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

Auditor's report,
Consolidated financial statements at 31 December 2022
Consolidated management report

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 31 December 2022, the income statement, statement of recognized profit or loss, statement of changes in equity, statement of cash flows 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 31 December 2022, 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 matters	How our audit addressed the key audit matters
Assessment of the recoverability of the carrying amount of the Group's intangible assets, property, plant and equipment and joint ventures considering the impacts of the energy transition and climate change	
The accompanying consolidated financial statements reflect intangible assets (including goodwill) and property, plant and equipment amounting to €1,976 million (note 11) and €22,470 million (note 12), respectively, at 31 December 2022. As disclosed in note 13, the Group also has joint ventures with a carrying amount of €3,916 million at year-end 2022. The Group allocates the assets to cash-generating units (CGUs) and analyses each CGU's assets for impairment annually using the method and the key assumptions described in notes 3.5.1 and 20. The assets' recoverable amount is determined based on the present value of future cash flows generated by the assets in accordance with the strategic plans for each business approved by management and prepared using scenarios that take into account the energy transition and decarbonisation of the economy. In the impairment tests, as indicated in the said notes and in note 3.5.2, the Group also takes into consideration the main risks arising from climate change (transitional risks) and therefore the price paths for hydrocarbons, electricity and CO2 and the demand assumptions that take into account commitments to decarbonise the economy, including restrictions on the use of fossil fuels and the development of new alternative technologies that will reduce demand for hydrocarbon products in the medium and long term, as reflected in the strategic plans for each business.	The main audit procedures performed on this key matter are described below. We gained an understanding of management's impairment test preparation process with regard to: • The fulfilment of applicable accounting legislation by the method applied. • The design and operating effectiveness of the relevant controls put in place by management. • The allocation of assets to CGUs and the process followed to identify which CGUs require impairment testing in accordance with applicable accounting legislation. As regards the way in which management took into consideration the potential effects of the energy transition and climate change in its impairment testing, we performed the following procedures together with our climate change and energy transition experts: • We gained an understanding of the Repsol Group's energy transition and climate change commitments by interviewing management and analysing the Repsol Group's related public information (among others, Strategic Plan 2021-2025, documentation published in the ESG Day in October 2022, consolidated management report and consolidated statement of non-financial information), as well as by analysing and assessing how such commitments are reflected in the strategic business plans.

Key audit matters

In this context, in 2022 the Group revised the price paths prepared as explained in note 3.5.1 to the accompanying consolidated financial statements. Specifically:

- Oil and natural gas: In view of the bullish dynamics in commodities markets in 2022, primarily due to Russia's invasion of Ukraine, the Group upgraded its short- and medium-term expectations of future oil and natural gas prices. In addition, the Group took the view that natural gas will continue to contribute largely to the power generation mix in the long term as a transition fuel in decarbonisation processes and therefore also upgraded long-term natural gas price expectations.

- CO2: The Group slightly upgraded price forecasts compared to the figures used in 2021, in line with the internal price of carbon, when making decisions on investments in new projects.

- Power: The Group upgraded the price path, essentially for the first decade, so as to take account of natural gas price rises and the effects of the bullish commodity cycle.

Management states in note 1 that the IASB publication "Effects of climate-related matters on financial statements" is taken into account in the disclosures on accounting estimates and judgements related to climate change, decarbonisation and their impact on the impairment analysis included in note 3.5.2 to the accompanying consolidated financial statements.

Note 3.5.2 explains that the Group expects the energy transition to bring volatility and uncertainty as to how commodity prices and demand will evolve in the coming decades, so various sensitivity analyses were conducted on changes to the main key assumptions used in the impairment tests taking into account the hydrocarbon price paths of the Net Zero Emissions 1.5º C scenario published by the International Energy Agency in its World Energy Outlook 2022 report (note 20.2).

How our audit addressed the key audit matters

- We gained an understanding of the industry context (price trends, results presentations of other industry companies, analyst and agency reports, investor expectations regarding climate change, regulatory and tax developments in relation to climate change, etc.) in order to evaluate the alignment of the Group's strategic priorities with the actual situation in the global hydrocarbons market and the energy transition and climate change scenarios considered at the global level.

- We gained an understanding of the map of risks related to climate change and energy transition identified by the Group and we held meetings with management to identify the areas in which the energy transition and climate change risks included in the risk map could impact the consolidated financial statements.

We also assessed the assumptions and main estimates employed in the calculations, which include both short- and long-term estimates of prices of hydrocarbons, electricity and CO2; the volume of hydrocarbon reserves and resources, related production profiles, refining margins, hydrocarbon demand trends, operating costs, necessary investments and the period covered by projections, and we performed the following procedures on the main assumptions and estimates.

As regards of future prices of hydrocarbons, power, CO2 and refining margins:

- We, assisted by our valuation specialists, compared management's price estimates with the information published by investment banks, consulting firms and relevant industry organisations and agencies.

- We checked whether management took into consideration the energy transition and economic decarbonisation context.

- We assessed the consistency of the estimates with the related objectives set by the Group in its strategic plans.

