assembly (INPCAN).

⁴⁷ The reference currency for the operating income and expenses of Quiriquire Gas is the bolivar (its investment is zero, so any effect arising from the translation of the bolivar to the euro is not significant).

⁴⁸ "US Persons" will be understood as any US citizen or permanent foreign resident (green card holders), regardless of where they are located; companies organized under the laws of the US (including branches located abroad and any company controlled by a "US Person"); and any person that is physically located in US territory.

Venezuela, which affects the value of the financing instruments and accounts receivable from PDVSA (-€97 million)⁴⁹ as well as the value of the investments accounted for using the equity method (-€83 million).

Libya

Repsol's equity exposure in Libya as of December 31, 2019 amounts to about €327 million (including primarily property, plant and equipment at that date).

Repsol operates in Libya since the 1970s when it started exploring in the Sirte Basin. As of December 31, 2019, Repsol has acreage on two contractual areas (with exploration and production activities) located in the Murzuq basin in the Sahara desert and whose proved reserves amount to 77.3 million barrels of oil equivalent.

The uncertainty regarding Libya's political future continues following the clashes for control over Tripoli between General Haftar's Libyan National Army (LNA) and the forces loyal to the GNA (the official government established in Tripoli and backed by the United Nations). The deterioration in the security situation continues to affect the prospects of its oil industry, though the country has recovered part of its oil production and exports.

As a consequence of the security conditions, during 2019 there have been intermittent shutdowns of production in Libya. Repsol's net crude oil production in 2019 amounted to 29 thousand barrels of oil per day (vs. 35.7 thousand barrels of oil per day during the same period in 2018). Shutdowns in production continues in 2020.

Algeria

Repsol's equity exposure in Argelia at December 31, 2019 amounted to about €673 million (including mainly property, plant and equipment at that date). This was lower than at December 31, 2018 after the impairment recognized in profit and loss (see Note 21.1).

In Algeria, Repsol has three blocks in the production/development phase (Reggane Nord, block 405a (with the MLN, EMK and Ourhoud licenses) and Tin Fouyé Tabankort (TFT)). It also had a block in the exploration phase (S.E. Illizi), the license for which ended on December 31, 2019.

Net average production in Argelia in 2019 came to 31.5 thousand barrels of oil equivalent per day (21.4 kboe in 2018) from Reggane Nord, block 405a and TFT.

The estimated net proved reserves at December 31, 2019 amount to 49.6 million barrels of oil equivalent. Around 34% of the net proved reserves refer to the gas production project at Reggane, which is located in the Algerian Sahara in the Reggane basin. Repsol holds a 29,25% interest in the consortium that is to develop the project, alongside the Algerian state-owned company Sonatrach (40%), Germany's RWE Dea AG (19.5%), and Italy's Edison (11.25%). The net production of the Reggane project in 2019 amounted to 8.2 thousand barrels of oil equivalent per day.

The social protests that began on February 22, 2019 led to the resignation of President Abdelaziz Buteflika. Given the peaceful nature of most of these protests so far, they are not expected to have a significant impact at the operational level on the activities of the Oil & Gas industry, beyond a slowdown in the decision-making process, as a result of the current transition period and the institutional reorganization that is taking place following the elections called for December 12, 2019, the winner of which was former Prime Minister Abdelmayid Tebune.

Vietnam

Repsol owns mining rights in Vietnam on thirteen blocks, distributed in six production-sharing contracts (PSC): one in production over a net area of 152 km², (*Thang Long JOC*), one under development over 1,236 km² (*Ca Rong Do*) and four in the exploration phase, over a net surface area of 72,248 km² (among them blocks 135-136/03). Net average production in 2019 came to 5 thousand barrels of oil equivalent per day (6.5 barrels of oil equivalent per day in 2018). Net proved reserves at December 31, 2019 amounted to 1.9 million barrels of oil equivalent per day. Equity exposure of Repsol in Vietnam at December 31, 2019 amounts to about €602 million, down from €951 million in 2018, following the impairment loss recognized in the income statement (see Notes 16 and 21.1).

In March 22, 2018 Repsol received instructions from PetroVietnam to refrain, for the time being, from performing the programmed activities as part of the Ca Rong Do development project, located in the South China Sea. Furthermore, in July

⁴⁹ Recognized under "Provision for/(Reversal of) provisions for impairment" (see Note 20.4) and "Impairment of financial instruments" (see Note 21) in the income statement.

2017, PetroVietnam instructed Repsol to stop CKN-1X drilling activities in exploratory blocks 135-136/03, also located in the South China Sea. The duration of the suspension of activity has yet to be determined, and the Group is working with PetroVietnam to find actions that can be taken to satisfy the interests of both parties, allowing them to reach an amicable solution to the conflict. Repsol has initiated an arbitration process in defense of its rights and considers that it has solid legal grounds to claim compensation for the damages that could arise from this situation, as well as good prospects of success, both in the claim and in the recovery of the damages.

BREXIT

In the referendum held on June 23, 2016, the United Kingdom approved its exit from the European Union. After the absolute majority victory of the conservative party in the elections on December 12, 2019, Parliament voted in favor of the draft bill of the withdrawal agreement, which was finally approved. The UK left the EU on January 31, 2020. The exit from the EU is the first step in a process that will last from one to three years, during which the new government will have to try to reach a new trade agreement with the EU.

The European Union Emission Trade System (EU ETS)⁵⁰ is being affected by BREXIT, due to the fact that the European Commission decided to suspend any free allocation of benefits involving the United Kingdom. The economic impact of this is still unknown.

With regard to the extraction, transport and sale of hydrocarbons, no substantial changes are expected, as the British government has always had sovereignty and control over the key aspects for the sector, such as the licensing of mineral concessions and the tax framework for the activities of oil companies. The messages received by the sector during the Brexit process is one of regulatory stability.

The Group's exposure in the United Kingdom is limited mainly to its interest in Repsol Sinopec Resources UK Limited (RSRUK), which operates a mature business engaging in hydrocarbon exploration and production activities and whose functional currency is the US dollar, meaning that even under the most extreme Brexit scenarios no significant risks have been detected.

(22) FINANCIAL RESULT

The financial result has worsened mainly due to the comparison with the significant gains obtained in 2018 from specific positions in US dollars in a context of favorable developments in the exchange rate, mitigated by lower impairment losses on financial instruments in 2019 (in 2018 financial assets exposed to risks in Venezuela were impaired).

The breakdown of financial income and expenses in 2019 and 2018 is as follows:

€ Million	2019	2018
Financial income ⁽¹⁾	148	177
Financial expenses	(391)	(407)
Net interest	(243)	(230)
By interest rate	59	40
By exchange rate	98	87
Other positions	59	73
Change in fair value of financial instruments ⁽²⁾	216	200
Exchange gains/(losses) ⁽³⁾	(27)	467
Impairment of financial instruments ⁽⁴⁾	6	(370)
Adjustment for provision discounting	(105)	(94)
Interim interest	78	72
Lease liabilities	(185)	(133)
Gains/(losses) on disposal of financial instruments	—	(10)
Others	(41)	(75)
Other financial income and expenses	(253)	(240)
FINANCIAL RESULT	(301)	(173)

⁽¹⁾ Includes interest income from financial instruments valued at amortized cost in the amount of €146 million (€176 million in 2018).

⁽²⁾ Includes the results from the valuation and settlement of derivative financial instruments (see Note 10). "Other provisions" includes the results from the settlement of derivatives on treasury shares (see Note 7.2).

⁽³⁾ Includes the exchange gains and losses generated by the valuation and settlement of monetary items in foreign currency. The improvement compared to 2018 is explained by exchange differences arising from the impact of changes in the exchange rate of the dollar in the period on financing instruments.

⁽⁴⁾ In 2018 this includes mainly impairment losses on financing granted to entities accounted for using the equity method in Venezuela and other related accounts receivable (see Note 21.3).

⁵⁰ Under the multilateral trading system for greenhouse gas emissions, each Member State has a National Emission Allowance Allocation Plan that specifies a basket of greenhouse gas emissions, so that in order to comply with the Plan, companies can reduce their emissions by adjusting to the allowances allocated free of charge or turning to the market to cover their deficit.

(23) TAXES

23.1) Applicable taxes

With regard to taxation and, particularly, income tax, the Repsol Group is subject to the legislation of several tax jurisdictions due to the broad geographic mix and the relevant international nature of the business activities carried out by the companies comprising the Group.

For this reason, the Repsol Group's effective tax rate is shaped by the breakdown of earnings obtained in each of the countries where it operates and, on occasion, by the taxation of said profits in more than one country (double taxation).

a) In Spain

Most of the entities resident in Spain for tax purposes are subject to taxation under Spain's consolidated tax regime. Under this regime, the companies comprising the tax group jointly determine the Group's taxable profit and tax liability, which is then allocated to these companies following the criteria established by the ICAC (acronym in Spanish for the Audit and Accounting Institute) in relation to the recognition and determination of individual corporate tax liabilities.

Repsol, S.A. is the parent of Consolidated Tax Group 6/80, which comprises all of the companies resident in Spain that are at least 75%-owned, directly or indirectly, by the parent and that meet certain prerequisites. The aforementioned Consolidated Tax Group was composed of 65 companies in 2019, the most significant of which are: Repsol, S.A., Repsol Petróleo, S.A., Repsol Trading, S.A., Repsol Química, S.A., Repsol Butano, S.A., Repsol Exploración, S.A., Repsol Comercial de Productos Petrolíferos, S.A. and Repsol Electricidad y Gas, S.A.

Elsewhere, Petróleos del Norte, S.A. (Petronor) is the parent of Consolidated Tax Group 02/01/B, to which the special regional tax regulations of Vizcaya for corporate income tax purposes is applied.

The rest of the companies resident in Spain for tax purposes that are not included in either of the above tax groups determine their income tax individually.

The Spanish companies have been taxed at the general rate of 25% in 2019, regardless of whether they pay tax as part of a tax group or individually. Exceptionally, Repsol Investigaciones Petrolíferas, S.A., which files its taxes on an individual basis under the special hydrocarbon regime, is taxed at 30%, and the Petronor group, which applies the regime of Vizcaya, is taxed at 24%.

b) Other countries

The rest of the Group companies are subject to taxation in each of the countries in which they do business, applying the prevailing income tax rate under applicable local tax regulations. Group companies in some countries are also subject to a levy on minimum presumptive income in addition to income tax.

In turn, the Group companies resident in Spain that conduct some of their business in other countries are also subject to prevailing income tax in those countries in respect of the profits generated outside Spain. This is the case, for example, with the permanent establishments of the Spanish companies that carry out hydrocarbon exploration and production activities in other countries (including Libya, Algeria, Peru and Ecuador).

Below is a list of the statutory income tax rates applicable in the Group's main tax jurisdictions:

Country	Tax rate	Country	Tax rate
Algeria ⁽¹⁾	38%	Norway	78%
Bolivia	25%	The Netherlands	25%
Canada ⁽²⁾	27%	Peru	29,5%
Colombia	33%	Portugal	22,5% - 31,5%
Ecuador	22%	United Kingdom	40%
United States ⁽³⁾	21%	Singapore	17%
Indonesia	32,5% - 48%	Trinidad and Tobago	55% - 57,2%
Libya	65%	Venezuela	34% (Gas) and 50% (Oil)
Malaysia	38%	Vietnam	32% - 50%

⁽¹⁾ Plus tax on exceptional profits (TPE).

⁽²⁾ Federal and provincial rate.

⁽³⁾ Does not include state taxes.

23.2) Accrued income tax expense

The table below shows how the income tax expense accrued for accounting purposes in 2019 and 2018 was calculated:

	€ Million	
	2019	2018
Current tax for the year	(948)	(1,028)
Adjustments to current tax ⁽¹⁾	(184)	(178)
Current income tax (a)	(1,132)	(1,206)
Deferred tax for the year	979	(135)
Adjustments to deferred tax ⁽²⁾	(435)	(45)
Deferred income tax (b)	544	(180)
Income tax (expense)/income(a+b)	(588)	(1,386)

⁽¹⁾ Includes changes in tax provisions amounting to -€85 million and other current tax adjustments amounting to -€99 million.

⁽²⁾ Includes the derecognition of deferred tax assets amounting to -€574 million and other deferred tax adjustments amounting to €139 million.

The reconciliation of "Income tax expense" recognised and the expense that would result from the application of the nominal tax rate existing in the country of the parent company (Spain) to the net income before tax and investees is as follows:

	€ Million	
	2019	2018
Net income before tax	(3,201)	3,333
Net income from investments accounted for using the equity method	351	1,053
Net income before tax and before considering the net income of companies accounted for using the equity	(3,552)	2,280
General nominal income tax rate in Spain	25 %	25 %
Income tax (expense)/income at the general nominal income tax rate in Spain	888	(570)
Income/(expense) taxed at different nominal rates than the general Spanish rate	(385)	(543)
Non-deductible expenses ⁽²⁾	(620)	(173)
Mechanisms to avoid double taxation ⁽¹⁾	116	78
Tax credits and incentives ⁽³⁾	67	38
Revaluation deferred taxes ⁽⁴⁾	(536)	112
Income tax risk provisions	(85)	(214)
Other items	(33)	(114)
Income tax (expense)/income	(588)	(1,386)

⁽¹⁾ Includes mechanisms to prevent international and internal double taxation, whether in the form of exemptions, tax relief and tax credits.

⁽²⁾ Corresponds mainly to accounting provisions that are not tax deductible (in 2019 the most noteworthy were those for impairment of assets recognized described in Note 21).

⁽³⁾ Mainly relates to tax credits in Spain for capitalization, R&D and other.

⁽⁴⁾ Includes the derecognition of deferred tax assets (€574 million in 2019) that have not passed the recoverability test in the new scenarios of lower oil and gas prices used in calculating the recoverable amount of the assets (see Note 23.3).

23.3) Deferred taxes

The Group presents deferred tax assets and liabilities on a net basis in the same taxable entity. The breakdown of the deferred tax assets and deferred tax liabilities by underlying concept recognized in the accompanying balance sheet is shown below:

€ Million	2019	2018
Losses, tax credits and similar benefits not yet used	3,193	3,671
Amortization differences for tax and accounting purposes	(1,648)	(2,688)
Provisions for decommissioning fields (non-deductible)	617	712
Staff and other non-deductible provisions	555	593
Other deferred taxes	507	575
Total deferred tax	3,224	2,863
Provisions for contingencies related to income tax ⁽¹⁾	(1,549)	(1,307)
Net deferred tax and other taxes	1,675	1,556

⁽¹⁾ The changes in provisions for contingencies related to income tax is as follows: (i) provisions/reversals charged to profit or loss, -€85 million; (ii) first-time application of IFRIC 23, -€79 million (see Note 3.2.1); (iii) reclassifications, €82 million; and (iv) translation and other differences, €4 million.

The tax assets recognized corresponding to tax losses and tax loss carryforwards amount to €3,193 million and correspond mainly to:

Country	€ Million	Legal expiry	Estimated recoverability
Spain	1,555	No time limit	In less than 10 years
United States	1,042	20 years	Mostly in 10 years
Canada	326	20 years	Mostly in 10 years
Other	270	-	-
Total	3,193		

Below is a breakdown of changes in deferred tax:

€ Million	2019	2018
Opening balance for the year	2,863	3,006
Impact of the new standards (Note 3.2.1)	13	91
Adjusted opening balance	2,876	3,097
Income (expense) in income statement	550	(190)
Income (expense) in equity	(7)	20
Translation differences or balances in foreign currency	(41)	39
Other items	(154)	(103)
Balance at year end	3,224	2,863

The Repsol Group only recognizes deferred tax assets insofar as it is deemed probable that the entities (individually or on a consolidated basis) that have generated them will have sufficient taxable income in the future against which they can be utilized.

At each reporting date, the recognized deferred tax assets are reassessed to verify that they still qualify for recognition and they are considered to be recoverable in the future, and the appropriate adjustments are made on the basis of the outcome of the analyses performed. These analyses are based on: (i) the construction of assumptions to analyze the existence or otherwise of sufficient earnings for tax purposes that might offset such tax losses based on the approach used to ascertain the presence of indications of impairment in its assets (see Note 3); (ii) the assessment of earnings estimates for each entity or tax group in accordance with their individual business plans and the Group's overall strategic plan; and (iii) the statute of limitations period and other utilization limits imposed under prevailing legislation in each country for the recovery of the tax credits.

In this regard, in 2019 the new scenarios of lower crude oil and gas prices determined for the asset impairment test made it difficult to justify the full recovery in the short/medium term of certain deferred tax assets associated with the impaired assets in North America (see Note 21) and, therefore, the Group has reduced the deferred tax assets recognized by €574 million.

The Group has deferred tax assets not recognized of €3,885 million and €3,390 million at 2019 and 2018, respectively.

The Group has deferred tax liabilities not recognized of €95 million and €94 million at year-end 2019 and 2018, respectively. This mainly relates to taxable temporary differences associated with investments in subsidiaries, associates and permanent establishments that qualify for the exemption provided for under IFRS.

23.4) Government and legal proceedings with tax implications

In accordance with prevailing tax legislation, tax returns cannot be considered final until they have been inspected by the tax authorities or until the inspection period in each tax jurisdiction has elapsed.

The years for which the Group companies have their tax returns open to inspection in respect of the main applicable taxes are as follows:

Country	Years	Country	Years
Algeria	2014 - 2018	Malaysia	2014 - 2018
Australia	2014 - 2018	Norway	2016 - 2018
Bolivia	2013 - 2018	The Netherlands	2017 - 2018
Canada	2013 - 2018	Papua New Guinea	2015 - 2018
Colombia	2013 - 2018	Peru	2014 - 2018
Ecuador	2015 - 2018	Portugal	2015 - 2018
Spain	2015 - 2018	United Kingdom	2012 - 2018
United States	2015 - 2018	Singapore	2014 - 2018
Indonesia	2013 - 2018	Trinidad and Tobago	2014 - 2018
Libya	2011 - 2018	Venezuela	2012 - 2018

Whenever discrepancies arise between Repsol and the tax authorities with respect to the tax treatment applicable to certain operations, the Group acts with the authorities in a transparent and cooperative manner in order to resolve the resulting controversy, using the legal avenues available with a view to reaching non-litigious solutions. However, in this fiscal year, as in

prior years, there are administrative and legal proceedings with tax implications that might be adverse to the Group's interest and that have given rise to litigious situations that could result in contingent tax liabilities. Repsol believes that it has acted lawfully in handling the foregoing matters and that its defense arguments are underpinned by reasonable interpretations of prevailing legislation, to which end it has lodged appeals as necessary to defend the interests of the Group and its shareholders.

It is difficult to predict when these tax proceedings will be resolved due to the extensive appeals process. Based on the advice received from in-house and external tax experts, the Company believes that the tax liabilities that may ultimately derive from these proceedings will not have a significant impact on the accompanying Financial Statements.

As a general rule, the Group recognizes provisions for tax-related proceedings that it deems it is likely to lose and does not recognize provisions when the risk of losing the case is considered possible or remote. The amounts to be provisioned are calculated on the basis of the best estimate (see Note 3) of the amount needed to settle the lawsuit in question, underpinned, among others, by a case-by-case analysis of the facts, the legal opinions of its in-house and external advisors and prior experience in these matters.

In view of the uncertainty generated by the materialization of existing tax risks associated with litigation and other tax contingencies, the Group has recognized provisions that are considered adequate to cover the aforementioned risks. At December 31, 2019, the Group recognized €1,549 million relating to uncertain income tax positions (€1,390 million at December 31, 2018). In addition, it recognized other tax provisions amounting to €131 million (€83 million at December 31, 2018), which are presented under "Other provisions" in Note 15.

At December 31, the main tax-related proceedings concerning the Repsol Group were as follows:

Bolivia

YPFB Andina, S.A. is involved in a lawsuit regarding the deductibility of royalty payments and hydrocarbon shares from the Company's income tax. This lawsuit is currently awaiting a ruling at second instance. The Company believes, despite the ruling handed down at first instance in 2019, that its position is expressly supported by law.

Brazil

Petrobras, as operator of the Albacora Leste, BMS 7, BMES 21 and BMS 9 consortia (in which Repsol has a 10%, 37%, 11% and 25% interest, respectively) received tax assessments (IRRF, CIDE and PIS/COFINS) and for 2008 to 2012, in connection with payments to foreign companies for charter contracts for exploration platforms and related services used in the blocks. All of the proceedings have been appealed and are either in the administrative (2009-2012) or judicial review process.

Likewise, Repsol Sinopec Brasil received notification of assessments for the same items and taxes (2009 and 2011), in connection with payments to foreign companies for contracts for exploration charters and related services used in blocks BMS 48, BMS 55, BMES 29 and BMC 33, in which Repsol Sinopec Brasil is the operator. The assessments have been appealed either through the administrative review process (2011) or judicial review process at first instance (2009). The Company considers that its actions are in accordance with the law and are in line with general practice in the sector.

These lawsuits are currently limited to CIDE and PIS/COFINS, after the company availed itself of a program authorized by Law 13,586/17, which made it possible to reduce the amount in dispute regarding personal income tax (IRRF) through the retroactive application of the price determination percentages (split) contained in this Law, abandoning the lawsuits in progress and without any penalties being applicable.

Canada

The Canadian Revenue Agency (CRA) periodically reviews the tax situation of the companies of Repsol Oil&Gas Canada Inc. (ROGCI, formerly Talisman Group, acquired by Repsol in 2015) resident in Canada. In recent years, and by applying good tax practices, Repsol has obtained a rating for ROGCI as a low-risk taxpayer, which has allowed it to reach agreements with the CRA to resolve existing disputes and avoid uncertain disputes. International operations from 2010 to 2016 and corporate income tax for 2015 and 2016 are currently being reviewed.

Spain

Proceedings relating to the following corporate income tax years are still open.

- Financial years 2006 to 2009. The matters discussed relate mainly to transfer prices, deduction of losses for investments abroad and deductions for investments, the majority of them as a result in changes in the criteria maintained by the

Administration in previous actions. In relation to the transfer price adjustments, the settlements have been annulled as a consequence of the resolution of a dispute by the Arbitration Board of the Economic Agreement with the Basque Country, the resolution of an amicable procedure with the US and two ruling handed down by the Central Economic Administrative Tribunal; which is why the inspection authorities must issue new assessments applying the criteria already accepted in subsequent years by the Administration and the taxpayer. In relation to the other matters, the Central Economic Administrative Court partially upheld the company's appeal, and the Company has appealed to the National High Court for the aspects that were not upheld (tax incentives for R&D, deduction of losses on overseas business), as the Company believes it has acted within the law.

- Financial years 2010 to 2013. The actions were concluded in 2017 without any penalties being imposed and, for the large part, by means of assessments signed on an uncontested basis or agreements from which no significant liabilities have arisen for the Group. However, with regards to two issues (deductibility of interest for the late payment of taxes and the deduction of losses on overseas business,) the administrative decision has been subject to appeal, as the Company believes it has acted within the law. Currently, the claims are still in the administrative review process, and a ruling has yet to be handed down by the Central Economic Administrative Tribunal.
- Financial years 2014 to 2016. The audit ended in December 2019 without the imposition of any penalty and, for the most part, with assessments signed on an uncontested basis or agreements that did not generate significant liabilities for the Group. However, there are still disputes regarding the deduction of losses for foreign investments and the corresponding claim has been filed against the administrative ruling, since the Company believes that its actions have been in accordance with the law.

Indonesia

The Indonesian tax authorities have been questioning various aspects regarding the taxation of the profits of the permanent establishments that the Group has in the country, in particular with regard to the application of the reduced rate of the double taxation treaties signed by Indonesia. The company considers that its actions are in line with general practice in the sector and are in accordance with the law and, therefore, the disputes on which the aforementioned actions are based are being appealed through administrative proceedings or a ruling has yet to be handed down by the courts.

Malaysia

Repsol Oil & Gas Malaysia Ltd. and Repsol Oil & Gas Malaysia (PM3) Ltd., the Group's operating subsidiaries in Malaysia, have received notifications from the Inland Revenue Board (IRB) with regard to 2007, 2008 and 2011 questioning the deductibility of certain costs. The aforementioned actions have resulted in a reconciliation agreement ratified by the tax court, under which Repsol subsidiaries have received a refund of the taxes initially retained by the IRB. In addition, these entities received an assessment from the IRB for 2014 questioning the deductibility of certain expenses. The assessments were appealed in January 2020 as the Company considered that its actions were in accordance with the law.

The Company does not expect any additional liabilities to arise that could have a significant impact on the Group's profit as a result of the above proceedings.

(24) NET INCOME FROM DISCONTINUED OPERATIONS

In 2018, "Net income from discontinued operations", net of taxes, included the results of the disposal of the holding in Naturgy (€344 million), as well as the profit generated by Naturgy until February 22, 2018, when it was reclassified as held for sale, for an amount of €68 million.

(25) EARNINGS PER SHARE

The earnings per share at December 31, 2019 and 2018 are detailed below:

Earnings per share (EPS)	2019	2018
Net income attributed to the parent ⁽¹⁾ (€ million)	(3,816)	2,341
Adjustment to the interest expense on subordinated perpetual bonds (€ million)	(29)	(29)
Weighted average number of shares outstanding (millions of shares) ⁽²⁾	1,548	1,671
Basic and diluted earnings per share (euros/share)	(2.48)	1.38

⁽¹⁾ In 2018 it includes the net income attributed to the parent company corresponding to discontinued operations amounting to €412 million, equal to an EPS of €0.26 per share.