Key audit matters	How our audit addressed the key audit matters
As a result of these analyses, Group management has recorded valuation adjustments, net of reversals, in the amounts stated in note 20.1.c). This is a key audit matter as it involves critical judgements and significant estimates on the part of management, particularly in the Exploration & Production and Refining businesses in Spain (notes 3.5.1 and 3.5.2) in relation to the key assumptions employed, which are influenced by the view being taken that climate change and the energy transition could have a material impact on the Group's consolidated financial statements.	• For the refining activities in Spain, we analysed the estimated refining margin and demand for fossil fuels, as well as the consistency of the strategic plan for this business with energy transition and climate change dynamics. We evaluated the assumptions and main estimates used to calculate discount rates, together with our valuation specialists, including both short- and long-term estimates of rate trends for each of the businesses assessed. We performed the following procedures in connection with the estimates of hydrocarbon reserves and resources for the assets included in the Upstream segment: • We gained an understanding of the process followed by the Group, which involves management experts. We assessed the work findings and the competence, ability and objectivity of the experts. • We checked the consistency of the volumes estimated by the management experts with the data employed to calculate the recoverable amount of the assets analysed. We also checked whether the hydrocarbon reserves and resources production profiles of the Upstream segment assets and the projection periods of the cash flows of the CGUs Refining Spain, Chemicals and Mobility Spain are consistent with the Repsol Group's “Net Zero by 2050” strategic objective. We checked the mathematical calculations included in the models prepared by management and we compared the recoverable amount calculated by the Group with the carrying amounts of the CGUs so as to identify any impairment or reversal of impairment, checking the relevant accounting treatment where applicable. As regards management's sensitivity analyses: • We evaluated the calculations of the main assumptions employed in the sensitivity analyses. • We checked that the sensitivity analyses took into consideration the hydrocarbon prices included in the Net Zero Emissions 1.5º C scenario published by the International Energy Agency in its World Energy Outlook 2022 report.

Key audit matters	How our audit addressed the key audit matters
	As regards the information and disclosures included in the consolidated financial statements: • We checked that they are consistent with the information included in the consolidated management report and the consolidated non-financial information statement. • We analysed the sufficiency of the said information relating to the evaluation of the recoverable amount of the assets analysed, in accordance with applicable accounting legislation. On the basis of 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 evidence obtained.
Assessment of the recoverability of the carrying amount of deferred tax assets	
As reflected in the accompanying consolidated balance sheet, at 31 December 2022 the balance in deferred tax assets amounted to €2,757 million, of which, as indicated in note 22.3 to the accompanying consolidated financial statements, tax losses, tax credits and similar benefits not yet used totalled €2,303 million. When assessing whether the amount recognised in the consolidated financial statements for these assets is recoverable, Group management considers, as indicated in note 22, the expected generation of future taxable profits based on the methodology defined to analyse the recovery of its assets, the assessment of the estimated results of each tax group or entity in accordance with the Group's strategic orientation, the applicable tax regulations and the term and time limit within which these assets may be recovered. As a result of the above analyses, Group management has reduced the amount of deferred tax assets recognised in the balance sheet by the amount indicated in note 22.3.	Our analysis commenced with an understanding of both the methodology applied and the relevant controls the Group has in place for the recoverability analysis of these assets. We have also checked the consistency of the assumptions used by management in the financial projections used to determine future taxable profits against the assumptions used in the impairment testing of the Group's intangible and tangible assets. In addition, together with our tax experts, we have evaluated the corporate income tax estimate, mainly with regard to the suitability of the tax treatment of the transactions performed and the calculations of the deferred tax assets in the light of the applicable tax regulations. Finally, we assessed the sufficiency of the disclosures in the consolidated financial statements concerning the measurement and recognition of these assets. On the basis of our work, we believe that the assumptions and estimates made by Group management concerning the recoverability of the assets analysed are consistent with the evidence obtained.