⁽²⁾ The outstanding share capital at December 31, 2018 came to 1,527,396,053 shares, although the average weighted number of shares outstanding for the purposes of calculating earnings per share on said date includes the effect of capital increases undertaken as part of the "Repsol Flexible Dividend" shareholder remuneration program, as per the applicable accounts regulations (see Note 3.2.2).

CASH FLOWS

(26) CASH FLOWS⁵¹

26.1) Cash flow from operating activities

During 2019 the net cash flow from operating activities amounted to €4,849 million, which represents an increase of 6% with respect to 2018. Part of this improvement is explained by the positive impact of the application of IFRS 16 (see Note 3.2.1), since in 2019 lease expenses are reflected in the income statement as amortization and financial expenses in the cash flows of the corresponding payments as cash flows from financing activities.

The breakdown of "Cash flows from operating activities" in the statement of cash flows is as follows:

	Notes	€ Million	
		2019	2018
Net income before tax		(3,201)	3,333
Adjusted result:		8,632	2,360
Amortization of non-current assets	3, 12 and 13	2,434	2,140
Operating provisions	11.3, 15 and 21	6,600	1,235
Net income from the disposal of assets	5 and 21	(147)	(62)
Financial result	22	301	173
Share of results of companies accounted for using the equity method, net of taxes	14	(351)	(1,053)
Other adjustments (net)		(205)	(73)
Changes in working capital:		137	(389)
Increase/Decrease in accounts receivable	18	276	119
Increase/Decrease in inventories	17	(182)	(531)
Increase/Decrease in accounts payable	19	43	23
Other cash flows from operating activities:		(719)	(725)
Dividends received		464	472
Income tax refunded/(paid) ⁽¹⁾		(975)	(762)
Other proceeds from/(payments for) operating activities ⁽²⁾		(208)	(435)
Cash flows from operating activities		4,849	4,579

⁽¹⁾ In 2019, the tax payments in Spain (installment payments for tax group 6/80), Libya and Indonesia are noteworthy of mention. For further information on the Group's tax contribution, see section 6.6 of the 2019 Consolidated Management Report.

⁽²⁾ Includes mainly payments for the application of provisions (see Note 15).

26.2) Cash flows from investing activities

During 2019 the net cash flow from investing activities resulted in the net payment of €4,407 million.

"Payments for/proceeds from investments in Group and associates" amount to -€90 million.

"Payments for/proceeds from investments in property, plant and equipment, intangible assets and property investments" came to -€3,094 million and primarily corresponds to investments in the *Upstream* segment in North America (which include the acquisition of a 63% interest in the assets of Eagle Ford, see Note 5), Norway and in the Exploration segment, and in the *Downstream* segment, those investments made for the upgrading and maintenance of the industrial complexes, Refining and Chemical businesses, as well as the undertakings for the international expansion of the commercial businesses in Mexico (service stations in the Mobility business) and Indonesia (acquisition of 40% of United Oil Company) and in the renewable projects in Spain. For additional information, see sections 4.1, 5.1 and 5.2 of the Consolidated Management Report.

"Payments for/proceeds from investments in other financial assets" came to -€1,311 million, corresponding to the arrangement of deposits and the changes in loans extended to joint ventures.

⁵¹ In accordance with the presentation options allowed in IAS 7 *Statement of cash flows*, the Group uses the so-called "indirect method" to disclose its operating cash flows. Under this method, the statement of cash flows starts with "Net income before tax" for the year, as per the income statement; this figure is then adjusted for the effects of transactions of a non-cash nature, any deferrals or accruals of past or future operating cash receipts or payments, and items of income or expense associated with investing or financing cash flows.

26.3) Cash flows from financing activities

In 2019 the net cash flow from financing activities resulted in the net payment of €2,289 million, which represents a decrease of 25% with respect to 2018. The lower net payments for financial liability instruments with respect to 2018 (issue of a bond of €750 million in 2019 - none in 2018 - and higher bond maturities and early redemptions in 2018) and the lower average cost and volume of debt were partially offset by greater treasury share purchases and shareholder remuneration (see Note 7) and by the impact of lease payments and interest under IFRS 16 (see Note 3.2.1), payments previously recognized in cash flows from operating activities.

A breakdown of the changes to liabilities linked to financing activities can be found below:

	€ Million					Closing balance ⁽¹⁾
	2018	2019				
	Opening balance ⁽¹⁾	Cash flows	Other cash flows			
	Exchange rate effect		Changes in FV	Others ⁽³⁾		
Bank borrowings	1,912	215	34	—	84	2,245
Bonds and other marketable securities	8,098	(365)	16	—	171	7,920
Derivatives (liabilities)	106	(466)	8	461	9	118
Loans ⁽²⁾	3,449	276	66	—	124	3,915
Other financial liabilities	116	9	2	—	9	136
Lease liabilities	1,624	(425)	44	—	1,890	3,133
Remunerations to shareholders and perpetual bonds	1,204	(396)	—	—	329	1,137
Treasury shares and own equity instruments	(350)	(1,844)	—	—	1,024	(1,170)
Total liabilities from financing activities	16,159	(2,996)	170	461	3,640	17,434
Derivatives (assets)	(77)	634	(5)	(662)	—	(110)
Other proceeds from/payments for financing activities ⁽⁴⁾	—	73	—	—	—	73
Total other assets and liabilities	(77)	707	(5)	(662)	—	(37)
Total	16,082	(2,289)	165	(201)	3,640	17,397

⁽¹⁾ Corresponds to the current and non-current balance of the income statement.

⁽²⁾ Includes loans to Group companies that have not been eliminated from the consolidation process.

⁽³⁾ This mainly includes the capital reduction carried out during the year through the redemption of treasury shares amounting to €1,024 million (see Note 7.3), the increase in liabilities due to the first-time application of IFRS 16 (see Note 3.2.1), the addition of leases, and the accrual of interest and dividends.

⁽⁴⁾ Includes mainly the proceeds from/payments for short-term financing granted in the amount of €69 million (€24 million in 2018).

OTHER DISCLOSURES

(27) COMMITMENTS AND GUARANTEES

27.1) Contractual commitments

At December 31, 2019, the Group has contractually committed to the following purchases, investment and other expenditures:

€ Million	2020	2021	2022	2023	2024	Subsequent years	Total
Purchase commitments	4,367	1,209	991	1,139	1,283	19,816	28,805
Crude oil and others ^{(1) (3)}	3,325	404	392	392	393	3,652	8,558
Natural gas ^{(2) (3)}	1,042	805	599	747	890	16,164	20,247
Investment commitments ⁽⁴⁾	804	320	132	82	82	145	1,565
Provision of services ⁽⁵⁾	472	373	281	213	176	388	1,903
Transport commitments ⁽⁶⁾	209	198	173	165	131	403	1,279
TOTAL	5,852	2,100	1,577	1,599	1,672	20,752	33,552

Note: Commitments consist of future unconditional obligations (non-cancellable, or cancellable only under certain circumstances), as a result of commercial agreements. These commitments were quantified using Repsol's best estimates, and, if fixed total amounts were not stipulated, price estimates and other variables that are consistent with those considered for calculating the recoverable amount of the assets (see Notes 3 and 21).

⁽¹⁾ Mainly includes the commitments for the purchase of products needed to operate the Group's refineries in Spain and the commitments assumed under crude oil purchase contracts with the Pemex Group (open-ended), with the Saudi Arabian Oil Company (renewed annually) and with the Repsol Sinopec Brasil Group (expires 2020) and with Overseas Petroleum and Investment Corporation (expires in 2020).

⁽²⁾ Primarily includes commitments to purchase liquefied natural gas (LNG) in North America (with "take or pay" clauses). In 2019 worthy of note is the contract for the supply of approximately one million tons of LNG per year for 20 years from the start-up of the Calcasieu Pass liquefaction facility (Cameron Parish, Louisiana) scheduled for 2022, signed with Venture Global LNG. These contracts are classified for accounting purposes as "own use".

⁽³⁾ Committed crude oil and gas volumes are as follows:

Purchase commitments	Unit of measurement	2020	2021	2022	2023	2024	Subsequent years	Total
Crude oil	kbbl	42,445	198	187	190	187	685	43,892
Natural gas								
Natural gas	Tbtu	193	151	8	8	7	13	380
Liquefied natural gas	Tbtu	153	127	90	118	139	2,262	2,889

⁽⁴⁾ Includes mainly investment commitments in Spain, Algeria, Norway and Bolivia amounting to €537 million, €253 million, €203 million and €191 million, respectively.

⁽⁵⁾ Includes mainly commitments associated with hydrocarbon exploration and productions activities in *Upstream* totaling €1,064 million and commitments for technological developments amounting to €325 million.

⁽⁶⁾ It includes, primarily, hydrocarbon transportation commitments in North America, Peru and Indonesia amounting to approximately €1,218 million.

27.2) Guarantees

At December 31, 2019 the most significant guarantees to third parties or companies whose assets, liabilities and earnings are not presented in the consolidated financial statements (joint ventures and associates) are as follows:

- For the rental of three floating production platforms for the development of the BMS 9 field in Brazil:
 - A guarantee for \$514 million corresponding to 100% of RSB's interest (see Note 14) in Guara B.V., for which Repsol holds a counter guarantee from China Petrochemical Corporation in respect of the latter's 40% interest in RSB.
 - Two additional guarantees of \$462 million and \$428 million, corresponding to the 15% interest held indirectly by the Group in Guar B.V.

The guaranteed amounts are reduced annually during the contracts' term of 20 years.

- For 51% of the guarantees for the decommissioning of RSRUK in the North Sea, for £579 million.

In addition, in line with general industry practice, the Group grants guarantees and commitments to compensate for obligations arising in the course of ordinary activities⁵², and for any liabilities arising from its activities, including environmental liabilities⁵³ and for the sale of assets⁵⁴.

The guarantees cannot be considered a definite outflow of resources to third parties, as the majority of these guarantees will mature without any payment obligation arising. At the date of issue of these consolidated financial statements, the probability of a breach that would trigger a liability for these commitments to any material extent is remote.

(28) RELATED PARTY TRANSACTIONS

Repsol carries out transactions with related parties on an arm's length basis. The transactions performed by Repsol, S.A. with its Group companies and those performed by the Group companies among themselves form part of the Company's ordinary course of business in terms of their purpose and conditions.

For the purposes of presenting this information, the following are considered to be related parties:

a. Significant shareholders: at December 31, the Company's significant shareholders that are deemed related parties are:

Significant shareholders	Total as % of share capital December 31, 2019 ⁽¹⁾
Sacyr, S.A. ⁽²⁾	8.03
Temasek Holdings (Private) Limited ⁽³⁾	1.5

Note: Data available to the Company at December 31, 2019 based on the most recent information furnished by Spain's central counterparty clearing house (Iberclear for its acronym in Spanish) and the information submitted by the shareholders to the Company and to the National Securities Market Commission (CNMV for its abbreviation in Spanish).

⁽¹⁾ Data prior to the close of the scrip issue detailed in section 7.1 Share capital.

⁽²⁾ Sacyr, S.A. holds its investment through Sacyr Securities, S.A.U, Sacyr Investments S.A.U. and Sacyr Investments II, S.A.U.

⁽³⁾ Temasek holds its investment through its subsidiary Chembra Investment PTE, Ltd.

- b. Directors and executives: includes members of the Board of Directors as well as members of the Executive Committee whose members are considered as "executive personnel" for purposes of this section (see Note 28.4).
- c. People, companies or entities within the Group: includes transactions with Group companies or entities that were not eliminated in the consolidation process, corresponding mainly to transactions undertaken with companies accounted for using the equity method (see Note 14).

⁵² Guarantees granted in the ordinary course of business correspond to a limited number of guarantees totaling €24 million. Environmental guarantees are provided in the normal course of hydrocarbon exploration and production activity, where the probability of occurrence of the covered contingencies is remote, and the related amounts cannot be determined. In Venezuela an undetermined guarantee has been granted to Cardón IV to cover the commitment to supply gas to Petróleos de Venezuela, S.A. (PDVSA) until 2036. However, PDVSA has provided a guarantee to Cardón IV to cover collection rights for the supply commitment. The Group has also provided a guarantee to the Republic of Venezuela to cover the obligations assumed in the development of gas assets in the country.

⁵³ Environmental guarantees are arranged in the normal course of hydrocarbon exploration and production operations, however, the probability of occurrence of the contingencies covered is remote and their amounts indeterminable.

⁵⁴ Outstanding guarantees for asset sales, granted in accordance with general industry practice, are immaterial. Of recent note are those granted in the sale of LNG assets to Shell in 2015.

Income, expenses and other transactions and balances recognized at December 31 with related party transactions are as follows:

€ Million	2019				2018			
	Significant shareholders	Directors and executives ⁽¹⁾	People, companies or entities within the Group	Total	Significant shareholders	Directors and executives ⁽¹⁾	People, companies or entities within the Group	Total
EXPENSES AND REVENUE								
Financial expenses	—	—	123	123	7	—	90	97
Leases	—	—	—	—	1	—	1	2
Services received	29	—	70	99	20	—	87	107
Purchase of goods ⁽²⁾	—	—	1,192	1,192	—	—	1,453	1,453
Other expenses	—	—	135	135	7	—	739	746
TOTAL EXPENSES	29	—	1,520	1,549	35	—	2,370	2,405
Financial income	—	—	124	124	4	—	162	166
Services provided	5	—	4	9	6	—	1	7
Sale of goods ⁽³⁾	178	—	386	564	180	—	575	755
Other revenue	1	—	190	191	1	—	66	67
TOTAL REVENUE	184	—	704	888	191	—	804	995

€ Million	2019				2018			
	Significant shareholders	Directors and executives ⁽¹⁾	People, companies or entities within the Group	Total	Significant shareholders	Directors and executives ⁽¹⁾	People, companies or entities within the Group	Total
OTHER TRANSACTIONS								
Financing agreements: credit and contributions of capital (creditor) ⁽⁴⁾	—	—	246	246	—	—	302	302
Financing agreements: loans and contributions of capital (borrower) ⁽⁵⁾	—	—	903	903	—	—	1,082	1,082
Guarantees and sureties given ⁽⁶⁾	—	—	654	654	44	—	669	713
Guarantees and sureties received ⁽⁶⁾	7	—	4	11	7	—	—	7
Commitments assumed ⁽⁷⁾	11	—	1	12	30	—	—	30
Dividends and other profits distributed ⁽⁸⁾	109	—	—	109	92	—	—	92
Other operations ⁽⁹⁾	35	—	1,565	1,600	135	—	1,906	2,041

€ Million	2019				2018			
	Significant shareholders	Directors and executives ⁽¹⁾	People, companies or entities within the Group	Total	Significant shareholders	Directors and executives ⁽¹⁾	People, companies or entities within the Group	Total
CLOSING BALANCES								
Customer and trade receivables	2	—	128	130	2	—	181	183
Loans and credits granted	—	—	962	962	—	—	1,096	1,096
Other receivables	—	—	77	77	—	—	1	1
TOTAL RECEIVABLE BALANCES	2	—	1,167	1,169	2	—	1,278	1,280
Suppliers and trade payables	12	—	85	97	9	—	93	102
Loans and credits received	—	—	3,915	3,915	—	—	3,442	3,442
Other payment obligations ⁽¹⁰⁾	3	—	2	5	47	—	1	48
TOTAL PAYABLE BALANCES	15	—	4,002	4,017	56	—	3,536	3,592

Note: In 2018 the tables for Expenses and Revenue and Other Transactions include transactions with the Naturgy Group until May 18, 2018 (see Note 1.4) and with Caixabank until September 20, 2018, the date of the announcement of the resolution adopted by its Board of Directors to sell its shareholding in Repsol and the resignation of its proprietary directors.

⁽¹⁾ Includes transactions performed with executives and directors not included in Note 30 on the remuneration received by executives and directors, and would correspond to the outstanding balance at the reporting date of the loans granted to members of senior management and the corresponding accrued interest, as well as dividends and other remuneration received as a result of holding shares of the Company.

⁽²⁾ In 2019 "People, companies or entities within the Group" primarily includes products purchased with Repsol Sinopec Brasil (RSB), and from BPRY Caribbean Ventures LLC (BPRY), for the amount of €790 million and €223 million in 2019, respectively (€875 million and €395 million in 2018).

⁽³⁾ In 2019 and 2018 "Significant shareholders" includes mainly the sales of crude oil to the Temasek group. In 2019 and 2018 "Persons, companies or entities of the Group" includes mainly sales of products to Iberian Lube Base Oil, S.A. (ILBOC) and Dynasol Group for €257 million and €107 million in 2019 and €252 million and €119 million in 2018, respectively, as well as sales to the Naturgy Group.

⁽⁴⁾ Includes mainly supplies and provisions for credit risks of accounts receivable and financial instruments (see Note 11.3 and 21.3).

⁽⁵⁾ Includes loans granted and new provisions for credit facilities in the period, as well as capital contributions to Group companies with companies accounted for using the equity method.

⁽⁶⁾ Includes primarily guarantees granted to joint ventures in the United Kingdom, issued in the ordinary course of business to cover obligations to dismantle offshore platforms in the North Sea.

⁽⁷⁾ Corresponds to purchase, investment or expense commitments acquired in the period (see Note 27).

⁽⁸⁾ Include the amounts corresponding to the sale to Repsol, at the guaranteed fixed price, of bonus share rights as part of the bonus share issue closed in January and July 2019 (in the 2018 table: January and July 2018), as part of the "Repsol Flexible Dividend" shareholder remuneration program (see Note 7.3).

⁽⁹⁾ In 2019 and 2018 "People, companies or entities within the Group" includes mainly the cancellations of guarantees provided to joint ventures in the UK and financing agreements.

⁽¹⁰⁾ In 2019 and 2018 "Significant shareholders" includes the amounts corresponding to the sale to Repsol, at the guaranteed fixed price, of the bonus share rights as part of the bonus share issue closed in January 2020 and 2019. These rights are recognized as accounts payable at December 31.

(29) PERSONNEL OBLIGATIONS

29.1) Defined contribution pension plans

Repsol has defined mixed modality plans for certain employees in Spain, which conform to current legislation. Specifically, this refers to pension plans with defined contributions for retirement and defined contributions in the event of full or absolute permanent disability, comprehensive disability and death. In the event of full or absolute permanent disability, comprehensive disability and death, pension plans have life insurance policies with an external entity. Additionally, outside Spain, certain Group companies have a defined contribution pension plans for their employees.

The annual cost charged to "*Personnel expenses*" in the income statement in relation to the defined contribution pension plans detailed above amounted to €54 million in 2019 and €56 million in 2018.

Executives of the Repsol Group in Spain are beneficiaries of an executive pension plan that complements the standard pension plan denominated "*Plan de previsión de Directivos*" (Executive welfare plan) which covers the participant's retirement, and their full or absolute permanent disability, comprehensive disability and death. Repsol makes defined contributions based on a percentage of participants' salaries. The plan guarantees a fixed return equal to 125% the National Consumer Price Index for the previous year. The plan is instrumented through collective insurances that cover pension obligations, underwritten by an insurance company. Premiums paid under these policies finance and externalize the Group's commitments in respect of contributions, as well as the fixed return mentioned above.

The cost of this plan recognized under "*Personnel expenses*" in the income statement in 2019 and 2018 amounted to €10 million and €12 million, respectively.

29.2) Defined benefit pension plans

Repsol has arranged defined benefit pension plans for certain groups of employees. The amount charged to the Group's income statement in 2019 and 2018 was €11 million and €5 million, respectively, while the related balance sheet provision at year-end 2019 and 2018 stood at €82 million and €64 million, respectively (see Note 15).

29.3) Long-term variable remuneration

The Company has implemented a loyalty building program aimed at senior executives and other persons occupying positions of responsibility in the Group, consisting of long-term incentives as part of their benefit package. The purpose of this program is to strengthen the identification of executives and managers with shareholders' interests, based on the sustainability of the Company's medium and long-term earnings as well as compliance with the Strategic Plan, while at the same time facilitating the retention by the Group of key personnel.

At year end, the 2016-2019, 2017-2020, 2018-2021 and 2019-2022 long-term incentive plans were in force. The 2015-2018 plan was closed, as originally stipulated, on December 31, 2018 and its beneficiaries received their bonuses in 2019.

The four long-term incentive plans in effect are independent of each other but their main characteristics are the same. Fulfillment of the respective objectives tied to each plan entitles the beneficiaries of each plan to receive an incentive in the first four months of the year following the last year of the plan. However, receipt of this incentive payment is tied to the beneficiary remaining in the Group's employ until December 31 of the last year of the plan, except in the special cases envisaged in the terms and conditions of the related plan.

If the incentive is to be received, a first variable coefficient is applied to the amount determined at the time the long-term incentive is granted, on the basis of the extent to which the objectives set are achieved, and then a second variable coefficient is applied linked to the arithmetic mean of the individual performance evaluation obtained by the beneficiary in the years included in the measurement period of each incentive plan, calculated as the percentage of individual variable annual remuneration obtained with respect to 100% of the established target.

None of the plans involve the delivery of shares or options to their beneficiaries, with the exception of the Chief Executive Officer, who is partially paid in shares. In this regard, the amount of the 2016-2019 Long-Term Incentive will be paid to the Chief Executive Officer in a proportion of 70% in cash and the remaining 30% in Company shares, so that he will receive €948,484 in cash and 14,743 Company shares equal to €187,438.

In accordance with the provisions of the current Director Remuneration Policy, the final number of shares to be delivered to the Chief Executive Officer is calculated taking into account: (i) the amount that is effectively payable following application of

the corresponding taxes (or withholdings); and (ii) the weighted average for the daily volume of average weighted Repsol share prices in the fifteen trading sessions before the Friday of the week preceding the date on which the Board of Directors agrees to pay the long-term incentive for the Chief Executive Officer in each of the Plans.

To reflect the commitments assumed under these incentive plans, the Group recognized a provision charge of €20 million and €31 million in the 2019 and 2018 income statement, respectively. At December 31, 2019 and 2018, the Group had recognized provisions totaling €67 million and €70 million, respectively, to fulfill all the plans described above.

In 2020, the Company plans to implement a new Long-Term Incentive Plan, the main difference of which with the previous Plans is based on the right to receive a "cash incentive" and a certain number of "performance shares" that will give the right to receive Repsol, S.A. shares, after the measurement period of the Plan has elapsed and subject to the performance of certain metrics. This new LIP is in line with regulations, corporate governance recommendations and best market practices.

29.4) Share Purchase Plans for Beneficiaries of Long-Term Incentive and Share Acquisition Plans

i.) "Share Purchase Plan for Beneficiaries of the Long-Term Incentive Plans"

This Plan allows its beneficiaries to invest in Repsol, S.A. shares of up to 50% of the gross amount of the long-term incentive received and its purpose is to encourage its beneficiaries (including the Chief Executive Officer and the other Executive Committee members) to align themselves with the long-term interests of the Company and its shareholders. If the beneficiary maintains the acquired shares for a period of three years from the initial investment and the remaining conditions of the Plan are met, the Company would deliver to the employee one additional share for every three initially acquired.

In addition, the beneficiaries considered to be Senior Management, defined to this end as the Executive Directors and the other Executive Committee members, are subject to an additional performance requirement in order to qualify for receipt of these additional shares, namely overall fulfillment of at least 75% of the targets set in the long-term incentive plan closed in the year immediately preceding that of delivery of the shares.

At the date of authorization for issue of the accompanying consolidated financial statements, the seventh, eighth and ninth cycles of this Plan were in force (2017-2020, 2018-2021 and 2019-2022); key data for these cycles are provided below:

	No. of shares	Total initial investment (no. of shares)	Average price (Eur/Share)	Maximum commitment for delivery of shares
Seventh cycle (2017-2020)	153	135,047	14.9955	44,964
Eighth cycle (2018-2021)	158	150,476	16.3021	50,160
Ninth cycle (2019-2022) ⁽¹⁾	201	246,508	14.4101	82,168

⁽¹⁾ This amount includes the shares delivered to the Executive Directors as a partial payment of the 2015-2018 LIP, amounting to 23,544. In accordance with the provisions of the Director Remuneration Policy, the shares, if any, delivered to the Executive Directors under each long-term variable remuneration plan may be calculated for the purposes of the investment in shares referred to in the Share Purchase Plan for the Beneficiaries of the Long-Term Incentive Plans.

During this ninth cycle, the current members of the Executive Committee, including the Chief Executive Officer, have acquired a total of 112,236 shares.

As a result of this Plan, at December 31, 2019 and 2018, the Group had recognized an expense under "Personnel expenses" with a balancing entry under "Other reserves" in equity of €0.5 million.

In addition, the sixth cycle of the Plan vested on June 30, 2019. As a result, the rights of 114 beneficiaries vested 39,490 shares (receiving a total of 29,563 shares net of payment on account of the personal income tax to be made by the Company). Specifically, the rights of the members of the Executive Committee and the rest of the Executive Directors to 16,134 shares also vested (net of the withholding retained by the Company, these individuals received a total of 11,190 shares).

ii.) "Share Acquisition Plans"

Since 2011 the Company has set up different Share Acquisition Plans, which were approved at the Annual General Meetings of April 15, 2011 (2011-2012 Share Acquisition Plan), May 31, 2012 (2013-2015 Share Acquisition Plan), April 30, 2015 (2016-2018 Share Acquisition Plan) and May 11, 2018 (2019-2021 Share Acquisition Plan).

These Plans are targeted at employees of the Repsol Group in Spain and are designed to enable those so wishing to receive a portion of their remuneration in Repsol, S.A. shares up to an annual limit of €12,000. The shares to be delivered will be valued at Repsol, S.A.'s closing share price on the continuous Spanish stock market on each date of delivery to the beneficiaries.