Key audit matters	How our audit addressed the key audit matters
This is a key audit matter because of the nature and significance of the assets recognised and because it involves the application of significant estimates (notes 3.5 and 3.5.1) of future taxable profits, which affects the assessment of their recoverability.	
Evaluation of the recoverability of the Group's assets in Venezuela	
As disclosed in note 20.3 to the accompanying consolidated financial statements, the Group's financial exposure in Venezuela at 31 December 2022 amounted to €411 million. This amount mainly includes the investment in the joint venture Cardon IV, S.A. amounting to €158 million (note 13) and the US dollar financing granted by the Group to the joint venture Petroquiriquire, S.A. amounting to €347 million (note 8.1) and trade receivables from Petróleos de Venezuela, S.A. (PDVSA) amounting to €318 million, which are recorded as Other non-current assets (note 14), less provisions for liabilities and charges amounting to €501 million (note 13). As detailed in note 20.3, although future expectations in Venezuela have improved as a result, mainly, of a relative decrease in the coercive measures of the Government of the United States of America, the general situation of the country continues to be affected by a very significant drop in the gross domestic product in recent years, a regulated exchange system, high levels of inflation and continued devaluations of the local currency, an oil sector whose production has been significantly reduced in recent years, political instability and international sanctioning measures, among others. Furthermore, except in the case of Quiriquire Gas, S.A., whose carrying value is zero, the functional currency of the investments in Venezuela is the US dollar, as indicated in note 20.3 to the accompanying consolidated financial statements. In the context described above, the Group has analysed the recoverability of its investments in Venezuela and the credit risk relating to the PDVSA receivables, recording an impairment of €266 million in the consolidated income statement, as detailed in note 20.3.	Our analysis commenced with an understanding of the processes the Group has in place for performing the asset value analysis, including the relevant controls. With the collaboration of our team in Venezuela, we have gained an understanding of the political, social and economic situation in the country. In relation to the financial information of the joint venture Cardón IV, S.A. included in the consolidated financial statements, we have assessed the competence and objectivity of this component's auditor and have obtained and evaluated the auditor's reports, including its overall findings, conclusions and opinion. We have also evaluated the financial information of the joint venture Petroquiriquire, S.A., which has been included in the Group's consolidated financial statements. In relation to the analysis of impairment losses on non-current assets in the above companies, we have performed audit procedures such as those described in the key audit matter *"Assessment of the recoverability of the carrying amount of the Group's intangible assets, property, plant and equipment and joint ventures considering the impacts of the energy transition and climate change"* referred to above. We have also analysed the reasonableness of the provision for liabilities and charges. In addition, to analyse the credit risk of the loans granted to the joint ventures and the receivables from PDVSA, we have performed the following audit procedures, among others: • Obtaining and evaluating the loan agreements with Cardón IV, S.A. and Petroquiriquire, S.A., as well as other relevant contractual information.

Key audit matters	How our audit addressed the key audit matters
To determine the expected credit losses associated with loans to the joint ventures and the PDVSA receivables, the Group has engaged an independent expert to validate management's judgements. This matter requires a high level of judgement and estimation (note 20.3) by management when assessing the recoverability of its assets in Venezuela and has therefore been considered as a key audit matter.	• Analysing the reasonableness of the expected credit loss model prepared by management. • We have analysed the information contained in the report of the independent expert engaged by the Group to assess management's judgements on the Venezuela credit risk and have assessed this expert's competence and objectivity, to satisfy ourselves that the expert was suitably qualified to carry out this assignment. Finally, we have assessed the sufficiency of the information disclosed in the consolidated financial statements regarding the situation in Venezuela, the Group's presence in that country and the assumptions underlying the measurement of these assets. On the basis of our work, we believe that the assumptions and estimates made by Group management concerning the recoverability of the assets analysed are consistent with the evidence obtained.
Analysis of the effects of the partial arbitral award relating to the acquisition of Talisman Energy UK Limited (TSEUK), now named Repsol Sinopec Resources UK Limited (RSRUK)	
As indicated in note 15 of the accompanying notes to the consolidated financial statements, Addax Petroleum UK Limited (Addax) and Sinopec International Petroleum Exploration and Production Corporation (Sinopec) submitted a “Notice of arbitration” against Talisman Energy Inc. (now Repsol Oil & Gas Canada Inc. – ROGCI) and Talisman Colombia Holdco Limited (TCHL) in connection with the purchase of 49% of the shares in RSRUK in 2012 by Addax and Sinopec. This transaction took place before the Talisman Group was acquired by the Repsol Group in 2015. The Arbitration Court decided to split the proceeding into two phases: the first relating to the liability for the five matters in dispute (Reserves, Production, Abandonment, Projects and Maintenance) and the second phase in which the amount of liability would be decided, if applicable.	Our audit procedures in relation to this matter included, among others, the following: • We met with Group management to gain an understanding of their analysis and assess the risks underlying the awards. • We obtained the Group’s external lawyers’ evaluation of the classification of the risks identified for the Repsol Group in the partial awards and related implications. • With the help of our legal specialists, we analysed the documents relating to the partial awards issued to date and we assessed whether the risks identified in the partial awards by the internal and external lawyers reflect the content of the documents.

Key audit matters	How our audit addressed the key audit matters
On 29 January 2020, the Singapore Arbitration Court issued a partial award addressing only liability for the Reserves matter. In that partial award, the Arbitration Court decided that ROGCI and TCHL are liable to Sinopec and Addax for that matter. As a result of this partial award, the Group recognised a provision in prior years. On 20 April 2021, the Arbitration Court issued a new partial award, completing the liability phase, in which TCHL and ROGCI were declared liable for the Production matter and the claims made by Addax and Sinopec for liabilities in relation to the other matters were rejected. Following this award, the arbitration proceeding will continue in the quantification phase and a decision is not expected until the final quarter of 2023. The Group challenged the two awards referred to above before the Singapore courts. However, in January 2023 the courts handed down a judgement disallowing the appeals for annulment lodged by the Group. The partial award of 20 April 2021 allows the liabilities that could derive from this arbitration proceeding to be estimated and therefore the Group, assisted by external lawyers and advisors, recognised a provision to cover arbitration risks in prior years. This is a key matter as it involves critical judgements and significant estimates (notes 3.5 and 15.2) by management in the calculations made, which are subject to uncertainty, and due to the fact that changes in the course of the arbitration proceeding could have a material impact on the Group's consolidated financial statements.	• We gained an understanding and assessed the method applied by the Group to quantify the risks reflected in its analysis of the awards and we checked whether the risks quantified by the Group match those reflected in the awards issued. • We compared the estimates with the arbitration documents and checked the mathematical accuracy of management's calculations. • We verified that the amounts recognised in the consolidated financial statements match the results of the above-mentioned calculations. • We evaluated the sufficiency of the information disclosed in the consolidated financial statements with respect to this matter. On the basis of 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.

Other information: Consolidated management report

Other information comprises only the consolidated management report for the 2022 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 consolidated management report, in accordance with legislation governing the audit practice, is to:

a) Verify only that certain information included in the Annual Corporate Governance Report and the Annual Report on Directors' Remuneration, as referred to in the Auditing Act, have been provided in the manner required by applicable legislation and, if not, we are obliged to disclose that fact.

b) Evaluate and report on the consistency between the rest of the information included in the consolidated management report and the consolidated financial statements as a result of our knowledge of the Group obtained during the audit of the aforementioned financial statements, as well as to evaluate and report on whether the content and presentation of this part of the consolidated management report is 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 section a) above has been provided in the manner required by applicable legislation and that the rest of the information contained in the consolidated management report is consistent with that contained in the consolidated financial statements for the 2022 financial year, and its content and presentation are in accordance with 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 IFRS-EU and other provisions of the financial reporting framework applicable to the Group in Spain, and for such internal control as the aforementioned 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 aforementioned 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.

- 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 and 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 aforementioned 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

European single electronic format

We have examined the digital files of the European single electronic format (ESEF) of Repsol, S.A. and investees comprising the Repsol Group for the financial year that comprise an XHTML file which includes the consolidated financial statements for the financial year and XBRL files with tagging performed by the entity, which will form part of the annual financial report.

The directors of Repsol, S.A. are responsible for presenting the annual financial report for the financial year 2022 in accordance with the formatting and markup requirements established in the Delegated Regulation (EU) 2019/815 of 17 December 2018 of the European Commission (hereinafter the ESEF Regulation).

Our responsibility is to examine the digital files prepared by the Parent company's directors, in accordance with legislation governing the audit practice in Spain. This legislation requires that we plan and execute our audit procedures in order to verify whether the content of the consolidated financial statements included in the aforementioned digital files completely agrees with that of the consolidated financial statements that we have audited, and whether the format and markup of these accounts and of the aforementioned files has been affected, in all material respects, in accordance with the requirements established in the ESEF Regulation.

In our opinion, the digital files examined completely agree with the audited consolidated financial statements, and these are presented and have been marked up, in all material respects, in accordance with the requirements established in the ESEF Regulation.

Report to the audit and control committee of the Parent company

The opinion expressed in this report is consistent with the content of our additional report to the audit and control committee of the Parent company dated 16 February 2023.

Appointment period

The General Ordinary Shareholders' Meeting held on 6 May 2022 appointed us as auditors of the Group for a period of one year, for the year ended 31 December 2022.

Previously, we were appointed by resolution of the General Ordinary Shareholders' Meeting for a period of three years and we have audited the accounts continuously since the year ended 31 December 2018.

Services provided

Services provided to the Group for services other than the audit of the accounts are disclosed in note 29.3 to the consolidated financial statements.

PricewaterhouseCoopers Auditores, S.L. (S0242)

Iñaki Goiriena Basualdu (16198)

16 February 2023

2022

REPSOL Group

Consolidated financial statements

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

The Repsol Commitment
Net Zero Emissions
by 2050

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

Balance sheet at December 31, 2022 and 2021

Balance sheet		€ Million	
ASSETS	Note	**12/31/2022**	**12/31/2021**
Intangible assets	11	1,976	3,497
Property, plant and equipment	12	22,470	21,726
Investments accounted for using the equity method	13	4,302	3,554
Non-current financial assets	8	1,437	1,249
Deferred tax assets	22	2,757	2,878
Other non-current assets	14	839	908
NON-CURRENT ASSETS		**33,781**	**33,812**
Non-current assets held for sale		—	605
Inventories	16	7,293	5,227
Trade and other receivables	17	9,027	8,238
Other current assets		293	326
Other current financial assets	8	3,058	2,451
Cash and cash equivalents	8	6,512	5,595
CURRENT ASSETS		**26,183**	**22,442**
TOTAL ASSETS		**59,964**	**56,254**

		€ Million	
EQUITY AND LIABILITIES	Note	**12/31/2022**	**12/31/2021**
Shareholders' equity		24,611	22,320
Other cumulative comprehensive income		683	94
Non-controlling interests		679	380
EQUITY	6	**25,973**	**22,794**
Non-current provisions	15	3,553	3,264
Non-current financial liabilities	7	10,130	10,185
Deferred tax liabilities and other tax items	22	2,194	2,022
Other non-current liabilities	14	1,196	671
NON-CURRENT LIABILITIES		**17,073**	**16,142**
Changes in ownership interest in companies without loss of control		—	460
Current provisions	15	1,579	1,024
Current financial liabilities	7	3,546	4,611
Trade and other payables	18	11,793	11,223
CURRENT LIABILITIES		**16,918**	**17,318**
TOTAL EQUITY AND LIABILITIES		**59,964**	**56,254**