In 2019 the Group purchased 643,458 shares of Repsol, S.A. amounting to €9.2 million for delivery to employees. In 2018,

under the scope of this Plan, the Group acquired 518,228 Repsol, S.A. shares for a total of €8.2 million (see Note 7).

The members of the Executive Committee acquired 6,680 shares in accordance with the plan terms and conditions in 2019.

iii.) “Global Employee Share Purchase Plan: YOUR REPSOL”

In the last quarter of 2019, the Company launched the Global Employee Share Purchase Plan “YOUR REPSOL”, aimed at all employees. This Plan allows employees to allocate a certain amount to the purchase of Company shares and receive one free share for every two initially acquired, provided that the shares are held for a period of 2 years and the other conditions of the Plan are met.

The shares to be delivered under plans i.), ii.) and iii.) may come from Repsol's direct or indirect treasury shares, be newly issued or come from third parties with which agreements have been signed to ensure that the commitments assumed are met.

(30) REMUNERATION OF THE MEMBERS OF THE BOARD OF DIRECTORS AND EXECUTIVES

30.1) Remuneration of the members of the Board of Directors

a) Due to membership of the Board of Directors

In accordance with Article 45 of the Bylaws, the Directors, in their capacity as members of the Board and in exchange for discharging the supervisory and decision-making duties intrinsic to Board membership, are entitled to receive a fixed annual payment that may not exceed the ceiling established to this end at the Annual General Meeting or in the Director Remuneration Policy; it is up to the Board of Directors to determine the precise amount payable within that limit and its distribution among the various Directors, factoring in the positions and duties performed by each within the Board and its Committees, the membership of the Committees, the positions held by each one of them on the Board and any other objective circumstance considered as relevant.

The upper limit established in the Director Remuneration Policy approved at the Annual General Meeting held on May 31, 2019 is €8.5 million.

The amount of remuneration accrued in 2019 by the members of the Board of Directors in their capacity as Board members with a charge to this bylaw-stipulated emoluments amounted to €6,963 million, the detail being as follows:

Board of Directors	Remuneration of Board members relating to their position (euros)						Total
	Board	Delegate C.	Audit C.	Appoints C.	Remun. C.	Sustain. C.	
Antonio Brufau Niubó ⁽¹⁾	(1)	(1)	—	—	—	—	2,500,000
Josu Jon Imaz San Miguel	176,594	176,594	—	—	—	—	353,188
Arantza Estefanía Larrañaga ⁽²⁾	117,729	—	—	12,877	—	25,753	156,359
María Teresa García-Milá Lloveras ⁽³⁾	117,729	—	51,507	12,877	—	—	182,113
Henri Philippe Reichstul	176,594	176,594	—	—	—	—	353,188
M ^a del Carmen Ganyet i Cirera ⁽⁴⁾	176,594	—	88,297	22,074	12,877	—	299,842
Ignacio Martín San Vicente ⁽⁵⁾	176,594	176,594	—	—	9,198	—	362,386
María Teresa Ballester Fornés	176,594	—	88,297	—	22,074	—	286,965
Ángel Duráñez Adeva ⁽⁶⁾	73,581	—	36,790	9,198	9,198	—	128,767
Manuel Manrique Cecilia	176,594	176,594	—	—	—	—	353,188
Luis Carlos Croissier Batista ⁽⁷⁾	73,581	—	36,790	—	—	18,395	128,766
Rene Dahan	176,594	176,594	—	—	—	—	353,188
José Manuel Loureda Mantiñán ⁽⁸⁾	176,594	—	—	9,198	22,074	44,149	252,015
Mariano Marzo Carpio ⁽⁹⁾	176,594	—	—	22,074	12,877	44,149	255,694
Isabel Torremocha Ferrezuelo ⁽¹⁰⁾	176,594	—	88,297	—	—	25,753	290,644
J. Robinson West	176,594	176,594	—	—	—	—	353,188
Luis Suárez de Lezo Mantilla	176,594	176,594	—	—	—	—	353,188

Note: In accordance with the scheme approved by the Board of Directors, and at the proposal of the Remuneration Committee, the amount due annually in 2019 came to: (i) €176,594 million for membership of the Board of Directors; (ii) €176,594 million for membership of the Delegate Committee; (iii) €88,297 million for membership of the Audit and Control Committee; (iv) €44,148 million for membership of the Sustainability Committee; (v) €22,074 million for membership of the Appointments Committee; and (vi) €22,074 million for membership of the Remuneration Committee.

⁽¹⁾ On April 30, 2015, Mr. Brufau stepped down from his executive duties, and on the same date the shareholders at the Annual General Meeting approved his re-election as non-executive Chairman of the Board of Directors and his new remuneration conditions, applicable from May 1, 2015, consisting of a fixed remuneration of €2,500 thousand gross per year. In addition, remuneration in kind and payments on account/withholdings linked to remuneration in kind totaled €0.419 million.

⁽²⁾ Ms. Estefanía was appointed Director of the Company and member of the Appointments Committee and Sustainability Committee on May 31, 2019.

⁽³⁾ Ms. García-Milá was appointed Director of the Company and member of the Audit and Control Committee and Appointments Committee on May 31, 2019.

- (4) Ms. Ganyet was appointed member of the Remuneration Committee on May 31, 2019 and Chairman of the Committee on June 26, 2019.
 (5) Mr. Martín ceased to be a member of the Remuneration Committee on May 31, 2019.
 (6) Mr. Durández ended his term of office as Director and member of the Audit and Control, Appointments and Remuneration Committees on May 31, 2019.
 (7) Mr. Croissier ended his term of office as Director and member of the Audit and Control Committee and Sustainability Committee on May 31, 2019.
 (8) Mr. Loureda ceased to be a member of the Appointments Committee on May 31, 2019.
 (9) Mr. Marzo was appointed member of the Remuneration Committee on May 31, 2019.
 (10) Ms. Torremocha was appointed member of the Sustainability Commission on May 31, 2019.

Additionally, it should also be noted that:

- The members of the Board of Directors of the parent company have not been granted any loans or advances by any Group company, joint arrangement or associate.
- The non-executive Directors only receive the fixed remuneration indicated in the table above and are excluded from the schemes financed by the Company to provide coverage in the event of termination, death or other developments and from the Company's short- and long-term performance-based bonus schemes. As regards the Chairman of the Board of Directors, see Note 1 of the table on remuneration for membership of the managing bodies, in this section.
- No Group company, joint arrangement or associates has pension or life insurance obligations to any former or current member of the Board of Directors of the parent company, except in the case of the Chairman of the Board, the Chief Executive Officer and the General Secretary Director, whose remuneration are subject to the commitments set forth in their respective contracts for services, as described further on.

b) Due to the holding of executive positions and performing executive duties

In 2019, compensation to Directors for the performance of executive duties was as follows:

<i>€ Million</i>	Josu Jon Imaz San Miguel	Luis Suárez de Lezo Mantilla
Fixed monetary remuneration	1.200	0.983
Variable remuneration and in kind ⁽¹⁾	2.020	6.980

⁽¹⁾ Includes, among other items, life and disability insurance and health insurance, as well as variable annual and multi-annual remuneration, as well as additional shares corresponding to the settlement of the sixth cycle of the Share Purchase Plan for the Beneficiaries of the Long-Term Incentive Plans, as detailed in section 29.3. In the case of Mr. Suárez de Lezo, given the termination of his executive functions, it also includes the settlement corresponding thereto for the Long-Term Incentive plans in which he participated until December 31, 2019 (2016-2019 LIP, 2017-2020 LIP, 2018-2021 LIP and 2019-2022 LIP) in accordance with the general terms and conditions of these plans, the settlement of the units consolidated in the Share Purchase Plans for the Beneficiaries of the Long-Term Incentive Plan in which they participated and the settlement of the amount accumulated on their behalf in the "Long-Service Bonus" Investment Fund.

The above amounts do not include the amounts detailed in section c) and d) below.

c) Due to membership of the Boards of Directors of investees

In 2019 the members of the Parent's Board of Directors did not receive any amount for membership to the governing bodies of other Group companies, joint arrangements or associates.

d) Due to contributions to pension plans, long-service bonuses and welfare plans

The cost in 2019 of the contributions made to pension plans, long-service bonuses and welfare plans for the members of the Executive Directors discharging executive duties in the Group amounted to:

	<i>€ Million</i>
Josu Jon Imaz San Miguel	0.254
Luis Suárez de Lezo Mantilla	0.197

e) Share Purchase Plan for Beneficiaries of the Long-Term Incentive Plans

On June 30, 2019, the vesting period concluded for the sixth cycle of the share purchase plan for beneficiaries of long-term incentive plans (see Note 29.4.i). Upon vesting, Josu Jon Imaz became entitled to the receipt of 3,550 shares (before withholdings), valued at a price of €14.02 per share.

30.2) Indemnity payments to Board members

In 2019, the compensation received by the General Secretary Director, due to the termination of his contract and his executive functions and the non-competition agreement, amounts to €11.3 million⁵⁵.

30.3) Other transactions with directors

In 2019, Repsol's Directors did not conclude any material transaction with the Company or any of the Group companies outside the ordinary course of business or on terms other than those afforded to customers.

The Chief Executive Officer signed up for the 2017-2020, 2018-2021 and 2019-2022 cycles of the Share Purchase Plan for beneficiaries of the long-term incentive plans, as detailed in Note 29.

In 2019, the Board of Directors has not been made aware of any situation of direct or indirect conflict of interest. Nevertheless, in accordance with article 229 of the Spanish Companies Act, in that fiscal year resolutions of the Board and of the Appointments Committee regarding related-party transactions, ratification, re-election and continuity of Directors and on appointment to positions on the Board and its committees were adopted in the absence of the Director affected by the relevant proposed resolution.

In addition, the Executive Directors did not participate in the approval of the Board of Directors resolutions regarding their compensation for the performance of executive duties at the Company.

30.4) Remuneration of key management personnel

a) Scope

For reporting purposes in this section, Repsol considers "*key management personnel*" to be the members of the Executive Committee. In 2019, a total of 9 persons formed the Executive Committee. The term "*key management personnel*", made for reporting purposes, neither substitutes nor comprises a benchmark for interpreting other senior management pay concepts applicable to the Company under prevailing legislation (e.g. Royal Decree 1382/1985), nor does it have the effect of creating, recognizing, amending or extinguishing any existing legal or contractual rights or obligations.

This section itemizes the remuneration accrued in 2019 by the people who, at some juncture during the period and during the time they occupied such positions, were members of the Board of Directors. Unless indicated otherwise, the compensation figures provided for "*key management personnel*" do not include the compensation accrued by people who are also directors of Repsol, S.A.; the director compensation disclosures for these individuals are included in section 1 of this note.

b) Wages and salaries, executive welfare plan, pension fund and insurance premiums.

The total remuneration earned in 2019 by executive officers who formed part of the Executive Committee is as follows:

	<i>€ Million</i>
Wages	5.403
Allowances	0.079
Variable remuneration ⁽¹⁾	3.884
Remuneration in kind ⁽²⁾	0.594
Executive welfare plan	1.119

⁽¹⁾ This consists of an annual bonus, and a multi-annual bonus, calculated both as a given percentage of the fixed remuneration earned on the basis of the degree to which certain targets are met.

⁽²⁾ Includes, inter alia, vested entitlement to 12,584 additional shares (before withholdings) at the end of the vesting period for the sixth cycle of the Share Purchase Plan for Beneficiaries of the Long-Term Incentive Plans, valued at €14.02 per share, representing an equivalent amount of €176,448 gross. It also includes contributions to pension plans for executives (see Note 29), and the amount of premiums paid for life and disability insurance, amounting to €0.174 million.

⁵⁵ For further information, see "B. The Repsol Corporate Governance System, 5. Remuneration of Directors and Senior Management" in the Annual Corporate Governance Report.

c) Advances and loans granted

At December 31, 2019, the Parent had granted loans to members of its key management personnel amounting to €0.331 million, having accrued an average interest rate of 2.1% during the current financial year.

30.5) Indemnity payments to key management personnel

Key management personnel are entitled under their contracts to severance pay if their employment is terminated for any reason other than breach of executive duties, retirement, disability or their own free will without reference to any of the indemnifiable events specified in the contracts.

The Group has arranged a collected insurance agreement to assure such benefits for Executive Committee members with the title General Manager, and for Directors that have performed executive duties.

In 2019, no amount was paid to the Company's key management personnel as compensation for termination benefits and non-competition agreement.

30.6) Other transactions with key management personnel

In 2019, Repsol's key management personnel did not conclude any material transaction with the Company or any of the Group companies outside the ordinary course of business or on terms other than those afforded to customers or other than on an arm's length basis.

Additionally, key management personnel signed up for the 2017-2020, 2018-2021 and 2019-2022 cycles of the Share Purchase Plan for Beneficiaries of the Long-term Incentive Plans, as detailed in Note 27.

30.7) Civil liability insurance

In 2019, the Group took out a civil liability policy for Board members, the key management personnel referred to in Note 30.4.a), and the other executives and people executing such functions, for a total premium of €1.9 million. The policy also covers different Group companies under certain circumstances and conditions.

(31) CLIMATE CHANGE AND ENVIRONMENTAL INFORMATION

The Board of Directors of Repsol, S.A. has reviewed its role in the fight against climate change and in December published a new strategic approach in which it undertakes to become a company with **net zero emissions by 2050**, establishing interim objectives to gradually reduce its carbon intensity indicator.

The Group's risk policy, approved by the Board of Directors, establishes that risk management is integrated into the business processes, and that risks are identified, assessed and mitigated in order to maintain them at levels tolerated by the Company. The risks arising from climate change, both physical and so-called transitional, are managed in the same way as the other risks to which the Group is exposed, except for the fact that their emerging nature makes them the subject of more detailed examination in the long term. The Group's risk profile, both in the short and in the medium and long term, is available to the Group's executive and governing bodies for decision-making purposes.

For further information in relation to the risks and management of climate change, as well as the Group's environmental management, see sections 6.1 "Climate change" and 6.4 "Environment" of the Consolidated Management Report.

31.1) CO₂ emission allowances

Accounting policies -CO₂ emission allowances

Emission allowances are recognized as an intangible asset and are initially recognized at acquisition cost. Those allowances free of charge under the emissions trading system for the 2013-2020 period, are initially recognized at the market price prevailing at the beginning of the year in which they are issued, against deferred income as a grant. As the corresponding tons of CO₂ are issued, the deferred income is reclassified to profit or loss.

They are not amortized as their carrying amount matches their residual value and are subject to an impairment test based on their recoverable amount, (measured with reference to the price of the benchmark contract in the futures market provided by the ECX-European Climate Exchange).

The Group records an expense under "Other operating expenses" in the income statement for the CO₂ emissions released during the year, recognizing a provision calculated based on the tons of CO₂ emitted, measured at: (i) their carrying amount in the case of the allowances that the Group has at year end; and (ii) the closing list price in the case of allowances that it does not yet have at year end.

When the emissions allowances for the tons of CO₂ emitted are delivered to the authorities, the intangible assets as well as their corresponding provision are derecognized from the balance sheet without any effect on the income statement.

When carbon emission allowances are actively managed to take advantage of market trading opportunities, the trading allowances portfolio is classified as trading inventories (see Note 17).

In Europe, the regulation concerning the CO₂ allowances market, the EU Emissions Trading System (EU-ETS) Directive entered Phase III on January 1, 2013. This phase, which ends in 2020, marks the end of the free allocation of CO₂ emission allowances to activities related to electricity generation, while they have been significantly reduced in others. The 2014 update to the EU-ETS Directive confirmed that refining activity in Europe was one of the sectors exposed to carbon leakage and has therefore continued benefiting from the free allocation of CO₂ allowances, partially covering its deficits.

The movements in provisions recognized in respect of CO₂ emission allowances (see Note 15) used in 2019 and 2018 is as follows:

	€ Million	
	2019	2018
Opening balance for the year	113	69
Contributions charged to results ⁽¹⁾	325	114
Reclassifications and other movements ⁽²⁾	(113)	(70)
Balance at year end	325	113

⁽¹⁾ Corresponds to the expense incurred to acquire the allowances needed to cover the Group's CO₂ emissions.

⁽²⁾ In 2019 and 2018, corresponds to the derecognition of allowances used to cover emissions made in 2018 and 2017, respectively (see Note 12).

In 2019 and 2018, the Group companies recognized emission allowances allocated free of charge under the Spanish National Allocation Plan equivalent to 8 million tons of CO₂, initially measured at €201 million and €63 million, respectively (see Note 12).

The net cost of carbon management amounted to €132 million in 2019 and €44 million in 2018. The increase is mainly explained by the significant increase in the price of CO₂ in 2019 (€24.8/tn compared to €15.9/tn in 2018) corresponding to the CO₂ emitted by industrial complexes in Spain not covered by free emission allowances, as well as the inclusion of the electricity generation businesses acquired in 2018.

31.2) Environmental investment, expenses and provisions⁵⁶

Environmental investments in 2019 amounted to €180 million (€111 million classified as 'work in progress' at December 31). Of note are those aimed at improving the minimization of emissions into the atmosphere, increasing energy saving and efficiency, managing and optimizing water consumption, improving contingency systems and spill prevention systems.

In 2019, of note are the investment at the La Coruña refinery to reduce atmospheric emissions by improving energy integration and replacing compressor turbines in the fluid catalytic cracking unit, as well as the investment in the Petronor and Puertollano refineries in the atmospheric distillation units to improve their energy efficiency.

Environmental expenses, which are recognized under "*Procurements*" and "*Other operating expenses*", excluding the expenses for the allowances necessary to cover CO₂ emissions (see previous section), amounted to €94 million and €83 million in 2019 and 2018, respectively. In 2019, of note are the actions carried out for the protection of the atmosphere in the *Downstream* industrial facilities amounting to €26 million (€27 million in 2018); water management amounting to €19 million (€17 million in 2018); and waste management amounting to €17 million (€18 million in 2018).

Provisions for environmental actions⁵⁷ at December 31, 2019 amount to €99 million, with no significant provisions recognized during the year. In addition, the Group has recognized field dismantling provisions for its hydrocarbon exploration and production assets (see Note 15).

The corporate insurance policies cover, subject to terms and conditions, civil liability for pollution on land and at sea and certain liabilities vis-a-vis the authorities pursuant to the Environmental Liability Act, all of which derived from accidental, sudden and identifiable events, in keeping with habitual industry practice and applicable legislation.

(32) FURTHER BREAKDOWNS

32.1) Staff⁵⁸

The Repsol Group employed a total of 24,634 people at December 31, 2019, geographically distributed as follows: Spain (17,112 employees), North America (1,166 employees), South America (3,905 employees), Europe, Africa and Brazil (1,830 employees), Asia and Russia (620 employees) and Oceania (1 employee). Average headcount in 2019 was 24,891 employees (24,691 employees in 2018).

Below is a breakdown of the Group's total staff⁵⁹ distributed by professional category and gender at year-end 2019 and 2018:

	2019		2018	
	Men	Women	Men	Women
Executives	208	55	217	56
Technical Managers	1,694	738	1,752	746
Technicians	7,262	4,678	7,051	4,621
Manual workers and junior personnel	6,266	3,733	6,405	3,658
Total⁽¹⁾	15,430	9,204	15,425	9,081

The Repsol Group employed a total of 630 differently-abled people at December 31, 2019 (2.56% of its workforce).

In Spain, in 2019, using the computation criteria stipulated in Spanish law on the rights of people with disability and their integration, the Group surpassed the legally required percentage threshold: its differently-abled workforce accounted for 2,47% of the total in Spain, namely 467 direct hires.

⁵⁶ Items identified as of an environmental nature, are understood as those the purpose of which is to minimize environmental impact and to protect and improve the environment. The criteria for their assessment are based on the Group's technical criteria established in the "Repsol Safety and Environmental Costs Guide" based on the guidelines issued by the American Petroleum Institute (API).

⁵⁷ Repsol recognizes the provisions required to cover the measures aimed at preventing and repairing environmental impact. These provisions are presented under "*Current and non-current provisions*" on the balance sheet and under "*Other provisions*" in the table reconciling the movement in provisions in Note 15.

⁵⁸ For further information on the workforce and human resource management policies, see section 6.2 of the Consolidated Management Report.

⁵⁹ Pursuant to the provisions of Organic Law 3/2007, of March 22, which promotes true equality between men and women, published in the Official State Gazette of March 23, 2007.

32.2) Fees paid to auditors

The fees for audit services, professional services related to the audit and other non-audit services provided during the year to Repsol Group companies by PriceWaterhouseCoopers Auditores, S.L. and the companies in its network (PwC)⁶⁰, as well as the fees for those provided by other audit firms, are shown below:

€ Million	Main auditor		Other auditors	
	2019	2018	2019	2018
Audit and related services:	7.8	7.3		
Audit services	7.1	6.6		
Other professional services related to the audit	0.7	0.7		
Tax services	—	—		
Other services	—	0.2		
Total⁽¹⁾	7.8	7.5	—	—

⁽¹⁾ The fees approved in 2019 by PriceWaterhouseCoopers Auditores, S.L for audit and related services amounted to €4.4 million and €0.6 million, respectively.

"Audit services" includes the fees relating to the audit of the separate and consolidated financial statements of Repsol, S.A. and of the companies forming part of its Group, the limited reviews of the Group's interim consolidated financial statements, and the review of the information relating to the Group's Internal Financial Reporting Control System, whose work allows evidence to be obtained for the audit.

"Other related services" includes, mainly, verifications and certifications for partners and official bodies, reports for the issuance of bonds and other marketable securities (comfort letters), as well as the verification of the non-financial information of the consolidated management report.

The directors of the Parent Company obtained confirmation from the Group auditor of the Group's compliance with the applicable independence requirements in accordance with the applicable law and regulations.

32.3) Research and development

Research costs incurred are recognized as expenses for the year and development costs are capitalized only if all the conditions stipulated in the applicable accounting standard are met.

The expense recognized in the income statement in connection with research and development activities amounted to €72 million in 2019 and €75 million in 2018, respectively. The capitalized expenses corresponding to development activities amounted to €28 million in 2019.

(33) SUBSEQUENT EVENTS

There have been no significant subsequent events at year-end that may affect the present consolidated Financial Statements.

⁶⁰ The shareholders at Repsol's Annual General Meeting held on May 19, 2017 approved the appointment of PwC as the auditor of Repsol, S.A. and the Group for 2018, 2019 and 2020.

(34) EXPLANATION ADDED FOR TRANSLATION TO ENGLISH

These consolidated financial statements are prepared on the basis of IFRSs, as endorsed by the European Union, and Article 12 of Royal Decree 1362/2007. Consequently, certain accounting practices applied by the Group may not conform to other generally accepted accounting principles in other countries.