Repsol, S.A. and Investees comprising the Repsol Group
Income statement for the years ending December 31, 2022 and 2021

Income statement	Note	€ Million 2022	2021
Sales		74,828	49,480
Income from services rendered and other income		325	265
Changes in inventories of finished goods and work in progress		595	759
Procurements		(56,178)	(37,448)
Amortization and depreciation of non-current assets		(2,339)	(2,004)
(Provision for)/Reversal of impairment provisions		(2,673)	(663)
Personnel expenses		(1,967)	(1,802)
Transport and freights		(1,781)	(1,103)
Supplies		(858)	(769)
Gains/(Losses) on disposal of assets		77	10
Other operating income / expenses		(4,169)	(2,968)
OPERATING INCOME / (LOSS)	19	**5,860**	**3,757**
Net interest		(81)	(152)
Change in fair value of financial instruments		941	644
Exchange gains/(losses)		(434)	(131)
(Provision for)/Reversal of impairment provisions of financial instruments		49	27
Other financial income and expenses		(144)	(117)
FINANCIAL RESULT	21	**331**	**271**
NET INCOME FROM INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD (1)	13	989	301
NET INCOME / (LOSS) BEFORE TAX		**7,180**	**4,329**
Income tax	22	(2,835)	(1,801)
CONSOLIDATED NET INCOME / (LOSS) FOR THE PERIOD		**4,345**	**2,528**
NET INCOME / (LOSS) ATTRIBUTABLE TO NON-CONTROLLING INTERESTS		(94)	(29)
NET INCOME / (LOSS) ATTRIBUTABLE TO THE PARENT		**4,251**	**2,499**

EARNINGS PER SHARE ATTRIBUTABLE TO THE PARENT	23		**Euros / share**
Basic		2.96	1.64
Diluted		2.96	1.64

Note: The "Other operating income" and "Other operating expenses" headings of operating income that were presented separately in previous years have been grouped into a single heading called "Other operating income/(expenses)" for the purposes of simplification and improving the clarity of the consolidated income statement. These headings are detailed by item in Note 19.8.
(1) Net of taxes.

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

Statement of recognized profit or loss corresponding to the years ending December 31, 2022 and 2021

Statement of recognized income and expense	€ Million	
	2022	**2021**
CONSOLIDATED NET INCOME / (LOSS) FOR THE PERIOD	**4,345**	**2,528**
Due to actuarial gains and losses	18	7
Investments accounted for using the equity method	6	21
Equity instruments with changes through other comprehensive income	(29)	(1)
Tax effect	(1)	(8)
OTHER COMPREHENSIVE INCOME / (LOSS). ITEMS NOT RECLASSIFIABLE TO NET INCOME / (LOSS)	(6)	19
Cash flow hedging:	**(336)**	**133**
Valuation gains / (losses)	(490)	173
Amounts transferred to the income statement	154	(40)
Translation differences:	**835**	**820**
Valuation gains / (losses)	848	1,081
Amounts transferred to the income statement	(13)	(261)
Investments in joint ventures and associates:	**11**	**—**
Valuation gains / (losses)	11	—
Amounts transferred to the income statement	—	—
Tax effect	**119**	**34**
OTHER COMPREHENSIVE INCOME / (LOSS). ITEMS RECLASSIFIABLE TO NET INCOME	629	987
TOTAL OTHER COMPREHENSIVE INCOME / (LOSS)	**623**	**1,006**
TOTAL COMPREHENSIVE INCOME / (LOSS) FOR THE PERIOD	**4,968**	**3,534**
a) Attributable to the parent	4,896	3,505
b) Attributable to non-controlling interests	72	29

Repsol S.A. and Investees comprising the Repsol Group

Statement of changes in equity corresponding to the years ending December 31, 2022 and 2021

Statement of changes in equity	**Equity attributable to the parent and other equity instrument holders**							
	Shareholders' equity							
€ Million	Share capital	Share premium, reserves & dividends	Treasury shares and own equity investments	Net income for the period attributable to the parent	Other equity instruments	Other cumulative comprehensive income	Non-controlling interests	**Equity**
Closing balance at 12/31/2020	**1,568**	**21,132**	**(162)**	**(3,289)**	**1,936**	**(890)**	**244**	**20,539**
Total recognized income/(expenses)	**—**	**20**	**—**	**2,499**	**—**	**986**	**29**	**3,534**
Transactions with partners or owners:								
Share capital increase/(reduction)	(41)	(386)	427	—	—	—	—	—
Dividends and shareholder remuneration	—	(916)	—	—	—	—	—	(916)
Transactions with treasury shares and own equity investments (net)	—	46	(906)	—	—	—	—	(860)
Increases/(reductions) due to changes in scope	—	115	—	—	—	—	104	219
Other transactions with partners or owners	—	—	—	—	—	—	—	—
Other equity variations:								
Transfers between equity-line items	—	(3,289)	—	3,289	—	—	—	—
Subordinated perpetual obligations	—	(63)	—	—	340	—	—	277
Other variations	—	(4)	—	—	4	(2)	3	1
Closing balance at 12/31/2021	**1,527**	**16,655**	**(641)**	**2,499**	**2,280**	**94**	**380**	**22,794**
Total recognized income/(expenses)	**—**	**23**	**—**	**4,251**	**—**	**622**	**72**	**4,968**
Transactions with partners or owners:								
Share capital increase/(reduction)	(200)	(2,267)	2,467	—	—	—	—	—
Dividends and shareholder remuneration	—	(944)	—	—	—	—	(66)	(1,010)
Transactions with treasury shares and own equity investments (net)	—	36	(1,829)	—	—	—	—	(1,793)
Increases/(reductions) due to changes in scope	—	735	—	—	—	32	299	1,066
Other transactions with partners or owners	—	—	—	—	—	—	—	—
Other equity variations:								
Transfers between equity-line items	—	2,499	—	(2,499)	—	—	—	—
Subordinated perpetual obligations	—	(60)	—	—	2	—	—	(58)
Other variations	—	73	—	—	4	(65)	(6)	6
Closing balance at 12/31/2022	**1,327**	**16,750**	**(3)**	**4,251**	**2,286**	**683**	**679**	**25,973**