APPENDIX I: GROUP'S CORPORATE STRUCTURE

APPENDIX IA: MAIN COMPANIES COMPRISING THE REPSOL GROUP AT DECEMBER 31, 2019

Name	Parent company	Country	Corporate purpose	Method of conso. ⁽¹⁾	December 2019				
					Control Int. ⁽²⁾	Total Group Interest	Equity ⁽³⁾	Share Capital ⁽³⁾	
					%	€ Million			
UPSTREAM									
Agri Development, B.V. ⁽¹⁶⁾	Repsol Sinopec Brasil, B.V.	Netherlands	Platform for production of crude oil and natural gas	E.M.(J.V.)	10.00	6.00	—	—	
Akakus Oil Operations, B.V.	Repsol Exploración Murzuq, S.A.	Netherlands	Oil and gas exploration and production	E.M.	49.00	49.00	—	—	
ASB Geo	Repsol Exploración, S.A.	Russia	Oil and gas exploration and production	E.M.(J.V.)	50.01	50.01	2	—	
BP Trinidad & Tobago, Llc. ⁽¹⁶⁾	BPRY Caribbean Ventures, Llc.	United States	Oil and gas exploration and production	E.M.(J.V.)	100.00	30.00	—	—	
BPRY Caribbean Ventures, Llc. ⁽¹⁵⁾	Repsol Exploración S.A.	United States	Oil and gas exploration and production	E.M.(J.V.)	30.00	30.00	1,786	2,780	
Cardón IV, S.A.	Repsol Exploración, S.A.	Venezuela	Oil and gas exploration and production	E.M.(J.V.)	50.00	50.00	(892)	4	
CSJC Eurotek - Yugra	Repsol Exploración Karabashsky, B.V.	Russia	Oil and gas exploration and production	E.M.(J.V.)	70.78	70.78	64	—	
Dubai Marine Areas, Ltd. ⁽⁶⁾	Repsol Exploración S.A.	United Kingdom	Oil and gas exploration and production	E.M.(J.V.)	50.00	50.00	2	—	
Equion Energia Ltd.	Talisman Colombia Holdco Ltd.	United Kingdom	Oil and gas exploration and production	E.M.(J.V.)	49.00	49.00	611	—	
FEHI Holding S.a.r.l.	TE Holding S.a.r.l.	Luxembourg	Portfolio company	F.C.	100.00	100.00	3,117	199	
Foreland Oil Ltd. ⁽⁹⁾	Rift Oil, Ltd.	British Virgin Islands	Oil and gas exploration and production	F.C.	100.00	100.00	(10)	255	
Fortuna Resources (Sunda) Ltd. ⁽⁹⁾	Talisman UK (South East Sumatra) Ltd.	British Virgin Islands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	53	—	
Guará, B.V. ⁽¹⁶⁾	Repsol Sinopec Brasil, B.V.	Netherlands	Platform for production of crude oil and natural gas	E.M.	25.00	15.00	—	—	
MC Alrep, Llc.	AR Oil & Gaz, B.V.	Russia	Management services for JV	E.M.(J.V.)	100.00	49.00	1	—	
Lapa Oil & Gas, B.V. ⁽¹⁶⁾	Repsol Sinopec Brasil, B.V.	Netherlands	Platform for production of crude oil and natural gas	E.M.	25.00	15.00	—	—	
Occidental de Colombia LLC	Repsol International Finance, B.V.	United States	Portfolio company	E.M.(J.V.)	25.00	25.00	143	94	
Paladin Resources Ltd.	TE Holding S.a.r.l.	United Kingdom	Portfolio company	F.C.	100.00	100.00	30	73	
Petrocarabobo, S.A.	Repsol Exploración S.A.	Venezuela	Oil and gas exploration and production	E.M.(J.V.)	11.00	11.00	129	552	
Petroquirquire, S.A. Emp. Mixta	Repsol Exploración S.A.	Venezuela	Oil and gas exploration and production.	E.M.(J.V.)	40.00	40.00	(1,049)	232	
Quirquire Gas, S.A. Emp. Mixta	Repsol Venezuela, S.A.	Venezuela	Oil and gas exploration and production.	E.M.(J.V.)	60.00	60.00	—	—	
Repsol Alberta Shale Partnership	Repsol Oil & Gas Canada Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	472	1,489	
Repsol Angola 22, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	(1)	351	
Repsol Angola 35, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	121	
Repsol Angola 37, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	5	257	
Repsol Angostura, Ltd.	Repsol Exploración S.A.	Trinidad and Tobago	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	(1)	36	
Repsol Aruba, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	1	22	
Repsol Bulgaria, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	128	
Repsol Bulgaria Khan Kubrat, S.A.	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	24	—	
Repsol Canada Energy Partnership	Repsol Oil & Gas Canada Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	744	1,362	
Repsol Ductos Colombia, S.A.S.	Talisman Colombia Holdco Ltd.	Colombia	Oil and gas exploration and production	F.C.	100.00	100.00	83	3	
Repsol E&P Bolivia, S.A.	Repsol Bolivia, S.A.	Bolivia	Oil and gas exploration and production	F.C.	100.00	100.00	732	135	
Repsol E&P Eurasia, LLC.	Repsol Exploración S.A.	Russia	Oil and gas exploration and production	F.C.	99.99	99.99	5	6	
Repsol E&P USA, Inc.	Repsol USA Holdings Corporation	United States	Oil and gas exploration and production	F.C.	100.00	100.00	2,860	2,927	
Repsol E&P USA Holdings, Inc.	Repsol Oil & Gas Holdings USA, Inc.	United States	Oil and gas exploration and production	F.C.	100.00	100.00	2,939	1,685	
Repsol Ecuador, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	76	6	
Repsol Energy North America Corporation	Repsol USA Holdings Corporation	United States	Marketing of GNL	F.C.	100.00	100.00	(646)	255	
Repsol Exploración 17, B.V. ⁽¹⁴⁾	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	—	1	

Name	Parent company	Country	Corporate purpose	Method of conso. ⁽¹⁾	December 2019			
					Control Int. ⁽²⁾	Total Group Interest	€ Million	
							Equity ⁽³⁾	Share Capital ⁽³⁾
Repsol Exploración 405A, S.A. ⁽¹⁷⁾	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
Repsol Exploración Aitoloakarnania, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	7	—
Repsol Exploración Argelia, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	231	5
Repsol Exploración Aru, S.A. ⁽⁵⁾	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
Repsol Exploración Atlas, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
Repsol Exploración Caribe, S.L.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	—
Repsol Exploración Cendrawasih I, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	27
Repsol Exploración Cendrawasih III, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	4
Repsol Exploración Cendrawasih IV, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	6
Repsol Exploración Colombia, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	68	2
Repsol Exploración East Bula, B.V. ⁽⁶⁾	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	—	4
Repsol Exploración Gharb, S.A. ⁽¹⁴⁾	Repsol Exploración S.A.	Spain	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	7	—
Repsol Exploración Guinea, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	—
Repsol Exploración Guyana, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	8	—
Repsol Exploración Ioannina, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	39	—
Repsol Exploración Irlanda, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	14	—
Repsol Exploración Jamaica, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
Repsol Exploración Karabashsky, B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	137	131
Repsol Exploración Kazakhstan, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	7	—
Repsol Exploración Mexico, S.A. de C.V.	Repsol Exploración S.A.	Mexico	Oil and gas exploration and production	F.C.	100.00	100.00	120	136
Repsol Exploración Murzuq, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	453	9
Repsol Exploración Peru, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	320	12
Repsol Exploración Seram, B.V. ⁽⁶⁾	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	—	7
Repsol Exploración South East Jambi B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	2	—
Repsol Exploración South Sakakemang, S.L. ⁽¹⁸⁾	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	2	2
Repsol Exploración Tanfit, S.L.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	7	3
Repsol Exploración Tobago, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	5	—
Repsol Exploración W. Papua IV S.L. ⁽⁵⁾	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
Repsol Exploración, S.A.	Repsol S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	5,595	27
Repsol Exploration Australia, Pty, Ltd. ⁽⁶⁾	Repsol Exploración S.A.	Australia	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
Repsol Exploration Namibia Pty, Ltd.	Repsol Exploración S.A.	Namibia	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	2	—
Repsol Exploração Brasil, Ltda.	Repsol Exploración, S.A.	Brazil	Oil and gas exploration and production	F.C.	100.00	100.00	56	59
Repsol Greece Ionian, S.L. ⁽⁵⁾	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	1	—
Repsol Groundbirch Partnership	Repsol Oil & Gas Canada Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	2	231
Repsol Investigaciones Petrolíferas, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	407	212
Repsol Libreville, S.A. avec A.G.	Repsol Exploración S.A.	Gabon	Oil and gas exploration and production	F.C.	100.00	100.00	(12)	68
Repsol LNG Holdings, S.A.	Repsol Exploración S.A.	Spain	Hydrocarbon marketing	F.C.	100.00	100.00	17	2
Repsol Louisiana Corporation ⁽⁶⁾	Repsol USA Holdings Corporation	United States	Oil and gas exploration and production	F.C.	100.00	100.00	16	92
Repsol Norge, AS	Repsol Exploración S.A.	Norway	Oil and gas exploration and production	F.C.	100.00	100.00	329	—
Repsol OCP de Ecuador, S.A.	Repsol Ecuador, S.A.	Spain	Operation of an oil pipeline for the transport of	F.C.	100.00	99.99	69	—
Repsol Offshore E & P USA, Inc.	Repsol USA Holdings Corporation	United States	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	11	29

Name	Parent company	Country	Corporate purpose	Method of conso. ⁽¹⁾	December 2019			
					Control Int. ⁽²⁾	Total Group Interest	€ Million	
							Equity ⁽³⁾	Share Capital ⁽³⁾
Repsol Oil & Gas Australia (JPDA 06-105) Pty Ltd.	Paladin Resources Ltd.	Australia	Oil and gas exploration and production	F.C.	100.00	100.00	2	146
Repsol Oil & Gas Australasia Pty Ltd.	Talisman International Holdings, B.V.	Australia	Shared services company	F.C.	100.00	100.00	—	67
Repsol Oil & Gas Canada, Inc. ⁽¹⁰⁾	Repsol Energy Resources Canada Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	9,738	6,122
Repsol Oil&Gas Gulf of Mexico LLC ⁽⁵⁾	Repsol E&P USA Holdings, Inc.	United States	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
Repsol Oil & Gas Holdings USA Inc.	FEHI Holding S.a.r.l.	United States	Oil and gas exploration and production	F.C.	100.00	100.00	4,443	1,916
Repsol Oil & Gas Malaysia (PM3) Ltd.	Fortuna International Petroleum Corporation	Barbados	Oil and gas exploration and production	F.C.	100.00	100.00	40	10
Repsol Oil & Gas Malaysia Ltd.	Fortuna International Petroleum Corporation	Barbados	Oil and gas exploration and production	F.C.	100.00	100.00	307	—
Repsol Oil & Gas Niugini Kimu Alpha Pty Ltd.	Repsol Oil & Gas Niugini Ltd.	Australia	Oil and gas exploration and production	F.C.	100.00	100.00	—	6
Repsol Oil & Gas Niugini Kimu Beta Ltd.	Repsol Oil & Gas Niugini Ltd.	Papua New Guinea	Oil and gas exploration and production	F.C.	100.00	100.00	—	14
Repsol Oil & Gas Niugini Ltd.	Repsol Oil & Gas Papua Pty, Ltd.	Papua New Guinea	Oil and gas exploration and production	F.C.	100.00	100.00	16	338
Repsol Oil & Gas Niugini Pty Ltd.	Talisman International Holdings, B.V.	Australia	Oil and gas exploration and production	F.C.	100.00	100.00	324	607
Repsol Oil & Gas Papua Pty Ltd.	Repsol Oil & Gas Niugini Pty Ltd.	Australia	Oil and gas exploration and production	F.C.	100.00	100.00	319	320
Repsol Oil & Gas USA LLC.	Repsol E&P USA Holdings Inc.	United States	Oil and gas exploration and production	F.C.	100.00	100.00	109	1,802
Repsol Oil & Gas Vietnam 07/03 Pty Ltd	Repsol Exploración, S.A.	Australia	Oil and gas exploration and production	F.C.	100.00	100.00	13	—
Repsol Oriente Medio, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	42	—
Repsol Services Mexico, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Oil and gas exploration and production	F.C.	100.00	100.00	8	8
Repsol Servicios Colombia, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	4	—
Repsol Sinopec Brasil, S.A. ⁽¹⁵⁾	Repsol S.A.	Brazil	Hydrocarbon operations and marketing	E.M.(J.V.)	60.01	60.01	7,262	7,191
Repsol Sinopec Resources UK Ltd ⁽¹⁵⁾	Talisman Colombia Holdco Ltd.	United Kingdom	Oil and gas exploration and production	E.M.(J.V.)	51.00	51.00	1,711	4,395
Repsol Suroriente Ecuador, S.A.	Repsol Exploración S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	1	2
Repsol U.K., Ltd.	Repsol Exploración S.A.	United Kingdom	Oil and gas exploration and production	F.C.	100.00	100.00	2	7
Repsol USA Holdings Corporation	Repsol Exploración S.A.	United States	Oil and gas exploration and production	F.C.	100.00	100.00	3,026	3,116
Repsol Venezuela, S.A.	Repsol Exploración Venezuela, B.V.	Venezuela	Oil and gas exploration and production	F.C.	100.00	100.00	147	714
Saneco	AR Oil & Gaz, B.V.	Russia	Oil and gas exploration and production	E.M.(J.V.)	100.00	49.00	36	—
SC Repsol Baicoi, S.R.L.	Repsol Exploración S.A.	Romania	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	8	54
SC Repsol Pitesti, S.R.L.	Repsol Exploración S.A.	Romania	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	8
SC Repsol Targoviste, S.R.L.	Repsol Exploración S.A.	Romania	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	4	48
SC Repsol Targu Jiu, S.R.L.	Repsol Exploración S.A.	Romania	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	1	5
Talisman (Algeria) B.V.	Repsol Exploración, S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	89	—
Talisman (Asia) Ltd.	Repsol Oil & Gas Canada Inc.	Canada	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	(143)	8
Talisman (Block K 39) B.V.	Repsol Exploración, S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
Talisman (Block K 9) B.V.	Talisman Global Holdings, B.V.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	—
Repsol Colombia Oil & Gas Ltd. ⁽²⁵⁾	Repsol Exploración, S.A.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	505	790
Talisman (Corridor) Ltd. ⁽¹³⁾	Fortuna International (Barbados), Inc	Barbados	Oil and gas exploration and production	F.C.	100.00	100.00	969	42
Talisman (Jambi Merang) Ltd.	Talisman International Holdings, B.V.	United Kingdom	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	47	72
Talisman (Sageri) Ltd.	Repsol Oil & Gas Canada Inc.	Canada	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	(85)	—
Talisman (Sumatra) Ltd.	Repsol Oil & Gas Canada Inc.	Canada	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	—
Talisman (Vietnam 133 &134) Ltd.	Repsol Exploración S.A.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	1	32
Talisman (Vietnam 15-2/01) Ltd.	Repsol Exploración S.A.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	169	321
Talisman Andaman B.V.	Talisman International Holdings, B.V.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	81	—

Name	Parent company	Country	Corporate purpose	Method of conso. ⁽¹⁾	December 2019			
					Control Int. ⁽²⁾	Total Group Interest	€ Million	
							Equity ⁽³⁾	Share Capital ⁽³⁾
Talisman Colombia Holdco Ltd.	Repsol Exploración S.A.	United Kingdom	Portfolio company	F.C.	100.00	100.00	1,186	1,899
Talisman Banyumas B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	—
Talisman East Jabung B.V.	Talisman International Holdings, B.V.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	(2)	—
Repsol Perpetual Norge AS ⁽²⁶⁾	Talisman Perpetual (Norway) Ltd.	Norway	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	1
Repsol Corridor B.V. ⁽²⁷⁾	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	—
Talisman Resources (Bahamas) Ltd ⁽⁸⁾	Paladin Resources Ltd.	Bahamas	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	7	—
Talisman Resources (North West Java) Ltd.	Talisman UK (South East Sumatra) Ltd.	United Kingdom	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	34	—
Talisman Sakakemang B.V.	Talisman International Holdings, B.V.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	94	—
Talisman South Sageri B.V.	Talisman International Holdings, B.V.	Netherlands	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	—	—
Talisman Transgasindo Ltd. ⁽¹³⁾	Fortuna International (Barbados), Inc.	Barbados	Portfolio company	F.C.	100.00	100.00	(26)	26
Talisman UK (South East Sumatra) Ltd.	Paladin Resources, Ltd.	United Kingdom	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	51	—
Talisman Vietnam Ltd.	Fortuna International Petroleum Corporation	Barbados	Oil and gas exploration and production	F.C.	100.00	100.00	18	—
Talisman Vietnam 07/03 B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	216	—
Talisman Vietnam 07/03-CRD Corporation LLC	Talisman International Holdings, B.V.	United States	Oil and gas exploration and production	F.C.	100.00	100.00	178	46
Talisman Vietnam 135-136 B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	146	—
Talisman Vietnam 146-147 B.V.	Repsol Exploración S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	—	—
TNO (Tafnefteotdacha)	AR Oil & Gaz, B.V.	Russia	Oil and gas exploration and production	E.M.(J.V.)	99.57	48.79	209	—
Transportadora Sulbrasileira de Gas, S.A.	Tucunaré Empreendimentos e Participações, Ltda.	Brazil	Gas pipeline construction and operation	E.M.(J.V.)	25.00	25.00	—	15
Transworld Petroleum (U.K.)	Repsol Sinopec North Sea Ltd.	United Kingdom	Oil and gas exploration and production	E.M.(J.V.)	100.00	51.00	—	—
Triad Oil Manitoba Ltd.	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	5	—
YPFB Andina, S.A. ⁽¹⁵⁾	Repsol Bolivia, S.A.	Bolivia	Oil and gas exploration and production	E.M.(J.V.)	48.33	48.33	927	157
YPFB Transierra, S.A. ⁽¹⁶⁾	YPFB Andina, S.A.	Bolivia	Transport of oil and gas by pipeline	E.M.	44.50	21.51	—	—
504744 Alberta Ltd.	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production ⁽¹¹⁾	F.C.	100.00	100.00	(7)	—
7308051 Canada Ltd	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	107	292
8441251 Canada Ltd.	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	13	15
8787352 Canada Ltd.	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	2	2
Vung May 156-159 Vietnam B.V.	Repsol Exploración, S.A.	The Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	1	—
DOWNSTREAM								
Abastecimentos e Serviços de Aviação, Lda.	Repsol Portuguesa, S.A.	Portugal	Marketing of oil products	E.M.	50.00	50.00	—	—
Agrícola Comercial del Valle de Santo Domingo, S.A. ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	E.M.(J.V.)	20.00	20.00	1	—
Alectoris Energía Sostenible 1, S.L ⁽⁵⁾	Repsol Electricidad y Gas, S.A. ⁽²³⁾	Spain	Wind power project	F.C.	100.00	100.00	12	—
Alectoris Energía Sostenible 3, S.L ⁽⁵⁾	Repsol Electricidad y Gas, S.A. ⁽²³⁾	Spain	Wind power project	F.C.	100.00	100.00	5	—
Ampere Power Energy, S.L. ⁽⁵⁾	Repsol Electricidad y Gas, S.A. ⁽²³⁾	Spain	Production and sale of storage batteries	E.M.	7.89	7.89	5	—
Arco Energía 1, S.L.U. ⁽⁵⁾	Repsol Renovables, S.L.U.	Spain	Sun power project	F.C.	100.00	100.00	5	1
Arco Energía 2, S.L.U. ⁽⁵⁾	Repsol Renovables, S.L.U.	Spain	Sun power project	F.C.	100.00	100.00	—	—
Arco Energía 3, S.L.U. ⁽⁵⁾	Repsol Renovables, S.L.U.	Spain	Sun power project	F.C.	100.00	100.00	—	—
Arco Energía 4, S.L.U. ⁽⁵⁾	Repsol Renovables, S.L.U.	Spain	Sun power project	F.C.	100.00	100.00	—	—
Arco Energía 5, S.L.U. ⁽⁵⁾	Repsol Renovables, S.L.U.	Spain	Sun power project	F.C.	100.00	100.00	—	—
Air Miles Spain, S.A. ⁽¹⁴⁾	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Travel Club Program. Loyalty service	E.M.	26.67	25.78	—	—
Arteche y García, S.L. ⁽¹⁴⁾	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	F.C.	100.00	96.68	—	—

Name	Parent company	Country	Corporate purpose	Method of conso. ⁽¹⁾	December 2019			
					Control Int. ⁽²⁾	Total Group Interest	€ Million	
							Equity ⁽³⁾	Share Capital ⁽³⁾
Asfaltos Españoles, S.A.	Repsol Petróleo, S.A.	Spain	Asphalts	⁽⁴⁾	50.00	49.99	35	9
Autoservicio Sargento, S.A. de C.V. ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Mexico	Installation and operation of service stations	E.M.(J.V.)	50.00	50.00	1	—
Bardahl de Mexico, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	E.M.(J.V.)	40.00	40.00	64	—
Begas Motor, S.L. ⁽⁵⁾	Repsol Energy Ventures, S.A.	Spain	Production and sale of electric vehicles and	E.M.	27.93	27.93	2	1
Belmont Technology Inc. ⁽⁵⁾	Repsol Energy Ventures, S.A.	Spain	Software for geoscience and reservoir engineering.	E.M.	9.87	9.87	1	5
Benzirep-Vall, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	F.C.	100.00	96.68	—	—
Bios Avanzados Tratados del Mediterráneo, S.L ⁽⁵⁾	Repsol Petróleo, S.A.	Spain	Distribution and marketing of oil products	F.C.	100.00	100.00	—	—
Caiageste - Gestao de Areas de Serviço, Lda.	GESPOST	Portugal	Operation and management of service stations	E.M.	50.00	50.00	—	—
Campsa Estaciones de Servicio, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Operation and management of service stations	F.C.	100.00	96.68	188	8
Carburants i Derivats, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Andorra	Distribution of oil derivative products	E.M.	33.25	32.15	2	—
Cl Repsol Aviación Colombia, S.A.S.	Repsol Downstream Internacional, S.A.	Colombia	Distribution and marketing of oil products	F.C.	100.00	100.00	—	—
Cogeneración Gequisa, S.A. ⁽¹⁴⁾	General Química	Spain	Production of electricity and steam	E.M.	39.00	19.50	6	2
Combustibles Sureños, S.A. de C.V. ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	E.M.(J.V.)	50.00	50.00	1	—
Compañía Anónima de Revisiones y Servicios, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	F.C.	95.00	91.85	3	1
Compañía Auxiliar Remolcadores y Buques Especiales, S.A.	Repsol Petróleo, S.A.	Spain	Provision of maritime services	F.C.	100.00	99.19	4	—
Desarrollo Eólico Las Majas VII, S.L. ⁽⁵⁾	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Wind power project	F.C.	100.00	100.00	—	—
Distribuidora Andalucía Oriental, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Fuel marketing	E.M.(J.V.)	50.00	48.34	2	1
Distribuidora de Petróleos, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Fuel marketing	F.C.	85.00	82.18	—	—
Dynasol Altamira, S.A. de C.V. ⁽¹⁴⁾	Dynasol Elastómeros, S.A. de C.V.	Mexico	Service provisions	E.M.(J.V.)	100.00	50.00	2	—
Dynasol China, S.A. de C.V. ⁽¹⁴⁾	Dynasol Gestión Mexico, S.A.P.I. de C.V.	Mexico	Service provisions	E.M.(J.V.)	99.99	49.99	5	5
Dynasol Elastómeros, S.A. de C.V. ⁽¹⁴⁾	Dynasol Gestión Mexico, S.A.P.I. de C.V.	Mexico	Production and marketing of chemical products	E.M.(J.V.)	100.00	50.00	138	30
Dynasol Elastómeros, S.A.U. ⁽¹⁴⁾	Dynasol Gestión, S.L.	Spain	Production and marketing of chemical products	E.M.(J.V.)	100.00	50.00	120	17
Dynasol Gestión Mexico, S.A.P.I. de C.V. ⁽¹⁴⁾	Repsol Química, S.A.	Mexico	Portfolio and shared services company	E.M.	50.00	50.00	258	219
Dynasol Gestión, S.L.	Repsol Química, S.A.	Spain	Portfolio and shared services company	E.M.	50.00	50.00	256	42
Dynasol, Llc. ⁽¹⁴⁾	Dynasol Gestión, S.L.	United States	Marketing of petrochemical products	E.M.(J.V.)	100.00	50.00	21	9
Endomexicana Renta y Servicios, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	E.M.(J.V.)	40.00	40.00	(1)	—
Energy Express S.L.U. ⁽¹⁴⁾	Societat Catalana de Petrolis, S.A.	Spain	Operation and management of service stations	F.C.	100.00	91.89	5	1
Estación de Servicio Bahía Asunción, S.A. de C.V. ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	E.M.(J.V.)	50.00	50.00	1	—
Estación de Servicio Barajas, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	F.C.	96.00	92.81	3	1
Estaciones de Servicio El Robledo, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations ⁽¹¹⁾	F.C.	100.00	96.68	—	—
Estación de Servicio Montsia, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	E.M.(J.V.)	50.00	48.34	—	—
Ezzing Renewable Energies S.L.	Repsol Energy Ventures S.A.	Spain	Development of solar power projects	E.M.	22.22	22.22	1	—
Finboot Ltd. ⁽⁵⁾	Repsol Energy Ventures, S.A.	United Kingdom	Blockchain technology for energy, retail and automotive	E.M.	8.34	8.34	1	—
Fuerzas Energéticas del Sur de Europa XI, S.L. ⁽⁵⁾	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Wind power project	F.C.	100.00	100.00	—	—
Fuerzas Energéticas del Sur de Europa XII, S.L. ⁽⁵⁾	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Wind power project	F.C.	100.00	100.00	—	—
Fuerzas Energéticas del Sur de Europa V, S.L. ⁽⁵⁾	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Wind power project	F.C.	100.00	100.00	—	—
Fuerzas Energéticas del Sur de Europa VI, S.L. ⁽⁵⁾	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Wind power project	F.C.	100.00	100.00	—	—
Gas Natural West África S.L.	Repsol LNG Holding, S.A.	Spain	Oil and gas exploration and production ⁽¹¹⁾	E.M.(J.V.)	100.00	72.06	1	—
Generación Eólica El Vedado, S.L. ⁽⁵⁾	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Wind power project	F.C.	100.00	100.00	—	—

Name	Parent company	Country	Corporate purpose	Method of conso. ⁽¹⁾	December 2019			
					Control Int. ⁽²⁾	Total Group Interest	€ Million	
							Equity ⁽³⁾	Share Capital ⁽³⁾
General Química, S.A.U. ⁽¹⁴⁾	Dynasol Gestión, S.L.	Spain	Manufacture and sale of petrochemical products	E.M.(J.V.)	100.00	50.00	76	6
Gestão e Admin. de Postos de Abastecimento, Unipessoal, Lda. GESPOST	Repsol Portuguesa, S.A.	Portugal	Marketing of oil products	F.C.	100.00	100.00	6	2
Gestión de Puntos de Venta GESPEVESA, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Service stations management	E.M.(J.V.)	50.00	48.34	54	39
Grupo Repsol del Peru, S.A.C.	Repsol Peru B.V.	Peru	Shared services company	F.C.	100.00	100.00	2	—
Gutsa Servicios, S.A. de C.V. ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Mexico	Service stations management	E.M.	50.00	50.00	—	—
Iberian Lube Base Oil Company, S.A.	Repsol Petróleo, S.A.	Spain	Development and production of lubricant base oils	⁽⁴⁾	30.00	29.99	232	180
Iberen Renovables, S.A. ⁽⁵⁾	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Wind power project	F.C.	100.00	100.00	4	4
Ibil, Gestor de Carga de Vehículo Eléctrico, S.A.	Repsol Electricidad y Gas, S.A. ⁽²³⁾	Spain	Operation of electric vehicle charging points	E.M.(J.V.)	50.00	50.00	3	13
Industrias Negromex, S.A. de C.V. ⁽¹⁴⁾	Dynasol Gestión Mexico, S.A.P.I. de C.V.	Mexico	Production of synthetic oil cloths	E.M.	99.99	49.99	—	—
Insa Altamira, S.A. de C.V. ⁽¹⁴⁾	Dynasol Gestión Mexico, S.A.P.I. de C.V.	Mexico	Supply of permanent staff	E.M.(J.V.)	99.99	49.99	2	—
Insa Gpro (Nanjing), Synthetic Rubber CO., Ltd. ⁽¹⁴⁾	Dynasol China, S.A. de C.V.	China	Production, development, sale of synthetic rubber	E.M.(J.V.)	50.00	24.99	6	1
Klikin Deals Spain, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Customer and oil product marketing management	E.M.	70.00	67.67	2	1
Liaoning North Dynasol Synthetic Rubber Co., Ltd. ⁽¹⁴⁾	Dynasol Gestión, S.L.	China	Production, development, sale of synthetic rubber	E.M.(J.V.)	50.00	25.00	25	95
Nanogap Sub n-m Powder S.A.	Repsol Energy Ventures S.A.	Spain	Development of nanoparticles and nanofibers	E.M.	12.62	12.62	5	3
OGCI Climate Investments, Llp.	Repsol Energy Ventures S.A.	United Kingdom	Technology Development	E.M.	9.09	9.09	103	148
Palmira Market, S.A. de C.V. ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Mexico	Management of supermarkets and stores	E.M.(J.V.)	50.00	50.00	1	—
Petróleos del Norte, S.A.	Repsol S.A.	Spain	Construction and operation of an oil refinery	F.C.	85.98	85.98	1,360	121
Petronor Innovación, S.L.	Petróleos del Norte, S.A.	Spain	Research activities	F.C.	100.00	85.98	—	—
Polidux, S.A.	Repsol Química, S.A.	Spain	Manufacture and sale of petrochemical products	F.C.	100.00	100.00	19	17
Principle Power (Europe), Ltd. ⁽¹⁴⁾	Principle Power, Inc.	United Kingdom	Electricity production	E.M.(J.V.)	100.00	20.57	17	—
Principle Power Portugal Unipessoal, Lda. ⁽¹⁴⁾	Principle Power, Inc.	Portugal	Electricity production	E.M.(J.V.)	100.00	20.57	17	—
Principle Power, Inc.	Repsol Energy Ventures S.A.	United States	Holding company	E.M.	20.57	20.57	15	37
PT Pacific Lubritama Indonesia ⁽⁵⁾	United Oil Comany Pte. Ltd	Indonesia	Production and distribution of lubricants	E.M.	95.00	38.00	—	—
Recreus Industries S.L.	Repsol Energy Ventures S.A.	Spain	Distribution of oil derivative products	E.M.	16.67	16.67	1	—
Refinería La Pampilla, S.A.A.	Repsol Peru B.V.	Peru	Hydrocarbon refining and marketing	F.C.	82.39	82.39	607	661
Régisiti Comercializadora Regulada, S.L.U. ⁽²⁰⁾	Repsol Electricidad y Gas,SA ⁽²³⁾⁽²⁸⁾	Spain	Marketing of electricity	F.C.	100.00	100.00	3	1
Renovacyl, S.A. ⁽⁵⁾	Iberen Renovables, S.A.	Spain	Wind power project	F.C.	100.00	100.00	—	1
Repsol Butano, S.A.	Repsol S.A.	Spain	Marketing of LGP	F.C.	100.00	100.00	293	59
Repsol Canada, Ltd. General Partner	Repsol Exploración S.A.	Canada	Regasification of LNG	F.C.	100.00	100.00	1	2
Repsol Chemie Deutschland, GmbH	Repsol Química, S.A.	Germany	Marketing of chemical products	F.C.	100.00	100.00	2	—
Repsol Chile, S.A.	Repsol S.A.	Chile	Portfolio company	F.C.	100.00	100.00	2	2
Repsol Comercial de Productos Petrolíferos, S.A.	Repsol Petróleo, S.A.	Spain	Marketing of oil products	F.C.	99.79	96.68	1,159	335
Repsol Comercial, S.A.C.	Refinería La Pampilla S.A.A.	Peru	Marketing of fuel	F.C.	100.00	92.42	86	75
Repsol Comercializadora de Electricidad y Gas, S.L.U. ⁽²¹⁾	Repsol Electricidad y Gas,SA ⁽²³⁾⁽²⁸⁾	Spain	Marketing of electricity	F.C.	100.00	100.00	96	1
Repsol Directo, Lda.	Repsol Portuguesa, S.A.	Portugal	Distribution and marketing of oil products	F.C.	100.00	100.00	3	2
Repsol Directo, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Distribution and marketing of oil products	F.C.	100.00	96.68	4	—
Repsol Downstream Mexico, S.A. de C.V	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	F.C.	100.00	99.97	26	64
Relkia Distribuidora de Electricidad, S.L. ⁽²²⁾	Repsol Petróleo, S.A.	Spain	Distribution and supply of electricity	F.C.	100.00	99.97	10	—
Repsol Energy Perú, S.A.C. ⁽¹²⁾	Repsol Comercial, S.A.C.	Peru	Sale of solid, liquid and gaseous fuels and related products ⁽¹¹⁾	F.C.	100.00	92.42	2	1

Name	Parent company	Country	Corporate purpose	Method of conso. ⁽¹⁾	December 2019			
					Control Int. ⁽²⁾	Total Group Interest	€ Million	
							Equity ⁽³⁾	Share Capital ⁽³⁾
Repsol Energy Ventures, S.A.	Repsol Technology and Ventures, S.L.U.	Spain	Development of new energy products	F.C.	100.00	100.00	33	2
Repsol Exploration Advanced Services, AG	Repsol Exploración S.A.	Switzerland	Human resources service provider	F.C.	100.00	100.00	1	—
Repsol Gas Portugal, Unipessoal, LDA	Repsol Butano, S.A.	Portugal	Marketing of LGP	F.C.	100.00	100.00	27	3
Repsol Generación Eléctrica S.L.U. ⁽¹⁹⁾	Repsol Electricidad y Gas, S.A. ⁽²³⁾	Spain	Generation of electricity	F.C.	100.00	100.00	853	523
Repsol Italia, SpA	Repsol S.A.	Italy	Marketing of oil products	F.C.	100.00	100.00	(8)	2
Repsol Lubricantes y Especialidades, S.A.	Repsol Petróleo, S.A.	Spain	Production and marketing of oil derivatives	F.C.	100.00	99.97	126	5
Repsol Lubrificantes e Especialidades Brasil Participações, Ltda.	Repsol Lubricantes y Especialidades, S.A.	Brazil	Production and marketing of lubricants	F.C.	100.00	100.00	—	3
Repsol Mar de Cortés, S.A. de C.V. ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Mexico	Production and marketing of lubricants	E.M.(J.V.)	50.00	50.00	16	1
Repsol Mar de Cortés Estaciones de Servicio, S.A. de C.V. ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Mexico	Production and marketing of lubricants	E.M.(J.V.)	50.00	50.00	1	—
Repsol Marketing, S.A.C.	Repsol Peru B.V.	Peru	Fuel and special products marketing	F.C.	100.00	100.00	20	3
Repsol Marketing France, S.A.S.U.	Repsol Downstream Internacional, S.A.	France	Marketing of oil products.	F.C.	100.00	100.00	—	—
Repsol Maroc, S.A. ⁽⁶⁾	Repsol Butano, S.A.	Morocco	Marketing of LGP	E.M.	99.96	99.96	—	1
Repsol Electricidad y Gas, S.A. ⁽²³⁾	Repsol S.A.	Spain	Production, distribution and sale of biofuels	F.C.	100.00	100.00	1,242	1
Repsol Peru, B.V.	Repsol S.A.	The Netherlands	Portfolio company	F.C.	100.00	100.00	391	345
Repsol Petróleo, S.A.	Repsol S.A.	Spain	Import of products and operation of refineries	F.C.	99.97	99.97	2,750	218
Repsol Polímeros, Unipessoal, LDA	Repsol Química, S.A.	Portugal	Manufacture and sale of petrochemical products	F.C.	100.00	100.00	265	62
Repsol Portuguesa, Lda	Repsol S.A.	Portugal	Distribution and marketing of oil products	F.C.	100.00	100.00	204	118
Repsol Química, S.A.	Repsol S.A.	Spain	Manufacture and sale of petrochemical products	F.C.	100.00	100.00	1,139	60
Repsol Renovables, S.L.U. ⁽⁵⁾	Repsol Electricidad y Gas, S.A. ⁽²³⁾	Spain	Development of new energy projects	F.C.	100.00	100.00	84	—
Repsol St. John LNG, S.L.	Repsol LNG Holding, S.A.	Spain	Sector studies	F.C.	100.00	100.00	1	—
Repsol Trading Peru, S.A.C.	Repsol Trading, S.A.	Peru	Trading and transport	F.C.	100.00	100.00	6	9
Repsol Trading Singapore Pte., Ltd.	Repsol Trading, S.A.	Singapore	Trading and transport	F.C.	100.00	100.00	(31)	—
Repsol Trading USA Corporation	Repsol USA Holdings Corporation	United States	Trading and transport	F.C.	100.00	100.00	(147)	—
Repsol Trading, S.A.	Repsol S.A.	Spain	Supply, Marketing, Trading and Transport	F.C.	100.00	100.00	823	—
Rocsole OY	Repsol Energy Ventures S.A.	Finland	Technology development	E.M.	12.50	12.50	1	5
Saint John LNG Development Company, Ltd.	Repsol St. John LNG, S.L.	Canada	Liquefaction plant investment project ⁽¹¹⁾	F.C.	100.00	100.00	—	3
Servicios de Seguridad Mancomunados, S.A.	Repsol Petróleo, S.A.	Spain	Safety	F.C.	100.00	99.98	1	—
Servicios Logísticos Combustibles de Aviación, S.L.	Repsol Lubricantes y Especialidades, S.A.	Spain	Transport of aviation oil products	E.M.(J.V.)	50.00	49.29	24	4
Sociedade Abastecedora de Aeronaves, Lda.	Repsol Portuguesa, S.A.	Portugal	Marketing of oil products	E.M.	25.00	25.00	—	—
Societat Catalana de Petrolis, S.A. (PETROCAT)	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Distribution and marketing of oil products	F.C.	94.94	91.89	(2)	6
Solgas Distribuidora de Gas, S.L.	Repsol Butano, S.A.	Spain	Marketing of LGP	F.C.	100.00	100.00	1	1
Solred, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Management of payment methods at service stations	F.C.	100.00	96.68	55	25
Sorbwater Technology, A.S.	Repsol Energy Ventures S.A.	Norway	Water treatment technology management in E&P	E.M.	30.78	30.78	—	9
Terminales Canarios, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Supply and distribution of oil products	E.M.(J.V.)	50.00	48.34	25	20
Tramperase, S.L. ⁽⁵⁾	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Development of solar power projects	F.C.	100.00	100.00	—	—
United Oil Company Pte. Ltd ⁽⁵⁾	Repsol Downstream Internacional, S.A.	Singapore	Production and distribution of lubricants	E.M.	40.00	40.00	—	—
Valdesolar Hive, S.L.	Repsol Renovables, S.L.U. ⁽²⁴⁾	Spain	Development of solar power projects	F.C.	100.00	100.00	5	—
WIB Advance Mobility, S.L. ⁽⁵⁾	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	City car sharing rentals	E.M.(J.V.)	50.00	48.34	2	—
Windplus, S.A.	Repsol Renovables, S.L.U. ⁽²⁴⁾	Portugal	Technology development for wind generation	E.M.	20.60	19.70	(1)	1
CORPORATION								
Albatros, S.à.r.l.	Repsol S.A.	Luxembourg	Portfolio company	F.C.	100.00	100.00	223	—

Name	Parent company	Country	Corporate purpose	Method of conso. ⁽¹⁾	December 2019			
					Control Int. ⁽²⁾	Total Group Interest	€ Million	
							Equity ⁽³⁾	Share Capital ⁽³⁾
AR Oil & Gaz, B.V.	Repsol Exploración S.A.	The Netherlands	Portfolio company	E.M.(J.V.)	49.00	49.00	503	—
Edwards Gas Services LLC	Repsol Oil & Gas USA LLC.	United States	Portfolio company	F.C.	100.00	100.00	28	46
Fortuna International (Barbados) Inc. ⁽¹³⁾	Talisman International (Luxembourg), S.a.r.l.	Barbados	Portfolio company	F.C.	100.00	100.00	40	68
Fortuna International Petroleum Corporation	Repsol Exploración, S.A.	Barbados	Portfolio company	F.C.	100.00	100.00	514	403
Gaviota RE, S.A. ⁽⁷⁾	Albatros, S.a.r.l.	Luxembourg	Insurance and reinsurance	F.C.	100.00	100.00	305	1
Greenstone Assurance, Ltd.	Gaviota RE, S.A.	Bermuda	Insurance and reinsurance ("run-off" company) ⁽¹¹⁾	F.C.	100.00	100.00	3	3
Oleoducto de Crudos Pesados, Ltd.	Repsol OCP de Ecuador, S.A.	Cayman Islands	Portfolio company	E.M.	29.66	29.66	188	89
Oleum Insurance Company Ltd.	Repsol Oil & Gas Canada Inc.	Barbados	Insurance and reinsurance ("run-off" company) ⁽¹¹⁾	F.C.	100.00	100.00	1	—
Repsol Bolivia, S.A.	Repsol S.A.	Bolivia	Service provisions	F.C.	100.00	100.00	530	237
Repsol Downstream Internacional, S.A.	Repsol S.A.	Spain	Portfolio company	F.C.	100.00	100.00	325	—
Repsol Gestión de Divisa, S.L.	Repsol S.A.	Spain	Financial	F.C.	100.00	100.00	4,311	—
Repsol International Finance, B.V.	Repsol S.A.	The Netherlands	Financing and holding of shares	F.C.	100.00	100.00	714	317
Repsol Oil & Gas RTS Sdn.Bhd.	Repsol Exploración, S.A.	Malaysia	Shared services company	F.C.	100.00	100.00	2	19
Repsol Oil & Gas SEA Pte. Ltd.	Repsol Exploración, S.A.	Singapore	Shared services company	F.C.	100.00	100.00	12	5
Repsol Services Company	Repsol USA Holdings Corporation	United States	Service provisions	F.C.	100.00	100.00	31	39
Repsol Sinopec Brasil, B.V. ⁽¹⁶⁾	Repsol Sinopec Brasil, S.A.	The Netherlands	Portfolio company	E.M.(J.V.)	100.00	60.01	—	—
Repsol Technology and Ventures, S.L.U. ⁽⁵⁾	Repsol S.A.	Spain	Shared services company	F.C.	100.00	100.00	—	—
Repsol Tesorería y Gestión Financiera, S.A.	Repsol S.A.	Spain	Financial	F.C.	100.00	100.00	237	—
Rift Oil Ltd.	Talisman International Holdings, B.V.	United Kingdom	Portfolio company ⁽¹¹⁾	F.C.	100.00	100.00	143	149
Talisman International (Luxembourg), S.a.r.l.	Repsol Oil & Gas Canada Inc.	Luxembourg	Portfolio company	F.C.	100.00	100.00	1,266	68
Talisman International Holdings B.V.	Repsol Exploración, S.A.	The Netherlands	Portfolio company	F.C.	100.00	100.00	230	870
Talisman Perpetual (Norway) Ltd.	TE Holding S.a.r.l.	United Kingdom	Portfolio company ⁽¹¹⁾	F.C.	100.00	100.00	—	1
TE Holding S.ar.l.	Repsol Oil & Gas Canada, Inc.	Luxembourg	Portfolio and finance company	F.C.	100.00	100.00	4,026	4,131

⁽¹⁾ Method of consolidation:

F.C.: Full consolidation

E.M.: Equity method. Joint Ventures are identified as "JV".

⁽²⁾ Percentage corresponding to direct and indirect interest of the parent company immediately above the subsidiary.

⁽³⁾ Corresponds to Equity and Share Capital data used in the Group's consolidation process. Companies whose functional currency is not the euro have been translated at the closing exchange rate. Amounts have been rounded (less than half a million has been rounded down to zero).

⁽⁴⁾ Interests in joint operations (see Appendix Ic) which are structured through a company and this vehicle does not limit its rights to the assets or obligations for the liabilities related to the arrangement.

⁽⁵⁾ Companies incorporated into the Repsol Group in 2019 (see Appendix Ib).

⁽⁶⁾ Company in the process of liquidation.

⁽⁷⁾ This company holds a non-controlling interest in Oil Insurance, Ltd (5.54%), domiciled in Bermudas.

⁽⁸⁾ This company, legally incorporated in the Bahamas, is registered for tax purposes in the United Kingdom.

⁽⁹⁾ These companies, legally incorporated in the British Virgin Islands, are registered for tax purposes in the United Kingdom.

⁽¹⁰⁾ This company is the parent company for Repsol Groundbitch Partnership, registered in the United States.

⁽¹¹⁾ Inactive company.

⁽¹²⁾ This company was formerly known as Puma Energy Perú, S.A.C.

⁽¹³⁾ These companies, legally incorporated in Barbados, are registered for tax purposes in the Netherlands.

⁽¹⁴⁾ Share Capital and Equity data correspond to 2018.

⁽¹⁵⁾ Equity relates to the value of the consolidated subgroup.

⁽¹⁶⁾ Equity value included in its parent.

⁽¹⁷⁾ This company was formerly known as Repsol Exploración Bougezoul, S.A.

⁽¹⁸⁾ This company was formerly known as Repsol Jambi Merang, S.L.

⁽¹⁹⁾ This company was formerly known as Viesgo Generación, S.L..

⁽²⁰⁾ This company was formerly known as Viesgo Comercializadora de Referencia, S.L.U.

⁽²¹⁾ This company was formerly known as Viesgo Energía, S.L.U.

⁽²²⁾ This company was formerly known as Repsol Eléctrica de Distribución, S.L. (RED)

⁽²³⁾ This company was formerly known as Repsol Nuevas Energías, S.A. The company name was changed in September 2019.

⁽²⁴⁾ Change from the Repsol Electricity and Gas Matrix to the Repsol Renewables Matrix. The change in the matrix took place in November 2019.

⁽²⁵⁾ This company was formerly known as Talisman (Colombia) Oil & Gas Ltd.

⁽²⁶⁾ This company was formerly known as Talisman Energy Investments Norge AS.

⁽²⁷⁾ This company was formerly known as Talisman Java B.V.

⁽²⁸⁾ Change of the parent of Repsol Generación Eléctrica, S.L.U. to Repsol Electricidad y Gas, S.A. The change of the parent took place in December 2019.

APPENDIX IB: MAIN CHANGES IN THE SCOPE OF CONSOLIDATION

For the year ended December 31, 2019

a) Business combinations, other acquisitions and acquisitions of interest in subsidiaries, joint ventures and/or associates:

Name	Country	Parent company	Item	Date	12.31.2019		
					Method of consolidation ⁽¹⁾	% voting rights acquired	% total voting rights in entity following acquisition ⁽²⁾
Agrícola Comercial Valle de Santo Domingo, S.A	Mexico	Repsol Downstream Internacional, S.A	Acquisition	January-19	E.M. (N.C.)	20.00%	20.00%
Autoservicio Sargento, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A	Acquisition	January-19	E.M. (N.C.)	50.00%	50.00%
Combustibles Sureños, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A	Acquisition	January-19	E.M. (N.C.)	50.00%	50.00%
Estación de Servicio Bahía Asunción, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A	Acquisition	January-19	E.M. (N.C.)	50.00%	50.00%
Gutsa Servicios, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A	Acquisition	January-19	E.M. (N.C.)	50.00%	50.00%
Palmira Market, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A	Acquisition	January-19	E.M. (N.C.)	50.00%	50.00%
Repsol Mar de Cortés Estaciones de Servicio, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A	Acquisition	January-19	E.M. (N.C.)	50.00%	50.00%
Repsol Mar de Cortés, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A	Acquisition	January-19	E.M. (N.C.)	50.00%	50.00%
Sorbwater Technology, A.S.	Norway	Repsol Energy Ventures, S.A.	Increase in interest	January-19	E.M.	9.35%	20.64%
Ampere Power Energy, S.L.	Spain	Repsol Energy Ventures, S.A.	Acquisition	February-19	E.M.	7.89%	7.89%
Begas Motor, S.L.	Spain	Repsol Energy Ventures, S.A.	Acquisition	February-19	E.M.	36.19%	36.19%
Refinería La Pampilla, S.A.A.	Peru	Repsol Peru B.V.	Increase in interest	March-19	F.C.	10.04%	92.42%
Alectoris Energía Sostenible 1, S.L.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Alectoris Energía Sostenible 3, S.L.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Arco Energía 1, S.L.U.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Arco Energía 2, S.L.U.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Arco Energía 3, S.L.U.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Arco Energía 4, S.L.U.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Arco Energía 5, S.L.U.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Desarrollo Eólico Las Majas VII, S.L.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Fuerzas Energéticas del Sur de Europa V, S.L.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Fuerzas Energéticas del Sur de Europa VI, S.L.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Fuerzas Energéticas del Sur de Europa XI, S.L.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Fuerzas Energéticas del Sur de Europa XII, S.L.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Generación Eólica El Vedado, S.L.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Iberen Renovables, S.A.	Spain	Repsol Renovables, S.L.U. ⁽⁴⁾	Acquisition	June-19	F.C.	100.00%	100.00%
Renovacyl, S.A.	Spain	Iberen Renovables, S.A.	Acquisition	June-19	F.C.	100.00%	100.00%
Repsol Greece Ionian, S.L.	Spain	Repsol Exploración, S.A.	Incorporation	June-19	F.C.	100.00%	100.00%
Bios Avanzados Tratados del Mediterráneo, S.L.	Spain	Repsol Petróleo, S.A.	Incorporation	July-19	F.C.	100.00%	100.00%
Finboot Ltd.	UK	Repsol Energy Ventures, S.A.	Acquisition	July-19	E.M.	8.34%	8.34%
Repsol Exploración Aru, S.L.	Spain	Repsol Exploración, S.A.	Incorporation	July-19	F.C.	100.00%	100.00%
Repsol Exploración West Papúa IV, S.L.	Spain	Repsol Exploración, S.A.	Incorporation	July-19	F.C.	100.00%	100.00%
Principle Power Inc.	USA	Repsol Energy Ventures, S.A.	Increase in interest	July-19	E.M.	0.05%	23.03%
Belmont Technology Inc.	Spain	Repsol Energy Ventures, S.A.	Incorporation	August-19	E.M.	11.18%	11.18%
Repsol Renovables, S.L.U.	Spain	Repsol Electricidad y Gas, S.A. ⁽³⁾	Incorporation	September-19	F.C.	100.00%	100.00%
Repsol Oil&Gas Gulf of Mexico LLC	USA	Repsol E&P USA Holdings, Inc.	Acquisition	November-19	F.C.	100.00%	100.00%
United Oil Company Pte. Ltd	Singapore	Repsol Downstream Internacional, S.A	Acquisition	November-19	E.M.	40.00%	40.00%
PT Pacific Lubritama Indonesia	Indonesia	United Oil Company Pte. Ltd	Acquisition	November-19	E.M.	95.00%	95.00%
Nanogap Sub n-m Powder S.A.	Spain	Repsol Energy Ventures S.A.	Increase in interest	December-19	E.M.	3.84%	12.62%
Repsol Technology and Ventures, S.L.U	Spain	Repsol, S.A.	Incorporation	December-19	F.C.	100.00%	100.00%
Tramperase, S.L.	Spain	Repsol Renovables, S.L.U	Acquisition	December-19	F.C.	100.00%	100.00%
Sorbwater Technology, A.S.	Norway	Repsol Energy Ventures, S.A.	Increase in interest	December-19	E.M.	10.14%	30.78%
Edwards Gas Services LLC	USA	Repsol Oil & Gas USA LLC.	Increase in interest	December-19	F.C.	63.00%	100.00%

⁽¹⁾ Method of consolidation:

F.C.: Full consolidation

E.M.: Equity method. Joint Ventures are identified as "JV".

⁽²⁾ Corresponds to the percentage of equity in the acquired company.

⁽³⁾ Company formerly known as Repsol Nuevas Energías, S.A. The name was changed on September 2019.