Repsol S.A. and investees comprising the Repsol Group

Statement of cash flows corresponding to the years ending December 31, 2022 and 2021

Statement of cash flows	Note	€ Million 2022	2021
Income before tax		**7,180**	**4,329**
Adjustments to income:		**4,026**	**2,390**
Amortization of non-current assets	11 and 12	2,339	2,004
Other (net)		1,687	386
Changes in working capital		(1,375)	(1,107)
Other cash flows from operating activities:		**(1,999)**	**(935)**
Dividends received		753	281
Income tax refunded/(paid)		(2,398)	(920)
Other proceeds from/(payments for) operating activities		(354)	(296)
CASH FLOWS FROM OPERATING ACTIVITIES	24	**7,832**	**4,677**
Payments for investments:	11 and 12	**(5,096)**	**(4,234)**
Group companies and associates		(193)	(539)
Property, plant and equipment, intangible assets and investment property		(3,535)	(1,902)
Other financial assets		(1,368)	(1,793)
Proceeds from divestments:		**962**	**1,277**
Group companies and associates		124	270
Property, plant and equipment, intangible assets and investment property		473	105
Other financial assets		365	902
Other cash flows from investing activities		**31**	**24**
CASH FLOWS FROM INVESTING ACTIVITIES	24	**(4,103)**	**(2,933)**
Proceeds from and (payments for) equity instruments:	6	**(1,714)**	**(382)**
Issue		—	746
Return and redemption		—	(406)
Acquisition		(1,884)	(1,123)
Disposal		170	401
Changes in ownership interest in companies without loss of control	6	**1,155**	**200**
Acquisition		—	**(23)**
Disposal		**1,155**	**223**
Proceeds from and (payments for) financial liability instruments:	7	**(1,148)**	**825**
Issuance		13,500	11,417
Repayment and redemption		(14,648)	(10,592)
Payments on shareholder remuneration and other equity instruments	6	**(1,027)**	**(625)**
Other cash flows from financing activities:		**(98)**	**(547)**
Net interest payments and payments under leases		(365)	(356)
Other proceeds from/(payments for) financing activities		267	(191)
CASH FLOWS FROM FINANCING ACTIVITIES	24	**(2,832)**	**(529)**
EXCHANGE RATE FLUCTUATIONS EFFECT		**20**	**59**
NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS	24	**917**	**1,274**
CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD		**5,595**	**4,321**
CASH AND CASH EQUIVALENTS AT END OF PERIOD:	8	**6,512**	**5,595**
Cash and banks		2,676	2,508
Other financial assets		3,836	3,087

NOTES

[1] The Appendices form an integral part of the consolidated Financial Statements.

GENERAL INFORMATION

(1) About these Financial Statements

These consolidated Financial Statements of Repsol, S.A.[1] and its investees, comprising the Repsol Group, present fairly the Group's equity and financial position and its results, as well as the consolidated equity and the consolidated cash flows for the period ending December 31, 2022.

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, 2022, and other provisions of the applicable regulatory framework. Compliance with accounting regulations requires the company to apply criteria and policies (see Note 3.4); preparing the information contained in these financial statements also requires accounting estimates and judgments to be made that may be significant (see Note 3.5).

Repsol has a strategy to be a net zero emissions company by 2050, in line with the objectives of the Paris[2] Climate Summit and the United Nations Sustainable Development Goals. These financial statements include information that reflects the impacts of climate change and the dynamics of energy transition (see Notes 3.5.2 and Appendix III) In addition, that established in the IASB publication "Effects of Climate-Related Issues on Financial Statements" on the impact of climate change on the application of IFRSs in financial reporting was taken into account in preparing these Financial Statements.

The preparation of the consolidated Financial Statements is the responsibility of the directors of Repsol, S.A., the parent company of the Group. They were authorized for issue by the Board of Directors of Repsol, S.A. at its meeting held on February 15, 2023 and they will be submitted for approval at the Annual General Meeting; it is expected that they will be approved without any modifications. The 2021 consolidated Financial Statements were approved at Repsol's Annual General Meeting held on May 6, 2022.