⁽⁴⁾ Change from the Repsol Electricity and Gas Matrix to the Repsol Renewables Matrix. The change in the matrix took place in November 2019.

b) Reduction in interest in subsidiaries, joint ventures, and/or associates and other similar transactions:

Name	Country	Parent company	Item	Date	Method of consolidation ⁽¹⁾	12.31.2019		
						% voting rights disposed or derecognized	% total voting rights in entity following disposal	Profit/(Loss) (€ Million)
Repsol Energy Canada, Ltd. ⁽²⁾	Canada	Repsol Exploración, S.A.	Absorption	January-19	F.C.	100.00%	0.00%	
TEGSI (UK), Ltd.	United Kingdom	TE Holding, S.a.r.l.	Liquidation	January-19	F.C.	100.00%	0.00%	
Talisman South Mandar, B.V.	Netherlands	Talisman International Holdings, B.V.	Liquidation	February-19	F.C.	100.00%	0.00%	
Talisman Sadang, B.V.	Netherlands	Talisman International Holdings, B.V.	Liquidation	February-19	F.C.	100.00%	0.00%	
Gastream Mexico, S.A. de C.V.	Mexico	Repsol, S.A.	Liquidation	February-19	F.C.	100.00%	0.00%	
Repsol Exploración Cendrawasih II, B.V.	Netherlands	Repsol Exploración S.A.	Liquidation	April-19	F.C.	100.00%	0.00%	
Begas Motor, S.L.	Spain	Repsol Energy Ventures, S.A.	Decrease in interest	April-19	E.M.	8.26%	27.93%	
Repsol Exploración Liberia, B.V.	Netherlands	Repsol Exploración, S.A.	Liquidation	June-19	F.C.	100.00%	0.00%	
Repsol Exploración Liberia LB-10, B.V.	Netherlands	Repsol Exploración, S.A.	Liquidation	June-19	F.C.	100.00%	0.00%	
CSJC Eurotek - Yugra	Russia	Repsol Exploración Karabashsky, B.V.	Decrease in interest	August-19	E.M. (N.C.)	0.35%	71.16%	1
TV 05-2/10 Holding B.V.	Netherlands	Talisman International Holdings, B.V.	Liquidation	August-19	F.C.	100.00%	0.00%	
Talisman (Block K 44), B.V.	Iraq	Repsol Exploración, S.A.	Liquidation	September-19	F.C.	100.00%	0.00%	
Repsol Company of Portugal, Ltd. ⁽³⁾	Portugal	Repsol, S.A.	Absorption	September-19	F.C.	100.00%	0.00%	
Ampere Power Energy, S.L.	Spain	Repsol Energy Ventures, S.A.	Decrease in interest	November-19	E.M.	0.71%	7.18%	
CSJC Eurotek - Yugra	Russia	Repsol Exploración Karabashsky, B.V.	Decrease in interest	December-19	E.M. (N.C.)	0.39%	70.78%	1
Belmont Technology Inc., S.L.	Spain	Repsol Energy Ventures, S.A.	Decrease in interest	December-19	E.M.	1.31%	9.87%	
Principle Power Inc.	United States	Repsol Energy Ventures, S.A.	Decrease in interest	December-19	E.M.	2.46%	20.57%	
Saint John Gas Marketing Company	United States	Repsol St. John LNG, S.L.	Liquidation	December-19	F.C.	100.00%	0.00%	
Talisman (Pasangkayu) Ltd	Canada	Repsol Oil & Gas Canada Inc.	Liquidation	December-19	F.C.	100.00%	0.00%	
Talisman (Vietnam 46/02) Ltd	Canada	Repsol Oil & Gas Canada Inc.	Liquidation	December-19	F.C.	100.00%	0.00%	
Repsol E&P Canada ,Ltd.	Canada	Repsol Exploración S.A.	Liquidation	December-19	F.C.	100.00%	0.00%	

⁽¹⁾ Method of consolidation:

F.C.: Full consolidation

E.M.: Equity method. Joint Ventures are identified as "JV".

⁽²⁾ Company absorbed by Repsol Oil&Gas Canada

⁽³⁾ Company absorbed by Repsol Portuguesa, S.A.

For the year ended December 31, 2018

a) Business combinations, other acquisitions and acquisitions of interest in subsidiaries, joint ventures and/or associates:

Name	Country	Parent company	Item	Date	12.31.2018		
					Method of consolidation ⁽¹⁾	% voting rights acquired	% total voting rights in entity following acquisition ⁽²⁾
WIB Advance Mobility, S.L.	Spain	Repsol Comercial de Productos Petrolíferos, S.A.	Incorporation	March-18	E.M.(J.V.)	50.00%	50.00%
Repsol Jambi Merang, S.L.	Spain	Repsol Exploración, S.A.	Incorporation	April-18	F.C.	100.00%	100.00%
Repsol Exploración Jamaica, S.A.	Spain	Repsol Exploración, S.A.	Incorporation	July-18	F.C.	100.00%	100.00%
Valdesolar Hive, S.L.	Spain	Repsol Nuevas Energías, S.A.	Acquisition	July-18	F.C.	100.00%	100.00%
Repsol Bulgaria Khan Kubrat, S.A.	Spain	Repsol Exploración, S.A.	Incorporation	September-18	F.C.	100.00%	100.00%
Bardahl de Mexico, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A.	Acquisition	November-18	E.M.(J.V.)	40.00%	40.00%
Endomexicana Renta y Servicios, S.A. de C.V.	Mexico	Repsol Downstream Internacional, S.A.	Acquisition	November-18	E.M.(J.V.)	40.00%	40.00%
Viesgo Generación S.L.U.	Spain	Repsol Nuevas Energías, S.A.	Acquisition	November-18	F.C.	100.00%	100.00%
Viesgo Comercializadora de Referencia S.L.U.	Spain	Viesgo Generación S.L.	Acquisition	November-18	F.C.	100.00%	100.00%
Viesgo Energía, S.L.U.	Spain	Viesgo Generación S.L.	Acquisition	November-18	F.C.	100.00%	100.00%
CI Repsol Aviación Colombia, S.A.S.	Colombia	Repsol Downstream Internacional, S.A.	Incorporation	November-18	F.C.	100.00%	100.00%
Repsol Marketing France, S.A.S.U.	France	Repsol Downstream Internacional, S.A.	Incorporation	November-18	F.C.	100.00%	100.00%
Puma Energy Peru, S.A.C.	Peru	Repsol Comercial, S.A.C.	Acquisition	November-18	F.C.	100.00%	100.00%
Ezzing Renewable Energies S.L.	Spain	Repsol Energy Ventures S.A.	Acquisition	December-18	E.M.	22.22%	22.22%
Nanogap Sub n-m Powder S.A.	Spain	Repsol Energy Ventures S.A.	Acquisition	December-18	E.M.	8.78%	8.78%
Recreus Industries S.L.	Spain	Repsol Energy Ventures S.A.	Acquisition	December-18	E.M.	16.67%	16.67%
ASB Geo	Russia	Repsol Exploración, S.A.	Acquisition	December-18	E.M.(J.V.)	50.01%	50.01%

⁽¹⁾ Method of consolidation:

F.C.: Full consolidation

E.M.: Equity method. Joint Ventures are identified as "JV".

⁽²⁾ Corresponds to the percentage of equity in the acquired company.

b) Reduction in interest in subsidiaries, joint ventures, and/or associates and other similar transactions:

									12.31.2018		
Name	Country	Parent company	Item	Date	Method of consolidation ⁽¹⁾	% voting rights disposed or derecognized	% total voting rights in entity following disposal	Profit/(Loss) (€ Million)			
Repsol Oil & Gas Canada Inc.	Canada	Repsol Energy Resources Canada Inc.	Amalgamation ⁽²⁾	January-18	F.C.	100.00%	0.00%				
Rocsole OY	Finland	Repsol Energy Ventures, S.A.	Decrease in interest	February-18	E.M.	0.66%	12.50%				
Asfalnor, S.A.	Spain	Petróleos del Norte, S.A.	Liquidation	March-18	F.C.	100.00%	0.00%				
OGCI Climate Investments, Llp.	United Kingdom	Repsol Energy Ventures S.A.	Decrease in interest	April-18	E.M.	1.79%	12.50%				
Repsol Venezuela Gas, S.A.	Venezuela	Repsol Venezuela, S.A.	Absorption	May-18	F.C.	100.00%	0.00%				
Gas Natural SDG, S.A.	Spain	Repsol, S.A.	Sale	May-18	E.M.	20.07%	0.00%		344		
AESA - Construcciones y Servicios, S.A. - Bolivia	Bolivia	Repsol Bolivia, S.A.	Absorption	May-18	F.C.	100.00%	0.00%				
Repsol GLP de Bolivia, S.A.	Bolivia	Repsol Bolivia, S.A.	Absorption	May-18	F.C.	100.00%	0.00%				
Talisman Sierra Leone, B.V.	Netherlands	Talisman International Holdings, B.V.	Liquidation	May-18	F.C.	100.00%	0.00%				
Talisman Vietnam 05-2/10, B.V.	Netherlands	TV 05-2/10 Holding, B.V.	Liquidation	May-18	F.C.	100.00%	0.00%				
CSJC Eurotek - Yugra	Russia	Repsol Exploración Karabashsky, B.V.	Decrease in interest	June-18	E.M.(J.V.)	1.28%	72.33%		⁽³⁾		
Repsol Netherlands Finance, B.V.	Netherlands	Repsol International Finance, B.V.	Liquidation	June-18	F.C.	100.00%	0.00%				
Talisman Finance (UK) Limited	United Kingdom	TEGSI (UK) Ltd.	Liquidation	September-18	F.C.	100.00%	0.00%				
TE Finance S.a.r.l	Luxembourg	TE Holding S.a.r.l.	Absorption	November-18	F.C.	100.00%	0.00%				
Repsol Canada Inversiones, S.A.	Spain	Repsol Exploración, S.A.	Absorption	November-18	F.C.	100.00%	0.00%				
Talisman Energy Tangguh, B.V.	Netherlands	Talisman International Holdings, B.V.	Absorption	November-18	F.C.	100.00%	0.00%				
OGCI Climate Investments, Llp.	United Kingdom	Repsol Energy Ventures S.A.	Decrease in interest	November-18	E.M.	3.41%	9.09%				
Principle Power, Inc.	United States	Repsol Energy Ventures, S.A.	Decrease in interest	December-18	E.M.	1.24%	22.98%				
Repsol Exploración Venezuela, B.V.	Netherlands	Repsol Exploración S.A.	Liquidation	December-18	F.C.	100.00%	0.00%				
CSJC Eurotek - Yugra	Russia	Repsol Exploración Karabashsky, B.V.	Decrease in interest	December-18	E.M.(J.V.)	0.82%	71.51%				
Sociedade Açoreana de Armazenagem, S.A. ⁽³⁾	Portugal	Repsol Gas Portugal, S.A.	Sale	December-18	E.M.	25.07%	0.00%				
Spelta Produtos Petrolíferos Sociedade Unipessoal, Ltda. ⁽³⁾	Portugal	Repsol Gas Portugal, S.A.	Sale	December-18	F.C.	100.00%	0.00%				
Servicios y Operaciones de Peru S.A.C	Peru	Repsol Peru B.V.	Liquidation	December-18	F.C.	100.00%	0.00%				

⁽¹⁾ Method of consolidation:

F.C.: Full consolidation

E.M.: Equity method. Joint Ventures are identified as "JV".

⁽²⁾ Effective as of January 1, 2018, Repsol Oil & Gas Canada Inc. (ROGCI) and Repsol Energy Resources Canada Inc. were involved in a corporate reorganization process known under Canadian law as "vertical amalgamation"; as a result, these companies have been merged into a single company which has assumed the corporate name of Repsol Oil & Gas Canada Inc.

⁽³⁾ Companies sold to the Rubis Group. The profit from the sale was €21 million.

APPENDIX IC: JOINT OPERATIONS OF THE REPSOL GROUP AT DECEMBER 31, 2019

The Repsol Group's main Joint Operations (see Note 3) are shown below (including those in which the Group is involved through a joint arrangement)⁶¹:

Name	Interest ⁽¹⁾	Operator	Activity
Algeria			
El Merk (EMK) Field Unit Agt	9.10%	Groupement Berkin	Development/Production
Greater MLN	35.00%	Pertamina	Development/Production
Menzel Ledjimet Sud-Est /405a	35.00%	Pertamina	Development/Production
Ourhoud Field / 404,405,406a	2.00%	Organisation Ourhoud	Development/Production
Reggane Nord	29.25%	Groupement Reggane	Development/Production
Tin Fouye Tabenkort	22.62%	Groupement TFT	Development/Production
Australia			
JPDA 06-105 PSC	25.00%	ENI	Development/Production
Bolivia			
Arroyo Negro (Sara Boomerang III)	48.33%	YPF B Andina, S.A	Development/Production
Boqueron	48.33%	YPF B Andina, S.A	Development/Production
Camiri	48.33%	YPF B Andina, S.A	Development/Production
Carohuaicho 8B	24.17%	YPF B Andina, S.A	Exploration
Carohuaicho 8C	24.17%	YPFB Chaco	Exploration
Carohuaicho 8D	48.33%	YPF B Andina, S.A	Exploration
Cascabel	48.33%	YPF B Andina, S.A	Development/Production
Cobra	48.33%	YPF B Andina, S.A	Development/Production
Enconada	48.33%	YPF B Andina, S.A	Development/Production
Guairuy	48.33%	YPF B Andina, S.A	Development/Production
Huacaya	37.50%	Repsol	Development/Production
Iniguazu	37.50%	Repsol	Exploration
La Peña - Tundy	48.33%	YPF B Andina, S.A	Development/Production
Los Penocos (Sara Boomerang III)	48.33%	YPF B Andina, S.A	Development/Production
Los Sauces (Grigotá)	48.33%	YPF B Andina, S.A	Development/Production
Margarita-Huacaya	37.50%	Repsol	Development/Production
Monteagudo	39.67%	Repsol	Development/Production
Palacios	48.33%	YPF B Andina, S.A	Development/Production
Patujú	48.33%	YPF B Andina, S.A	Development/Production
Puerto Palos	48.33%	YPF B Andina, S.A	Development/Production
Rio Grande	48.33%	YPF B Andina, S.A	Development/Production
San Antonio-Sabalo	24.17%	Petrobras	Development/Production
San Alberto	24.17%	Petrobras	Development/Production
Sara Boomerang III	48.33%	YPF B Andina, S.A	Exploration
Sirari	48.33%	YPF B Andina, S.A	Development/Production
Víbora	48.33%	YPF B Andina, S.A	Development/Production
Yapacani	48.33%	YPF B Andina, S.A	Development/Production
Brazil			
Albacora Leste	6.00%	Petrobras	Development/Production
BM-C-33 (C-M-539)	21.00%	Equinor	Development/Production
BM-S-51 (S-M-619)	12.00%	Petrobras	Exploration
BM-S-50 (S-M-623) Sagitario	12.00%	Petrobras	Exploration
BM-S-9 Sapinhoá	15.00%	Petrobras	Development/Production
BM-S-9 PSC Sapinhoá	15.00%	Petrobras	Development/Production
BM-S-9A Lapa	15.00%	Total	Development/Production
C-M-821	40.00%	Repsol	Exploration
C-M-823	40.00%	Repsol	Exploration
S-M-764	40.00%	Chevron	Exploration
Bulgaria			

⁶¹ Joint operations in the Upstream segment include the blocks of joint operations where the Group holds acreage for exploration, development and production of oil and gas.

Name	Interest ⁽¹⁾	Operator	Activity
1_21 Han Asparuh	30.00%	Total	Exploration
1-14 Khan Kubrat	20.00%	Shell	Exploration
Canada ⁽²⁾			
Chauvin Alberta	63.00%	Repsol	Development/Production
Chauvin Saskatchewan	92.00%	Repsol	Development/Production
Edson	79.00%	Repsol	Development/Production
Groundbirch Saturn No Montney Rights	35.00%	Others	Development/Production
Misc. Alberta	54.00%	Repsol	Exploration
Misc. British Columbia	88.00%	Repsol	Exploration
Misc. Saskatchewan	74.00%	Repsol	Exploration
Northwest Territories	4.00%	Others	Exploration
Nunavut	2.00%	Others	Exploration
Wild River Region	56.00%	Repsol	Development/Production
Yukon	2.00%	Others	Exploration
Colombia			
CPO-9 Akacias Production Area	45.00%	Ecopetrol	Development/Production
Caguan 5	50.00%	Frontera Energy	Exploration
Caguan 6	40.00%	Frontera Energy	Exploration
Catleya	50.00%	Repsol	Exploration
Chipirón	8.75%	Ecopetrol	Development/Production
COL-4	50.01%	Repsol	Exploration
CPE-8	50.00%	Repsol	Exploration
CPO-9 - Exploration Area	45.00%	Ecopetrol	Exploration/Production
Cravo Norte	5.63%	Oxycol	Development/Production
Gua Off 1	50.00%	Repsol	Exploration
Mundo Nuevo	30.00%	Equion	Exploration
Piedemonte	22.05%	Equion	Development/Production
RC-12	50.00%	Repsol	Exploration
Cosecha	17.50%	Oxycol	Development/Production
Rondón	6.25%	Oxycol	Development/Production
Tayrona	20.00%	Petrobras	Exploration
Ecuador			
Block 16	35.00%	Repsol	Service Contract
Tivacuno	35.00%	Repsol	Service Contract
Spain			
Albatros	82.00%	Repsol	Development/Production
Angula	53.85%	Repsol	Development/Production
Boquerón	61.95%	Repsol	Development/Production
Casablanca - Montanazo Unificado	68.67%	Repsol	Development/Production
Casablanca No Unificado	67.35%	Repsol	Development/Production
Montanazo D	72.44%	Repsol	Development/Production
Rodaballo	65.42%	Repsol	Development/Production
United States ⁽²⁾			
<u>Alaska</u>			
North Slope Horseshoe project (49 blocks)	49.00%	Oil Search	Exploration
North Slope Grizzly project (36 blocks)	49.00%	Oil Search	Exploration
North Slope Pikka	25.00%	Oil Search	Exploration
North Slope Exploration 25%	25.00%	Oil Search	Exploration
North Slope Exploration 37,24% (136 blocks)	37.24%	Oil Search	Exploration
North Slope Exploration 49% (79 blocks)	49.00%	Oil Search	Exploration
North Slope Development	49.00%	Oil Search	Development/Production
<u>Gulf of Mexico</u>			
Alaminos Canyon Blacktip project (4 blocks)	8.50%	Shell	Exploration
Garden Banks Blacktail project (4 blocks)	50.00%	Repsol	Exploration
Green Canyon - Shenzi (6 blocks)	28.00%	BHP	Development/Production

Name	Interest ⁽¹⁾	Operator	Activity
Green Canyon Dragon	40.00%	Murphy	Exploration
Keathley Canyon Leon (4 blocks)	50.00%	Llog	Exploration
Keathley Canyon Buckskin (6 blocks)	22.50%	Llog	Development/Production
Keathley Canyon Moccasin	30.00%	Llog	Exploration
Walker Ridge Monument project (6 blocks)	20.00%	Equinor	Exploration
Walker Ridge Mollerusa (4 blocks)	60.00%	Repsol	Exploration
Marcellus			
Marcellus New York (*) Exploration Unconventional	99.81%	Repsol	Exploration
Marcellus New York	86.66%	Repsol	Development/Production
Marcellus Pennsylvania	83.33%	Repsol	Development/Production
Greece			
Aitolokarnania	60.00%	Repsol	Exploration
Ioannina	60.00%	Repsol	Exploration
Ionian Block	50.00%	Repsol	Exploration
Guyana			
Kanuku	37.50%	Repsol	Exploration
Indonesia			
Andaman III	51.00%	Repsol	Exploration
Corridor PSC	36.00%	Conoco	Development/Production
East Jabung	51.00%	Repsol	Exploration
South Sakakemang	80.00%	Repsol	Exploration
Sakakemang	45.00%	Repsol	Exploration
South East Jambi	67.00%	Repsol	Exploration
Ireland			
FEL 3/04 (Dunquin)	33.56%	ENI	Exploration
Libya			
NC-115 (Development)	20.00%	Akakus	Development/Production
NC-115 (Exploration)	40.00%	Repsol	Exploration
NC-186 (Development)	16.00%	Akakus	Development/Production
NC-186 (Exploration)	32.00%	Repsol	Exploration
Malasia			
PM-03 CAA	35.00%	Repsol	Development/Production
PM-305	60.00%	Repsol	Development/Production
PM-314	60.00%	Repsol	Development/Production
2012 Kinabalu Oil Fields	60.00%	Repsol	Development/Production
Morocco			
Tanfit	37.50%	Repsol	Exploration
Mexico			
Bloque 10	40.00%	Repsol	Exploration
Bloque 11	60.00%	Repsol	Exploration
Bloque 14	50.00%	Repsol	Exploration
Bloque 29	30.00%	Repsol	Exploration
Norway			
PL 019 F	61.00%	Repsol	Development/Production
PL 019 G	61.00%	Repsol	Development/Production
PL 019B	61.00%	Repsol	Development/Production
PL 025	15.00%	Equinor	Development/Production
PL 038C	70.00%	Repsol	Development/Production
PL 052	27.00%	Equinor	Development/Production
PL 053B	33.84%	Wintershall DEA	Development/Production
PL 055	33.84%	Wintershall DEA	Development/Production
PL 055B	33.84%	Wintershall DEA	Development/Production
PL 055D	33.84%	Wintershall DEA	Development/Production
PL 092 Mikkel	7.65%	Equinor	Development/Production

Name	Interest ⁽¹⁾	Operator	Activity
PL 1024	70.00%	Repsol	Exploration
PL 120	11.00%	Equinor	Development/Production
PL 120 CS	11.00%	Equinor	Development/Production
PL 121 Mikkell	7.65%	Equinor	Development/Production
PL 185	33.84%	Wintershall DEA	Development/Production
PL 187	15.00%	Equinor	Exploration
PL 316	55.00%	Repsol	Development/Production
PL 316B	55.00%	Repsol	Development/Production
PL 528	6.00%	Centrica R. Norge	Exploration
PL 528B	6.00%	Centrica R. Norge	Exploration
PL 847	20.00%	Wintershall DEA	Exploration
PL 847B	20.00%	Wintershall DEA	Exploration
PL 909	70.00%	Repsol	Exploration
PL 910	61.11%	Repsol	Exploration
PL 913	50.00%	OMV	Exploration
PL 913 B	50.00%	OMV	Exploration
PL 972	40.00%	Repsol	Exploration
PL 976	30.00%	Lundin	Exploration
Papua New Guinea			
PDL 10	40.00%	Repsol	Development/Production
PPL 261	50.00%	Repsol	Exploration
PRL 8	22.29%	Oil Search	Exploration
PRL 21	35.10%	Horizon Oil	Exploration
PRL 28	37.50%	Eaglewood	Exploration
PRL 40	60.00%	Repsol	Exploration
Peru			
Bloque 56	10.00%	Pluspetrol	Development/Production
Bloque 57	53.84%	Repsol	Development/Production
Bloque 88	10.00%	Pluspetrol	Development/Production
Iraq			
Topkhana	80.00%	Repsol	Development/Production
United Kingdom			
P534 (98/06a-Wareham)	2.55%	Perenco	Development/Production
P534 (98/06a-Wych Farm UOA)	2.53%	Perenco	Development/Production
PL089 (SZ/8, SY/88b, SY/98a)	2.55%	Perenco	Development/Production
P201 (16/21a)	7.65%	Premier	Development/Production
P201 (16/21d)	7.65%	Premier	Development/Production
P344 (16/21b_F1*-Balmoral Field Area)	8.06%	Premier	Development/Production
P344 (16/21c_f1*)	7.81%	Premier	Development/Production
P344 (16/21c_f1*-Balmoral)	8.06%	Premier	Development/Production
P019 (22/17n)	30.08%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P020 (22/18n)	30.08%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P073 (30/18_E)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P111 (30/3a Blane Field)	30.75%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P111 (30/3a Upper)	15.55%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P116 (30/16n)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P185 (30/11b)_Developm.	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P219 (16/13a)	16.07%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P220 (15/17n-F2- Piper+ rest of Block)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P237 (15/16a)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P240 (16/22a- non Arundel Area)	18.86%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P241 (21/1c)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P241/P244 (21/1c/21/2a- Cretaceous Area West)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P244 (21/2a)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P249 (14/19n - Residual -Claymore)_Dev&Explo	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P249 (14/19n_F1- Claymore)	47.16%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P249 (14/19n_F2- Scapa/Claymore)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P250 (14/19s- F1)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production

Name	Interest ⁽¹⁾	Operator	Activity
P250 (14/19s- Rest of Block)_Develop	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P256 (30/16s)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P263 (14/18a)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P266 (30/17b)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P291 (22/17s)	30.08%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P291 (22/22a)	30.08%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P291 (22/23a)	30.08%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P292 (22/18a)	30.08%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P295 (30/16a)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P295 (30/16b)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P295 (30/16c)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P295 (30/16t)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P297 (13/28a)_Devel.	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P307 (13/29a)_Devel.	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P324 (14/20b)	25.50%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P324 (14/20b-Claymore Extension)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P324 (14/20b-f1+f2)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P324 (15/16b)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P324 (15/23a)_Developm.	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P344 (16/21b Rest of Block)	30.60%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P344 (16/21c*- Rest of block excluding Stirling)	30.60%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P729 (13/29b - Blake Ext Non Skate_Devel.)	40.80%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P729 (13/29b - Ross Unitised Field UUOA interests)	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P810 (13/24b Blake Area)	34.53%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P810 (13/24b-Rest of Block)_dev&explo	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P973 (13/28c)	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P255 (30/14 Cawdor Sub Area)_Develop.	4.94%	Total	Development/Production
P255 (30/14 Flyndre Area)	3.83%	Total	Development/Production
P255 (30/19a Affleck)	16.98%	Total	Development/Production
P073 (30/18_W)	51.00%	Repsol Sinopec Resources UK, Ltd.	Exploration
P079 (30/13a)	31.88%	Repsol Sinopec Resources UK, Ltd.	Exploration
P101 (13/24a)	34.53%	Repsol Sinopec Resources UK, Ltd.	Exploration
P185 (30/11b)	30.60%	Repsol Sinopec Resources UK, Ltd.	Exploration
P185 (30/12b)	30.60%	Repsol Sinopec Resources UK, Ltd.	Exploration
P250 (14/19a)	51.00%	Repsol Sinopec Resources UK, Ltd.	Exploration
P297 (13/28a)	33.06%	Repsol Sinopec Resources UK, Ltd.	Exploration
P307 (13/29a)	36.55%	Repsol Sinopec Resources UK, Ltd.	Exploration
P324 (15/23a)	51.00%	Repsol Sinopec Resources UK, Ltd.	Exploration
P593 (20/05c)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P983 (13/23b)	25.50%	Repsol Sinopec Resources UK, Ltd.	Exploration
P534 (98/07a)	2.55%	Perenco	Exploration
P225 (16/27a- Contract Area 3)	13.50%	JX Nippon	Exploration
P225 (16/27a- Contract Area 3 Andrew Field Area)	5.03%	BP	Development/Production
Russia			
Alkanovskoe	49.00%	AROG	Development/Production
Avgustovskoe	49.00%	AROG	Development/Production
Bazhkovskoe	49.00%	AROG	Development/Production
Borshevskoe	49.00%	AROG	Development/Production
Karabashskiy 1	70.78%	Eurotek Yugra	Exploration
Karabashskiy 2	70.78%	Eurotek Yugra	Exploration
Karabashskiy 3	70.78%	Eurotek Yugra	Exploration
Karabashskiy 9	70.78%	Eurotek Yugra	Exploration
Kileyskiy	70.78%	Eurotek Yugra	Exploration
Kochevnskoe	49.00%	AROG	Development/Production
Kovalevskoe	49.00%	AROG	Development/Production
Kulturenskoe	49.00%	AROG	Development/Production
North-Borshevskoe	49.00%	AROG	Development/Production
Novo-Kievskoe	49.00%	AROG	Development/Production
Penzenskoe	49.00%	AROG	Development/Production

Name	Interest ⁽¹⁾	Operator	Activity
Saratovskoe	49.00%	AROG	Development/Production
Solnechnoe	49.00%	AROG	Development/Production
South-Kultashikhskoe	49.00%	AROG	Development/Production
South-Solnechnoe	49.00%	AROG	Development/Production
Stepnoozerskoe	48.79%	AROG	Development/Production
Sverdlovsky 4	70.78%	Eurotek Yugra	Exploration
West-Avgustovskoe	49.00%	AROG	Development/Production
West-Kochevnskoe	49.00%	AROG	Development/Production
Elginskoe (Development)	48.79%	AROG	Development/Production
Elginskoe (Exploration)	48.79%	AROG	Exploration
Cheremushkiy	49.00%	AROG	Exploration
East-Kulturnenskiy	49.00%	AROG	Exploration
West-Borshevskoe	48.79%	AROG	Development/Production
Karabashkiy 10	50.01%	ASB Geo	Exploration
Novenkoe	49.00%	AROG	Development/Production
Petrovskoe	49.00%	AROG	Development/Production
Pushkarihinskiy	49.00%	AROG	Exploration
Verblyuzhe	49.00%	AROG	Development/Production
Trinidad & Tobago			
5B Manakin	30.00%	BpTT	Development/Production
East Block	30.00%	BpTT	Development/Production
S.E.C.C. (IBIS)	10.80%	EOG	Development/Production
West Block	30.00%	BpTT	Development/Production
Venezuela			
Barua Motatan	40.00%	Petroquiriquire	Development/Production
Carabobo	11.00%	Petrocarabobo	Development/Production
Cardón IV Oeste	50.00%	Cardon IV	Development/Production
Mene Grande	40.00%	Petroquiriquire	Development/Production
Quiriquire	40.00%	Petroquiriquire	Development/Production
Quiriquire Gas	60.00%	Quiriquire Gas	Development/Production
Yucal Placer Norte	15.00%	Total	Development/Production
Yucal Placer Sur	15.00%	Total	Development/Production
Vietnam			
Block 07/03 Cobia Area	51.75%	Repsol	Exploration
Block 07/03 CRD Area ⁽³⁾	51.75%	Repsol	Development/Production
Block 133 & 134	49.00%	Repsol	Exploration
Block 135 & 136 ⁽³⁾	40.00%	Repsol	Exploration
Block 146 & 147	80.00%	Repsol	Exploration
Block 46-CN	70.00%	Repsol	Development/Production
Block 15-2/01	60.00%	Thang Long JOC	Development/Production
Block 16-1 (TGT- Unitization)	0.67%	Hoang Long JOC	Development/Production
DOWNSTREAM			
Canada			
Canaport LNG Ltd Partnership	75.00%	Repsol	Regasification GNL
Spain			
Asfaltos Españoles, S.A.	50.00%	Repsol	Asphalts
Iberian Lube Base Oils Company, S.A.	30.00%	SK Lubricants	Lubricants and specialized products

⁽¹⁾ Corresponds to the Group company's interest in the joint arrangement.

⁽²⁾ Mining domain rights in Canada and the United States are articulated over a large number of Joint Operating Agreements (JOAs). They have been grouped by geographical areas and Repsol's interest.

⁽³⁾ Assets whose activity is suspended (see Note 21.3)

APPENDIX II: SEGMENT REPORTING AND RECONCILIATION WITH EU-IFRS FINANCIAL STATEMENTS⁶²

Income Statement figures

The reconciliation between adjusted net income and EU-IFRS net income at December 31, 2019 and 2018, is as follows:

Results	€ Million											
	ADJUSTMENTS											
	Adjusted net income		Reclassifications of joint ventures		Special items		Inventory effect		Total adjustments		Net income under EU-IFRS	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Operating income	3,661	4,396	(529)	(1,204)	(6,343)	(633)	(40)	(106)	(6,912)	(1,943)	(3,251)	2,453
Financial result	(390)	(462)	111	130	(22)	159	—	—	89	289	(301)	(173)
Net income from equity affiliates	22	15	324	965	5	72	—	1	329	1,038	351	1,053
Income before tax	3,293	3,949	(94)	(109)	(6,360)	(402)	(40)	(105)	(6,494)	(616)	(3,201)	3,333
Income tax	(1,227)	(1,569)	94	109	536	46	9	28	639	183	(588)	(1,386)
Income from continuing operations	2,066	2,380	—	—	(5,824)	(356)	(31)	(77)	(5,855)	(433)	(3,789)	1,947
Income attributed to minority interests	(24)	(28)	—	—	1	1	(4)	9	(3)	10	(27)	(18)
Net income from continuing operations	2,042	2,352	—	—	(5,823)	(355)	(35)	(68)	(5,858)	(423)	(3,816)	1,929
Net income from discontinued operations	—	—	—	—	—	412	—	—	—	412	—	412
TOTAL NET INCOME ATTRIBUTED TO THE PARENT	2,042	2,352	—	—	(5,823)	57	(35)	(68)	(5,858)	(11)	(3,816)	2,341

Segments	€ Million											
	Revenue ⁽²⁾		Net income from operations		Provisions for amortization of fixed assets ⁽³⁾		Impairment income / (expenses)		Net income from entities valued using the equity method		Income tax	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Upstream	6,904	7,699	1,969	2,514	(2,157)	(2,068)	(5,998)	(1,424)	29	22	(212)	(1,113)
Downstream	46,810	47,029	1,928	2,143	(1,047)	(790)	205	(55)	(2)	(6)	(639)	(425)
Corporate	(1,681)	(2,021)	(236)	(261)	(85)	(78)	(2)	—	(5)	(1)	169	43
Adjusted figures⁽¹⁾	52,033	52,707	3,661	4,396	(3,289)	(2,936)	(5,795)	(1,479)	22	15	(682)	(1,495)
Adjustments:												
Upstream	(2,220)	(2,517)	(6,885)	(1,651)	836	784	473	413	304	1,004	89	96
Downstream	(485)	(317)	17	(204)	19	12	—	—	26	35	5	13
Corporate	—	—	(44)	(88)	—	—	—	—	(1)	(1)	—	—
EU-IFRS FIGURES	49,328	49,873	(3,251)	2,453	(2,434)	(2,140)	(5,322)	(1,066)	351	1,053	(588)	(1,386)

⁽¹⁾ Figures drawn up according to the Group's reporting model described in Note 4.

⁽²⁾ The revenue figure corresponds to the sum of the "Sales" and "Services rendered and other income". The itemization by provenance (customers or inter-segment transactions) is as follows:

Segments	€ Million					
	Customers		Inter-segment		Total	
	2019	2018	2019	2018	2019	2018
Upstream	5,270	5,699	1,634	2,000	6,904	7,699
Downstream	46,763	47,007	47	22	46,810	47,029
Corporate	1	1	—	—	1	1
(-) Adjustments and eliminations of operating income between segments	(1)	—	(1,681)	(2,022)	(1,682)	(2,022)
TOTAL	52,033	52,707	—	—	52,033	52,707

⁽³⁾ Including depreciation of failed exploratory drilling. For more information, see Note 20.

⁶² Some of these metrics presented in this Appendix are Alternative Performance Metrics (APMs) in accordance with European Securities Markets Authority (ESMA) guidelines. For further information, see Appendix I of the Consolidated Management Report.

Balance sheet figures

Segments	€ Million							
	Non-current assets		Net operating investments ⁽²⁾		Capital employed ⁽³⁾		Investments accounted for using the equity method	
	2019	2018	2019	2018	2019	2018	2019	2018
Upstream	21,115	25,514	2,429	1,973	17,205	21,515	217	387
Downstream	12,814	11,118	1,376	1,831	14,078	11,338	42	21
Corporate	740	733	56	70	2,009	1,500	—	18
ADJUSTED FIGURES ⁽¹⁾	34,669	37,365	3,861	3,874	33,292	34,353	259	426
Adjustments:								
Upstream	(6,593)	(6,422)	(499)	(365)	2,539	2,659	6,563	6,425
Downstream	(270)	(205)	(28)	(41)	44	64	414	341
Corporate	—	—	—	—	—	—	1	2
EU-IFRS FIGURES	27,806	30,738	3,334	3,468	35,875	37,076	7,237	7,194

⁽¹⁾ Figures drawn up according to the Group's reporting model described in Note 4.

⁽²⁾ Excludes "Non-current financial investments", "Deferred tax assets" and "Other non-current assets".

⁽³⁾ Includes capital employed corresponding to joint ventures, non-current non-financial assets, operating working capital and other non-financial liability headings.

Cash flow figures

The reconciliation of the cash flow from operations to free cash flow with the EU-IFRS Statement of Cash Flows at December 31, 2019 and 2018 is as follows:

	At December 31					
	Adjusted cash flow		Reclassification of joint ventures and others		EU-IFRS statement of cash flow	
	2019	2018	2019	2018	2019	2018
I. Cash flows from / (used in) operating activities (cash flow from operations)	5,837	5,428	(988)	(849)	4,849	4,579
II. Cash flows from / (used in) investing activities	(3,777)	(372)	(630)	(987)	(4,407)	(1,359)
Free cash flow (I+II)	2,060	5,056	(1,618)	(1,836)	442	3,220

APPENDIX III: REGULATORY FRAMEWORK

The activities of Repsol, S.A. and its subsidiaries are subject to extensive regulation, the key aspects of which are described below.

Spain

Basic legislation

Spain currently has legislation which implements a liberalization of the Oil Industry, an example of which is the Hydrocarbons Sector Law 34/1998 of October 7 ("LSH"), which has been amended by several legislative acts.

Law 2/2011, of March 4, on Sustainable Economy, modified the Hydrocarbons Sector Law, establishing binding guidelines for energy planning under criteria designed to contribute to create a safe, cost-effective, economically-sustainable, and environmentally-friendly energy system.

Law 3/2013 of June 4, on the creation of the Spanish National Markets and Competition Commission (CNMC - "Comisión Nacional de los Mercados y la Competencia," in Spanish), created as an overseeing body, charged with the duties and tasks relating to supervision and control of regulated markets, which were previously supervised by various National Commissions, including the Energy and Competition.

Royal Decree Law 1/2019, of January 11, proceeds with returning to the CNMC the competencies that were taken away in 2014, thus bringing the competencies of the CNMC into line with the requirements of EU law in relation to Directives 2009/72/CE and 2009/73/CE of the European Parliament and Council, of 13 July 2009, concerning common rules for the internal market in electricity and natural gas.

Controlling concentration regime in the energy sector

The aforementioned Law 3/2013 modified the regime controlling corporate transactions in the energy sector, allocating duties to the Ministry for the Ecological Transition (MITECO). It devises a new *ex post* regime with respect to certain transactions by either requiring the buyer to notify MITECO of the execution of certain transactions or by means of the imposition of conditions on the business operations of the companies acquired, in so far as energy supply in Spain is deemed threatened.

A new development of this new control regime is that in addition to extending to the electricity and gas sectors, it now extends to the liquid hydrocarbons sector including companies that pursue refining activities, pipeline transportation, and storage of oil products, or companies that hold title to said assets, which become strategic assets.

Principal operators and dominant operators

Under Royal Decree Law 5/2005, of March 11, the Spanish National Energy Commission (currently the CNMC) is required to publish not only the list of principal operators but also the dominant operators in each energy market or sector. Dominant operators are defined as those holding a share of more than 10% of the benchmark market. On the other hand, a principal operator is considered an operator ranked among the top five players by market share. Designation as a dominant operator or principal operator implies certain regulatory restrictions.

Hydrocarbon exploration and production

Hydrocarbon fields and underground storage located in Spanish territory and in the territorial marine subsoil and ocean bottoms which are under Spanish sovereignty are considered public properties.

Exploration permits are granted by national or regional governments, depending on whether autonomous areas are affected, and exclusive investigation rights for the area in question are granted for periods lasting six years. In turn, the concession for operating hydrocarbon fields grants the owners exclusive rights to operate the field for 30 years, renewable for two successive ten-year periods, as well as the right to continue exploration activities in these areas and obtain authorization to sell the hydrocarbon

products they obtain.

Law 8/2015, regulating specific tax and non-tax measures related to hydrocarbon exploration, research and operation activities, fosters non-conventional extraction, or fracking and creates an incentive regime for regional and local governments that pursue such activities, as well as a scheme for land owners to share in the profits derived from the related extraction activity.

Royal Decree Law 16/2017, establishing safety provisions for hydrocarbon research and operation in the marine environment, implemented by Royal Decree 1339/2018, of October 29, transposes Directive 2013/30/EU, of 12 June 2013 on safety of offshore oil and gas operations ("Offshore Directive") into Spanish law. The purpose of the Law is to establish minimum requirements that offshore hydrocarbon research and operations must meet to prevent major accidents, to mitigate their consequences and to define action principles to ensure that offshore operations (including operations undertaken outside the EU) are performed employing a systematic risk management approach to ensure that the residual risk of serious accidents is considered acceptable.

With regard to offshore activity, Law 41/2010, of December 29, on the protection of the marine environment, regulates marine strategies as planning instruments for the five marine districts into which the Spanish marine environment is divided. The authorization of any activity that requires carrying out works or installations in marine waters, their bed or their subsoil, or the placement or deposit of materials on the seabed, or discharges regulated in Title IV of the Law, must have a favorable report from the relevant Ministry regarding its compatibility with the marine strategy. Royal Decree 79/2019, of February 22, regulates and implements the procedure for processing this report and establishes the criteria for compatibility with the marine strategies, and is applicable in the case of the modification, renewal or extension of existing actions.

Oil products

The price of oil products is deregulated, with the exception of LPG (see specific information below).

In the retail side of the business, exclusive supply contracts for the distribution of motor fuels have a maximum term of one year, and they can be automatically rolled over for additional one-year periods at the sole discretion of the distributor, for a maximum of three years. The new legislation also bans clauses that set, recommend or influence, directly or indirectly, the price at which fuel is sold to the public.

Additionally, it establishes limits on growth in the number of fuel supply facilities of wholesalers with provincial markets shares of over 30%. Law 8/2015 stipulates that this market share shall no longer be measured in terms of points of sale but rather based on sales figures for the previous year, allowing the government to revise this percentage threshold in three years' time or even remove the restriction altogether, market trends and the sector's business structure so permitting. This period has elapsed without the government having reviewed the above measure for the time being.

Finally, Law 8/2015 allows owners of oil product retailers to supply products to other retail distributors, simply by registering in advance with the excise tax registry.

Minimum stocks

Royal Decree 1766/2007, regulates the obligation to maintain a minimum stocks in the oil and natural gas sectors, the obligation to diversify the supply of oil and natural gas, and the activities of the Corporation of Strategic Reserves of Oil Products (CORES for its acronym in Spanish).

The obligation to maintain minimum stocks of oil products in Spain for security reasons, excluding LPG, currently requires storing at all times an amount equivalent to 92 days of sales based on the sales during the previous 12 months. Repsol must maintain stocks corresponding to 50 days of sales, while the remaining stocks are held by CORES on behalf of the various operators (strategic reserves) until the obligation established has been met.

Royal Decree Law 15/2013, of December 13, introduces an amendment to the Hydrocarbon Sector Law, indicating that via regulation, administrative procedures and obligations needed to ensure, on an ongoing basis, a minimum safety buffer equivalent to at least the higher of the volume corresponding to 90 days of average net daily imports and 61 days of average internal daily consumption corresponding to the year of reference and measured in oil equivalent.

LPG

Under certain circumstances, LPG prices are subject to retail price ceilings. The prices of bulk LPG and bottled LPG in cylinders with capacity of under 8 kg or over 20 kg are deregulated. Law 18/2014, of October 15, has had the effect of also deregulating the prices of containers with capacity of more than 8 kg or less than 20 kg with a tare weight of no more than 9 kg, with the exception of LPG mixes intended for use for fuel purposes; this measure favors certain players over others as a function of the tare weight of the containers sold and, in practice, does not constitute full sector deregulation.

Ministerial Order IET/389/2015, of March 5, 2015, updates the system for automatically determining the maximum price at which bottled LPG can be retailed and for determining the price of piped LPG, adjusting the formulae used to calculate raw material costs in order to, as per the wording of the Order, adapt them "to the supply reality in the Spanish market in recent years". Adaptation of these formulae does not apply to sales costs, thereby resulting in a reduction in maximum bottled LPG retail prices and piped LPG retail prices.

Additionally, Law 18/2014 consolidate users' right to home delivery of containers weighing between 8 kg and 20 kg by obliging the LPG wholesalers with the biggest market shares in the corresponding mainland and island territories to perform this home-delivery service. Failure to fulfill this obligation constitutes a very serious offense. The list of LPG wholesalers so obliged is determined by a resolution issued by the General Directorate of Energy Policy and Mining every 3 years. Every 5 years, the Spanish government is entitled to revise the terms of this obligation and has the power to remove it. The current list of mandatory home suppliers is as follows: Repsol Butano on the mainland and in the Balearic Islands, DISA in the Canary Islands and Atlas in Ceuta and Melilla.

On November 28, 2019, the Supreme Court handed down judgments dismissing two appeals for judicial review filed by Repsol Butano and Disa Gas against Ministerial Order IET/389/2015, of March 5, and indirectly against Articles 57 and 58 of Law 18/2014, of October 15, applied by the Order under appeal. This regulatory framework excludes LPG containers with a load equal to or greater than 8 kg and less than 20 kg, with a tare weight of more than 9 kg, from the deregulation introduced by Law 18/2014; it establishes an obligation for LPG wholesale operators with a greater market share in certain territories to supply residential homes and, lastly, it maintains the regulated price of containers with a tare weight of less than 9 kg for operators required to supply residential homes that do not have containers with a tare weight greater than that mentioned, in the corresponding territory. This framework particularly affects Repsol Butano, which is the majority operator on the mainland and the Balearic Islands, and whose fleet consists mainly of heavy containers with a tare weight of more than 9 kg.

Natural gas

Law 12/2007, of July 2, which amended the Hydrocarbon Sector Law, incorporated measures for achieving a completely liberalized market. This legislation establishes the framework for eliminating the tariff system and creates the role of the supplier of last resort with ultimate liability for supplying customers lacking sufficient bargaining power. Moreover, these suppliers are subject to a price cap ("last resort tariff"), set by MITECO. Business operations in the natural gas sector can be classified into: i) regulated activities: transport (including storage, regasification and transport per se) and distribution of natural gas; and ii) deregulated activities: production, acquisition and marketing of natural gas. The Natural Gas System Operator, Enagás S.A., is responsible for the coordinating and ensuring that the system works properly. Law 8/2015 creates an official natural gas hub with a view to facilitating entry into the market of new suppliers and increasing competition, creating a new single hub operator, tasked with management of the gas hub, the MIBGAS (which stands for Iberian Gas Market in Spanish), which ensures that all participating entities comply with

the established rules.

Electricity sector regulation in Spain

Deregulation of the Spanish electricity sector began in 1997 with the approval of Electricity Sector Law 54/1997, of November 27, amended by Law 17/2007, of July 4, and later by Electricity Sector Law 24/2013, of December 26.

Production and sale activities continue to be deregulated, governed by competition, while transmission, distribution and the system's technical and financial management remain as regulated activities, characterized by access that requires administrative authorization, and their remuneration is established by regulations and subject to specific obligations. Power supply, for its part, is classified as a service of general economic interest.

Royal Decree 413/2014 regulates the legal and economic regime governing the production of electricity using renewable sources, combined heat and power systems and waste, and affects the Repsol Group's facilities, formerly part of the now-defunct special regime and now assimilated into the ordinary regime. Ministerial Order IET/1045/2014, of June 16, meanwhile, enacts the standard facility remuneration parameters applicable to certain electricity-producing facilities that use renewable energy sources, CHP systems or waste. Royal Decree 900/2015, of October 9, regulating the administrative, technical and financial conditions was passed, which governs the permitted forms of electricity distribution and generation with self-consumption. This Royal Decree 900/2015 has been substantially modified by Royal Decree Law 15/2018 and now by Royal Decree 244/2019, of April 5, regulating the administrative, technical and economic conditions for self-consumption in Spain. This regulation supplements the regulatory framework promoted by Royal Decree Law 15/2018, the main measure of which was to repeal the so-called "sun tax", and represents a new energy panorama that is committed to a model based on distributed generation and renewable energies. Among the many new developments, the following are worth mentioning:

- Recognition of the figure of shared self-consumption, which provides the possibility that several users may benefit from the same generating facility.
- Simplification of bureaucratic procedures and deadlines for the legalization of facilities.
- Introduction of simplified compensation for generation surpluses. Self-consumed energy from renewable sources, combined heat and power systems or waste, as well as surplus energy released into the transmission and distribution network, will be exempt from all types of charges and fees.

Ministerial Order ETU/130/2017, of February 17, updated the remuneration parameters of standard facilities applicable to certain facilities producing electricity from renewable energy sources, combined heat and power systems and waste, in order to be applied to the regulatory half period commencing on January 1, 2017.

a. Remuneration system for generation activity

Law 24/2013, of December 26, abandons the differentiated concepts of ordinary and special regime, without prejudice to the singular considerations that need to be established. The remuneration system for renewable energies, combined heat and power systems and waste is based on the market share of these facilities, complementing market income with a specific regulated remuneration that allows these technologies to compete on an equal footing with the rest of the technologies on the market. This additional specific remuneration must be sufficient to achieve the minimum level necessary to cover costs which, unlike conventional technologies, cannot be recouped on the market and will enable them to obtain adequate profitability with reference to the standard facility in each applicable case. The rate of return for the activity of production from renewable energy sources, combined heat and power systems and waste, for the first regulatory period, is established in Royal Decree Law 9/2013, of July 12, which adopts urgent measures to ensure the financial stability of the electricity system. For the purpose of calculating the specific remuneration, the following shall be taken into account for a standard facility: the income from the sale of the generated energy valued at the production market price, the average

operating costs necessary to carry out the activity and the value of the initial investment of the standard facility.

Royal Decree 359/2017, of March 31, established a call for the granting of the specific remuneration system to new facilities producing electricity from renewable energy sources in the peninsular electricity system, and Ministerial Order ETU/315/2017, of April 6, regulated the procedure for assigning the specific remuneration system. In turn, and for 2016 calls only for biomass and wind through Royal Decree 947/2015 and Ministerial Order IET/2212/2015, and the 2nd auction in 2017 through Royal Decree 650/2017 and Ministerial Order ETU/615/2017), similar to the 1st of that year and open to all technologies.

b. Remuneration system for marketing activity

The marketing activity is based on the principles of freedom of contract and choice of supplier by the customer. Marketing, as a deregulated activity, has a freely agreed remuneration between the parties.

Of note is Law 24/2013, subsequently developed by Royal Decree 216/2014, of March 28, which establishes the methodology for calculating voluntary prices for small electricity consumers and their legal contracting regime. These prices are defined, in line with the previously denominated last resort tariffs, as the maximum prices that reference resellers may charge to consumers who use them (consumers of less than a certain contracted power, 10 kW, who wish to use this modality as opposed to a bilateral negotiation with a free reseller). These prices will be unique throughout the entire Spanish territory. The term last resort tariffs is reserved for two groups of consumers: the so-called vulnerable consumers (which also includes the new categories of severely vulnerable and at risk of social exclusion) and those consumers who, without being entitled to voluntary prices for the small consumer, temporarily do not have a supply contract with a marketer. These voluntary prices for small consumers shall include in an additive manner, by analogy with the tariff of last resort, the concepts of electricity production cost, the corresponding access tolls and charges and the corresponding marketing costs. In addition, this Royal Decree provides as an alternative that the consumer can contract a fixed price of energy for one year with the reference reseller. It also sets out the criteria for designating reference resellers and their obligations in relation to supply to certain consumer groups.

Royal Decree 469/2016, of November 18, amending Royal Decree 216/2014, establishes the methodology for calculating the marketing costs of the reference resellers to be included in the calculation of the voluntary price for small consumers. Ministerial Order ETU/1948/2016, of December 22, established the values of the marketing costs of the reference resellers to be included in the calculation of the voluntary price for small electricity consumers in the 2014-2018 period, which result from applying the new approved methodology. In turn, Royal Decree Law 7/2016 and Royal Decree 897/2017, are the current frame of reference for everything relating to the rate subsidy and the vulnerable consumer.

c. Tariff deficit

In terms of revenue, the electricity system was not self-sufficient until 2014, generating an annual deficit, which the electricity companies have had to finance. 2014 was the first year with a surplus in the electricity system after more than a decade in which significant deficits accumulated, thanks to the comprehensive reform undertaken to put an end to the emergence of tariff deficits and allow the economic-financial balance of the system, fundamentally based on the following regulations:

- Law 15/2012, of December 27, on fiscal measures for energy sustainability introduced by the IVPEE, commonly known as the green cent, the hydroelectric royalty, etc.
- Royal Decree Law 9/2013, of July 12, establishes a number of additional remuneration principles for the transmission and distribution of electricity, and establishes the concept of reasonable return in project return, which, before taxes, will be based on the average yield in the secondary market of the ten-year government bonds applying the appropriate differential. In addition, it contemplates other measures aimed at rebalancing the balance between income and costs of the electricity system, such as imposing the financing of the rate subsidy on vertically integrated companies or the reduction of the investment incentive in exchange for

doubling the time remaining to receive this incentive. Subsequently, the obligation was transferred to the marketing companies (or their corporate parent companies), an obligation that is currently in force.