The Group's consolidated Management Report, which includes financial and non-financial information and, in particular, the consolidated Statement of Non-Financial Information and other information on sustainability, including Environmental, Social and Governance (ESG) matters, is published together with the consolidated Financial Statements.

(2) About Repsol

2.1) Repsol Group

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 electricity[3]. The Group comprises more than 300 companies, subsidiaries, joint arrangements and associates incorporated in 36 countries (mainly in Spain, the United States and the Netherlands) that occasionally carry out activities abroad through branches, permanent establishments, etc. The Group's main companies and the summarized corporate organization chart are presented in section 2.3 of the 2022 consolidated Management Report.

[1] The financial statements , together with the 2022 consolidated Management Report of Repsol S.A, can be seen on the Repsol website. Additionally, as supplementary information, Repsol publishes the "Information on hydrocarbon Upstream activities" and the "Report on payments to public administrations for hydrocarbon Upstream activities", also available on the Repsol website.

[2] The Paris Agreement has had a significant impact on the development of new climate policies and the approval of new regulations. The European Union (EU), having assumed the commitment of climate neutrality by 2050 and "The European Green Deal," which constitutes the new growth strategy of the EU, has approved different regulations on this matter. Spain is also issuing different legislative packages on this matter, so the regulations on climate change and energy transition are evolving continuously. For more information, see Appendix III.

[3] For more information see section 2.1 Value chain and business segments of 2022 consolidated Management Report.

The Group operates in several business segments, the main metrics and scope of which are summarized below:

Segment information	**Income from ordinary activities [5]**		**Operating income**		**Adjusted net income**		**Free cash flow**		**Capital employed**	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Upstream [1]	7,484	4,924	5,705	3,027	3,029	1,687	3,983	2,465	12,282	12,348
Industrial [2]	37,315	25,502	4,315	792	3,150	606	1,547	196	11,108	11,163
Commercial and Renewables [3]	33,925	21,703	809	761	540	542	(26)	475	4,667	4,451
Corporate [4] and others	—	1	(181)	(208)	(58)	(381)	(293)	(297)	172	594
TOTAL	**78,724**	**52,130**	**10,648**	**4,372**	**6,661**	**2,454**	**5,211**	**2,839**	**28,229**	**28,556**

Note: Figures calculated in accordance with the Group's reporting model described in Note 4 and Appendix I.
[1] Activities involving the exploration, development and production of crude oil and natural gas reserves.
[2] Activities involving refining, petrochemicals, trading and transportation of crude oil and other products and the sale, transportation and regasification of natural gas and liquefied natural gas (LNG).
[3] Sale of electricity and gas, mobility and the sale of oil products and liquefied petroleum gases (LPG), as well as low-carbon power generation and electricity generation from renewable sources.
[4] Corresponds to the operating expenses of the corporation and, specifically, those of the Group's management that have not been invoiced as services to the businesses, the financial result and inter-segment consolidation adjustments
[5] Corresponds to the sum of the "*Sales*" and "*Services rendered and other income*" (see Appendix I).

In relation to changes in the composition of the Group in 2022, the divestments in the Upstream segment and the acquisition and dilution agreements for assets linked to the energy transition described in Note 4.4 stand out.

For further information on the Group's composition and the changes in its corporate structure, see Appendices IIA, IIB and IIC.

2.2) Parent company

The parent company of the Group is Repsol, S.A. It is registered at the Madrid Companies Register on sheet no. M-65289; its tax ID number (C.I.F.) is A-78/374725 and its National Classification of Economic Activities (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*), 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.

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). 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).

(3) Criteria for the preparation of 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, 2022, 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 also the functional currency of the parent company, except when another unit is mentioned.

3.2) Comparative information

The new developments in the accounting standards applied by the Group as of January 1, 2022[4] did not have a significant impact given their nature and scope.

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	
Adopted by the European Union	**Date of first application**
IFRS 17 "*Insurance Contracts*" (1)	January 1, 2023
Amendments to IFRS 17 - Initial application of IFRS 17 and IFRS 19 - Comparative information(2)	January 1, 2023
Amendments to IAS 1 – Breakdown of accounting policies information	January 1, 2023
Amendments to IAS 8 – Definition of accounting estimates	January 1, 2023
Amendments to IAS 12 - *Deferred Tax Related to Assets and Liabilities Arising from a Single Transaction*(3)	January 1, 2023
Pending adoption by the European Union	
Amendments to IAS 1 - *Classification of Liabilities as Current or Non-Current* (4)	January 1, 2024
Amendments to IAS 1 - *Non-current liabilities with covenants*(5)	January 1, 2024
Amendments to IFRS 16 - *Lease liability in a sale and leaseback*(6)	January 1, 2024
Amendments to IFRS 10 and IAS 28 - *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*	Undefined

(1) Includes the Amendments to IFRS 17 issued by the IASB on June 25, 2020.
(2) Modifications adopted by the EU on September 8, 2022.
(3) Modifications adopted by the EU on August 11, 2022.
(4) Includes the deferral of the first application of the Amendments to IAS 1 issued on July 15, 2020.
(5) Modifications issued on October 31, 2022.
(6) Modifications issued on September 22, 2022.