- Law 24/2013, of December 26, incorporates the guiding principle of economic and financial sustainability, whereby any regulatory measure in relation to the sector that entails an increase in cost for the electricity system or a reduction in income must incorporate an equivalent reduction in other cost items or an equivalent increase in income to ensure the system's balance.
- Royal Decree 1054/2014, of December 12, regulates the procedure for assigning the rights to collect the electricity system deficit for 2013 and develops the methodology for calculating the interest rate that will accrue to the rights to collect said deficit and, where appropriate, the negative temporary misalignments in the financial years after 2013.

From 2014 onwards, any temporary mismatch between income and costs of the electricity system resulting from the closing settlements in a financial year and resulting in a deficit of income, as well as the temporary deviations between income and costs in the monthly settlements on account of the closing of each financial year that may arise, shall be financed by the subjects of the settlement system in proportion to the remuneration corresponding to them for the activity they carry out. In the event of a revenue shortfall in a financial year, the amount of the shortfall may not exceed 2% of the system's estimated revenue for that financial year. In addition, the accumulated debt due to misalignments from previous years may not exceed 5% of the system's estimated revenue for that year. Tolls, if any, or corresponding charges shall be revised by a total at least equal to the amount by which those limits are exceeded.

Contributions to the national energy efficiency fund

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency makes it binding on member states to justify a quantity of energy savings by 2020, obliging each state to establish energy efficiency obligation schemes such that energy distributors and/or retailers are obliged to achieve a cumulative quantity of energy savings by year-end 2020 means of annual savings between 2014 and 2020 equivalent to 1.5% of their annual energy sales. Royal Decree Law 8/2014 and Law 18/2014 transpose this EU Directive into Spanish law by establishing a National Energy Efficiency Fund (NEEF) by virtue of which gas and electricity distributors, oil product wholesalers and liquid petroleum gas wholesalers (although the latter are not considered bound parties under the Directive) are allocated an annual energy saving target at the national level called savings obligations, which is quantified in financial terms.

Successive IET/ETU ministerial orders stipulating mandatory contributions to the National Energy Efficiency Fund, are being appealed by the various companies encompassed by the aforementioned National Fund contribution obligation, including the Group entities subject to this obligation.

Energy audits

Royal Decree 56/2016, of February 12, transposing Article 8 of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, in respect of energy audits, energy service and energy audit provider accreditation and the promotion of energy efficiency, took effect in February 2016.

It has the effect of obliging all enterprises that are not SMEs ("large enterprises") within the European Union to carry out regular energy audits with a view to analyzing whether their energy management is optimal and having them establish the opportune energy savings and efficiency opportunities and proposals as warranted. The Group's energy management systems, which are based on the international ISO 50001 standard, are implemented in the Group's main industrial companies.

Climate change and alternative fuels

Following the Paris Agreement, countries' commitments under their respective National Determined Contributions (NDCs) will have a significant impact on the development of new climate policies.

The European Union, also a signatory of the Paris Agreement, has made a commitment to **climate neutrality by 2050**. To this end, in December 2019 the European Commission presented the European Green Deal, which constitutes the **new EU growth strategy**, and which aims to completely transform the European economy, highlighting the following proposals for 2020: (i) European climate law, (ii) increase in the EU's objectives for reducing greenhouse gas emissions by 2030, as part of the EU Emissions Trading System, and (iii) increase in renewable energies and energy efficiency, which will be reflected in the corresponding Directives. Directive 2018/2001, on the promotion of the use of energy from renewable sources, currently sets a target of 8.5% for the sale or consumption of biofuels in transport by 2020. In addition, there is a 7% restriction on the use of biofuel from food crops, which the use of waste, such as used cooking oil (UCO) or animal fats, essential to achieve compliance.

As far as Spain is concerned, the MITECO is currently preparing the "Energy and Climate Package", which includes the National Integrated Energy and Climate Plan (PNIEC) as well as the future Climate Change and Energy Transition Act, and a strategy for a fair transition. This Act and the PNIEC constitute a commitment by the government to comply with the objectives set out in the Paris Agreement and by the European Union, which Spain has already assumed.

The purpose of Royal Decree 639/2016, of December 9, is to minimize the dependence of the transport industry on oil, mitigate the environmental impact of transport, and establish threshold requirements for the creation of an infrastructure for alternative fuels, including charging stations for electric vehicles and natural gas and hydrogen refueling stations.

Finally, the MITECO has established energy policy guidelines for the CNMC through the enactment of Ministerial Order TEC/406/2019, of April 5, which establishes the energy policy guidelines that the CNMC must observe in the circulars that make up its regulatory plan for 2019 and that correspond to the natural gas and electricity sectors.

This order differentiates those guidelines that must be applied to each of the CNMC's circulars, however, in general, the purpose of all of these guidelines is to ensure consistency between the regulatory action of the regulatory authority and the priorities of the government's energy policy. These include, among others, guidelines aimed at optimal management of national resources, electricity savings and efficiency, the penetration of renewable energies and financial prudence.

For further information on the risks arising from climate change see section 6.1 of the 2019 Consolidated Management Report.

Bolivia

The 2009 Bolivian Constitution establishes that state-owned company Yacimientos Petrolíferos Fiscales Bolivianos (YPFB) is authorized to enter into service agreements with companies for the latter to undertake activities for and on its behalf in exchange for remuneration or payment for their services.

The Bolivian oil and gas industry is regulated by Law 3,058 of May 19, 2005 (the "Hydrocarbons Law") and technical and economic regulations.

On May 1, 2006, Supreme Decree no. 28,701 was published, which nationalized the country's hydrocarbons. Furthermore, the shares required to enable YPFB to control at least 50% plus one vote in various companies, including Empresa Petrolera Andina, S.A., (currently known as YPFB Andina), were nationalized.

On December 11, 2015, Law No. 767 was passed to promote investment in hydrocarbon exploration and production in Bolivia. Furthermore, Law No. 817 of July 19, 2016 was enacted, supplementing Article 42 of Law No. 3,058, previously amended by Law No. 767, allowing YPFB to enforce addenda to operating contracts to extend their term.

Operating contracts

According to the Hydrocarbons Law and Article 362 of the Bolivian Constitution (CPE), any individual or group, national or foreign, public or private person may enter into one or more shared production, operation or association contracts with YPFB to carry out exploration and operation activities, for a period not to exceed forty (40) years. The CPE of 2009 and Law 767 limit the type of contract to oil service contracts, which have characteristics similar to the operating contracts of Law 3058.

An operating contract is a contract by which the holder will execute, with its own means and at its own risk, for and on behalf of YPFB, the operations corresponding to the exploration and operation activities within the area covered by the contract, under the remuneration system, in the case of entering into operation activities. YPFB will not make any investment and will not assume any risk or liability for the investments or results obtained in relation to the contract, and it is the exclusive responsibility of the holder to provide all capital, installations, equipment, materials, personnel, technology and other necessary items. YPFB remunerates the holder for the operating services in cash through the holder's remuneration. This payment will cover all operating and utility costs. YPFB will in turn pay the royalties, taxes and production shares plus the corresponding taxes. Once production has started in an oil contract, the holder is required to deliver all oil and gas produced to YPFB. The holder will be entitled to remuneration under the operating agreement for the total amount produced and delivered to YPFB.

Oil contracts and amendments thereto require authorization and approval by the Plurinational Legislative Assembly, in accordance with the Political Constitution of the State (Legislative Power).

As a result of the Hydrocarbons Law and the Nationalization Decree, Repsol E&P Bolivia S.A. and its subsidiary YPFB Andina S.A. signed the operating contracts, effective as of May 2, 2007. In addition, the natural gas and liquid hydrocarbon delivery agreements establishing the terms and conditions governing the delivery of hydrocarbons by the holder were entered into on May 8, 2009.

Canada

Regulation of exploration and production activities

In the Canadian provinces of British Columbia, Alberta and Saskatchewan where the majority of the Company's exploration and production interests in Canada lie, the provincial governments own the majority of the subsurface mineral rights to crude oil and natural gas. These governments grant rights to explore for and produce oil and natural gas from Crown lands under the conditions set forth in provincial legislation and regulations. In addition to Crown lands, the Company participates in leases entered into from freehold mineral owners through direct negotiation. The royalties applicable to production from Crown lands are established by government regulation and, in general, calculated as a percentage of gross production based on the productivity of the wells, geographical location, date on which the oil fields were discovered, recovery method and type and quality of substance produced. Occasionally, the provincial governments may offer incentive programs for exploration and development. Such programs seek to reduce the royalty rate or other fees or offer certain tax credits. Fees and royalties payable for production on privately owned land are established by means of negotiation between the owner and the Company.

Companies operating in the Canadian oil and natural gas industry are subject to extensive regulation and control of operations (including land ownership, exploration, development, production, refining, transport and marketing, in addition to environmental matters) as a result of legislation and policy enacted at both the federal level (by the government of Canada) and by the various provincial governments. Generally speaking, oversight of such operations is undertaken by regulatory bodies that include the British Columbia Oil and Gas Commission, the Alberta Energy Regulator, the Saskatchewan Ministry of Economy and the Saskatchewan Ministry of the Environment, as well as federal regulatory bodies such as the Impact Assessment Agency of Canada and the Canada Energy Regulator.

Environmental and emissions regulations

Environment regulations from provincial and Canadian federal governments restrict and prohibit the release or emission of various substances that are considered harmful, such as sulfur dioxide, carbon dioxide and nitrous oxide. Regulations also impose conditions or prohibitions on operating in certain environmentally sensitive areas and establish requirements that regulate the satisfactory abandonment and reclamation of well and facility sites. Non-compliance with the legislation, regulations, orders, directives or other applicable guidelines can result in fines or other sanctions.

In addition to the regulation and control of exploration and production activities, the provincial and Canadian federal governments have also enacted various forms of emissions regulations. In October 2019, the newly-elected Alberta government introduced the Technology Innovation and Emissions Reduction Implementation Act (TIER) to replace the Carbon Competitiveness Incentive Regulation (CCIR). The CCIR and TIER are similar in their approach, however the TIER moves from the CCIR's industry-based benchmarks to benchmarks based on the average past performance of the facilities. The TIER currently mandates a \$30 per ton price on carbon emissions.

The TIER regulations are intended to meet federally mandated carbon standards; however, the Canadian federal government has indicated an intent to review the TIER to determine if it meets federal standards.

The provincial government of Alberta has also committed to reducing methane emissions from oil and gas operations by 45% by 2025 through new emissions design standards for facilities, improved measurement and reporting and new regulated standards starting in 2020.

In addition to the provincial regulations, the Canadian federal government has announced, as part of the Pan-Canadian Framework on Clean Growth and Climate Change, the possibility of provinces applying further increases to the price of carbon to \$50 CDN per ton by 2022.

Ecuador

In accordance with the Constitution of 2008 and the Hydrocarbons Law of Ecuador, the nation's hydrocarbon fields and the associated substances are the inalienable, imprescriptible and unattachable property of the State

The amended legislation of the Hydrocarbons Law and the Internal Tax Regime Law, of July 27, 2010, established that all agreements for the exploration and operation of hydrocarbons must be modified to reflect the amended reformed services agreement model.

This model involves the contractor being obliged to provide services using its own economic resources and at its own risk. In exchange, the contractor will receive a set price per net barrel of oil produced and delivered to the State. This price, which constitutes the contractor's gross revenue, is contractually stipulated based on estimated depreciation schedules, cost/expense schedules and a reasonable profit in light of the risk incurred.

Repsol Ecuador, S.A. (Ecuador Branch) entered into the services agreement for Block 16, which came into force on January 1, 2011. In addition, on January 22, 2011, a services agreement was signed covering the Block 67.

United States

Offshore exploration and production

The two government agencies responsible for offshore exploration and production are the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) under the U.S. Department of the Interior. The BOEM is in charge of responsibly ensuring the economic and environmental development of US offshore resources. Its functions include the leasing (agreements that grant oil and gas mining rights), the revision and management of oil and gas exploration, the approval of development plans and carrying out analyses pursuant to the National Environmental Policy Act and other environmental studies. The BSEE is responsible for safety and environmental supervision of offshore oil and gas operations. Its functions include the development and application of safety and environmental regulations, the authorization of offshore exploration, development and production, the performance of inspections and the response to oil spills.

Onshore exploration and production

With regard to US onshore exploration and production activities, the oil and gas industry is primarily regulated by the laws of the individual states, with the exception of certain environmental matters and operations on federal land. At present, the Company has operations in Alaska, Pennsylvania and Texas. In the Alaska and Texas, exploration and production activities are regulated by the Alaska Department of Natural Resources and the Railroad Commission of Texas, respectively. Each of these states has its own environmental protection agency. In Pennsylvania, the local Department of Environmental Protection is responsible for both environmental protection activities and the regulation of exploration and production activities.

Federal authorities do have exclusive jurisdiction over certain environmental aspects that affect the gas and oil sector. The United States Environmental Protection Agency (EPA) applies laws and regulations such as the Clean Air Act, the Clean Water Act and the Resource Conservation and Recovery Act. The environmental impact of the projects is regulated by the National Environmental Policy Act (NEPA), which is managed by different Federal agencies depending on the type of project.

Transport

The Federal Energy Regulatory Commission (FERC) governs the transport of natural gas as part of interstate commerce and the transport of oil via oil pipelines within the same field. The states regulate other types of transport.

Liquefied natural gas

The Natural Gas Act grants the Federal Energy Regulatory Commission (FERC) the exclusive power to regulate plants that import and export liquefied natural gas arriving in the United States and leaving the country with the authorization of the Office of Fossil Energy at the US Department of Energy (DOE).

Trading of gas, crude oil and refined products

The FERC regulates the sale of natural gas as part of interstate commerce. A number of US regulatory bodies are empowered to regulate the oil and refined products trading market. The Federal Trade Commission (FTC) has the power to regulate crude oil trading activities. The Environmental Protection Agency (EPA) regulates refined products marketed to private consumers such as gasoline and diesel. Trading of financial derivatives is regulated by the Commodities Futures Trading Commission (CFTC).

On December 18, 2015, the 2016 Consolidated Appropriation Act was passed (Public law no. 114-113). This piece of legislation repeals Article 103 of the Energy Policy and Conservation Act (EPCA), thereby eliminating the ban on exporting crude oil produced in the US. The legislation preserves the President's power to restrict oil exports in response to a national emergency, enforce trade sanctions and remedy oil supply scarcity or the sustained distortion of oil prices significantly above world market levels.

Indonesia

Under Indonesia's 1945 Constitution, all natural resources (including oil and gas) within Indonesian territory are owned and controlled by the State. The regulation of oil and natural gas in Indonesia is based on Law No. 22 of 2001 ("Law No. 22"), which sets out broad principles for the regulation of the industry. These principles are applied by means of a series of implementing regulations enacted under Law No. 22, as well as ministerial regulations and decrees.

Law No. 22 restructured and liberalized the State's control over the oil and gas industry. SKK Migas is the current successor to Perusahaan Pertambangan Minyak dan Gas Bumi Negara ("PERTAMINA") as the supervisory party to the Production Sharing Contracts (PSCs).

The Ministry of Energy and Mineral Resources ("MEMR") is responsible for approving the first Plan of Development under production sharing contracts and overseeing the State's ownership and management of oil and gas resources. With assistance from the Directorate General of Oil and Gas ("MIGAS"), the MEMR formulates government policy, determines the blocks to be opened for bidding, is responsible for approval of transfers by contractors of their participating interest (in consultation with SKK Migas)

and issues the licenses required for the conduct of refining oil and gas marketing activities, such as the production of liquefied natural gas using refining and marketing structures.

The Ministry of Finance is responsible for issuing instructions concerning the basis of the government's share derived from the operation of liquefied natural gas and subordinated by Directorate General of Tax and Directorate General of Customs and Excise, determining the taxes, duties and excise due on LNG development activities, deciding on issues related to government guarantees and formulating, determining and implementing policies on state-owned assets.

Pursuant to Law No. 22, companies wishing to explore for and operate oil and gas reserves must enter into a cooperation contract with SKK MIGAS. The form of cooperation contract typically entered into in respect of exploration and production activities in Indonesia is a PSC.

Under a PSC, the government of Indonesia retains ownership of the oil and gas (prior to delivery) and the contractor bears all the risk and costs of exploration, development and production in return for an agreed percentage share of oil and/or gas production and recovery of eligible operating costs from production.

On January 16, 2017, the government of Indonesia introduced a new form of PSC (the "Gross Split PSC") under Ministry of Energy and Mineral Resources Regulation No. 8 of 2017, on Gross Split Production Sharing Contracts ("Regulation 8/2017"). On December 28, 2017, the government of Indonesia enacted Government Regulation No. 53 of 2017 on the tax treatment of the Gross Split Production Sharing Contract (Government Regulation 53/2017), governing the tax conditions applicable to Gross Split PSCs.

On June 17, 2018, following the announcement that Repsol Exploración South East Jambi BV (formerly Talisman West Bengara BV) had been successful in the 2018 tender process for South East Jambi, the company signed the South East Jambi PSC, the first Repsol PSC under the Gross Split variant.

Peru

The Constitution includes the main bases of its legal framework governing the hydrocarbons market in Peru. The Constitution states that the government promotes private initiatives, recognizing the economic pluralism, and the state having a subsidiary role in terms of business concerns. The Constitution also establishes that private and public business activity must be treated equally under the law, and that national and foreign investments are subject to the same conditions. In addition, the Constitution stipulates that the country's natural resources are the property of the State and that the terms and conditions of access to and use of these resources by private parties must be regulated by means of organic laws.

Natural and legal persons, whether Peruvian or foreign, that pursue hydrocarbon activities are expressly subject to the laws of the Republic of Peru, renouncing the right to any diplomatic recourse.

The most important authorities with competence over Peruvian hydrocarbon matters are: the Ministry of Energy and Mining (MINEM for its acronym in Spanish), which is tasked with drafting, passing, proposing and applying sector policy; and the Energy and Mining Investment Oversight Body (OSINERGMIN), tasked with oversight of the natural and legal persons carrying out activities related to the electricity and hydrocarbon sub-sectors and the imposition of penalties for any breaches of the legal and technical obligations issued by the MINEM and PERUPETRO, S.A. The Environmental Assessment and Taxation Body (OEFA) is the technical institution specialized in ensuring compliance with the standards, obligations and incentives laid down in prevailing environmental regulations.

Exploration and production

The Organic Hydrocarbons Law (OHL), regulates this natural resource. To provide legal assurance to investors, it states that contracts under its framework shall be considered Contract-Law, and therefore can only be modified by written agreement between the two parties. To achieve these objectives, the OHL created PERUPETRO, a state-owned limited company organized as a public corporation, to which the state, as owner of the

hydrocarbons located in its territory, grants the right of ownership over the hydrocarbons, so that PERUPETRO can negotiate, execute and monitor exploration and/or operation contracts, with a licensee (contractor) by means of license agreements, service agreements and other forms of contracts authorized by MINEM.

Hydrocarbon refining and marketing

The OHL stipulates that any natural or legal persons, whether national or foreign, may install, operate, and maintain oil refineries, plants for processing natural gas and condensates, natural asphalt, greases, lubricants, and petrochemicals, subject to the norms specifically established by MINEM.

In Peru, the marketing of hydrocarbon derivatives is regulated by supply and demand.

Venezuela

The Constitution of the Bolivarian Republic of Venezuela stipulates that the mines and hydrocarbon fields, irrespective of their nature, located on national territory, offshore under the sea bed, in the exclusive economic zone or on the continental platform, belong to the Republic, are public-domain goods and are, therefore, inalienable and imprescriptible.

By virtue of organic law and to protect national interests, the Venezuelan State has reserved the Venezuelan oil and gas activities for itself. For reasons of economic and political sovereignty and for national strategic purposes, the State holds all of the shares of Petróleos de Venezuela, S.A. (PDVSA), or the entity that may be created for the management of the oil industry.

The Hydrocarbons Organic Law (HOL) regulates all matters regarding the exploration, operation, refining, industrialization, transport, storage, sale and conservation of hydrocarbons, including related refined products and the works required to perform these activities. Pursuant to the HOL, the performance of activities involving the exploration, extraction, collection, transport and storage of hydrocarbons is reserved to the State, which may undertake them directly or through wholly-owned State companies. The State may also conduct these activities through mixed-owned companies whose equity interest is over 50%.

The mixed companies agreements referred to in the HOL do not impose restrictions on this legal form of company in terms of transferring funds in the form of cash dividends, loan repayments or the redemption of shareholder advances in foreign currency (USD).

Activities relating to the exploration, operation, collection, storage, use, industrialization, sale and transport of non-associated natural gas and associated gas are subject to the provisions set out in the Organic Gaseous Hydrocarbons Law and its regulations.

On January 14, 2016, Decree No. 2184 was published in the Extraordinary Official Journal of the Bolivarian Republic of Venezuela No. 6,214, declaring a State of Economic Emergency throughout the entire territory of the Republic for a period of 60 days, providing the State with the power to enact exceptional and extraordinary economic, social, environmental, political and legal measures, in addition to others. This Decree has been successively extended on 23 occasions, with the most recent, Presidential Decree No. 4,090, published on January 5, 2020, in Extraordinary Official Gazette No. 6,501.

The National Constituent Assembly was called by the President of the Bolivarian Republic, Nicolás Maduro, via Presidential Decree No. 2,830, published on May 1, 2017; all public authorities are subordinated under the Constituent Assembly and are obliged to comply and ensure compliance with the legal documents issued by said Assembly. The maximum term of this Assembly has been set at two years. On May 20, 2019, the National Constituent Assembly published a Constituent Decree in Official Gazette No. 41,636 by which it extended the operation of the National Constituent Assembly at least until December 31, 2020.

Official Gazette No. 41,310, of December 29, 2017, contained the publication of the Constitutional Foreign Production Investment Law, establishing the principles, policies and procedures that regulate foreign production investments in goods and services. The special legislation regulating foreign

investments in specific sectors of the economy shall prevail over said law, including those addressing hydrocarbon, mining and telecommunications matters. To date, the relevant sectoral regulation has not been published.

On January 5, 2018, the term ended, established in Resolution No. 164 of the Ministry of the People's Power of Petroleum, published in the Official Gazette of December 6, 2017, for the review and validation of all national and international contracts signed and those that are about to be signed, by PDVSA, its subsidiaries and the mixed companies where PDVSA owns shares. To date, the review process is still ongoing in the mixed companies, and the results of this process have yet to be disclosed.

Monetary regime

On February 20, 2018, the launch of the "Petro" cryptocurrency was announced, backed by reserves from field 1 of the Ayacucho Block in the Hugo Chávez Frías Orinoco Oil Belt, in order to create an alternative currency to the dollar and a digital and transparent economy for the benefit of emerging countries. Such purchase may be made in convertible currencies: yuan, Turkish lira, euro and rouble. On March 19, the President of the United States of America signed an executive order prohibiting US persons and US residents from performing transactions with any digital currency issued by the Venezuelan government as of January 9, 2018, which increases that country's sanctions regime on Venezuelan natural and legal persons.

On July 25, 2018, Presidential Decree No. 3,548 was published in Official Gazette No. 41,446, establishing that from August 20, 2018 onwards, all monetary amounts expressed in national currency prior to that date, must be converted to the new monetary unit, dividing the current units by one hundred thousand (100,000).

On August 2, 2018, the National Constituent Assembly published a Decree revoking the Exchange Rate System Law in Official Gazette No. 41,452, with a view to granting both natural and legal persons, whether Venezuelan or foreign nationals, full guarantees in terms of their involvement in the country's socioeconomic development model.

On September 7, 2018, the Central Bank of Venezuela ("BCV") published in Extraordinary Official Journal No. 6,405 the so-called Exchange Agreement No. 1 ("the Exchange Agreement", pending regulation by BCV), the purpose of which is to establish the free convertibility of the currency nationwide. This Exchange Agreement revoked the Exchange Agreements that were in force at the time of its publication. The most relevant aspects are: i) development of the main principles of the new Exchange Market System; ii) reestablishment of the free convertibility of the currency and the lifting of restrictions on exchange transactions; iii) capacity of BCV to centralize, manage and regulate operations under the new Exchange Market System; iv) (a) all foreign currency purchase and sale transactions for the public and private sector will be performed at the exchange rate and the sale of foreign currency positions (auctions); (b) exchange transactions at the retail price; and (c) purchase and sale of securities in national currency; v) regulation of the exchange system applicable to the public oil sector.

On May 2, 2019, the Central Bank of Venezuela published Resolution No. 19-05-01 in Official Gazette No. 41,624, which authorized the so-called foreign exchange tables.

On November 19, 2019, the Presidency of the Republic published a decree instructing natural and legal persons, public and private, to register information and economic events expressed in accounting terms in sovereign cryptoassets, without prejudice to their registration in Bolívares.