The Group is analyzing the potential impacts that these regulatory changes could have on its consolidated financial statements, although to date none of significance have been identified. Specifically, with regard to the first application of IFRS 17 Insurance contracts, as of January 1, 2023, the Group has carried out an analysis of all contracts that may fall within the scope of the standard. Based on this analysis, (i) it was determined that no contracts outside the insurance activity would be within the scope of the standard, according to the scope exceptions mentioned in the standard itself; and (ii) that contracts within the scope of the standard, which are practically all short-term contracts, are eliminated in the consolidation process, in accordance with IFRS 10, and thus have not been identified as having any significant impact on the consolidated financial statements.

3.4) Accounting policies

It should be noted that the significant accounting policies and options are highlighted, in text boxes, throughout the notes to these Financial Statements, except for those that , due to their more cross-cutting or general nature, are detailed below:

Consolidation principles

Repsol classifies investments as subsidiaries, joint arrangements and associates based on the control exercised over them:

i. subsidiaries: those over which Repsol exercises control and are consolidated under the full consolidation method;

ii. joint arrangements: those in which strategic operational and financial decisions require the unanimous consent of the parties sharing control (joint control) and are classified as: a) joint operations arranged through a *Joint Operating Agreement* (JOA) or similar vehicle that does not limit the risks and rewards of the venturer and that are included in the financial statements of the partners based on the ownership interest in the assets, liabilities, income and expenses arising from the agreement; or b) *Joint Ventures* (JVs) that represent an interest in the net assets of the agreement and that are accounted for using the equity method; and

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

[4] The following standards have been applied as of January 1, 2022 with no significant impact on the Group's financial statements: (i) Amendments to IFRS 3 — Reference to the Conceptual Framework; (ii) Amendments to IAS 16 — Sales of goods from assets under construction during the test period; (iii) Amendments to IAS 37 — Onerous Contracts: Costs of Fulfilling a Contract; and (iv) Annual Improvements to IFRS 2018-2020.

Functional currency

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 of the financial statements, 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)*".

Hydrocarbon upstream activities

Repsol recognizes hydrocarbon Upstream activities using mainly *successful-efforts* accounting. Under this method, the various costs incurred are treated as follows for accounting purposes:

- The costs of acquiring new interests (including bonds, legal costs, etc.) in areas with reserves, including those acquired in business combinations, are capitalized under *"Investments in areas with reserves"* in property, plant and equipment.

- 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 economically viable reserves are found, the amounts capitalized are recognized as an expense in the income statement.

- Exploratory drilling costs are capitalized under "*Investments in exploration*" in property, plant and equipment until it is determined whether reserves justifying their commercial development have been found. If no economically viable 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 (see next section), 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 the reserves or develop the project within a reasonable period after well drilling has been completed, they are recognized as an expense in the income statement.

- The costs incurred in exploratory drilling work that have yielded a commercially exploitable reserve are reclassified (along with the associated exploration and G&G licenses - *"Exploration investments"*) at their carrying amount to *"Investments in areas with reserves"* under property, plant and equipment.

- Exploration costs other than G&G 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 extracting, processing or storing hydrocarbon is capitalized under "*Investments in areas with reserves"* in property, plant and equipment.

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

- The investments capitalized are depreciated according to the unit of production method and in accordance with the following criteria:

  a. Investments made for the acquisition, discovery, development and production of proven and probable reserves (including exploration costs reclassified to investments in areas with reserves), are amortized based on the relationship between production for the year and the reserves that are expect to be produced without needing to incur additional investment

  b. The costs incurred in surveys for the development and extraction of hydrocarbon reserves are depreciated on the basis of the relationship between the production for the year and the total expected to be obtained of proven reserves most likely to be developed (see next section).

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

3.5) Accounting estimates and judgments

The preparation of financial statements in accordance with applicable accounting principles makes it necessary to make judgments and estimates that affect the recognition and valuation of assets and liabilities, income and expenses for the period, and the breakdown of the contingent assets and liabilities. The actual results could differ significantly depending on the estimates made.

The accounting policies and areas that require the highest degree of judgment and estimates in the preparation of these financial statements are: (i) crude oil and natural gas reserves (see Note 3.5.1); (ii) recoverable amount of assets (see Note 3.5 and Note 20); (iii) provisions for litigation, decommissioning and other contingencies, such as those caused by environmental damage (see Notes 15 and 29.1); (iv) income tax, tax credits and contingencies, and deferred tax assets (see Note 22); (v) market value of derivative financial instruments (see Notes 7, 8 and 9); (vi) expected loss on financial instruments (see Notes 10.3 and 20.3); and (vii) assessment of investments in Venezuela (see Notes 13 and 20.3).

Additionally, the main estimates and accounting judgments made by Repsol's management and director, when preparing the consolidated financial statements, related to the expected effects of climate change and the energy transition, and with risk of significant impact on the book value of assets and liabilities at December 31, 2022, are described below:

3.5.1) Calculating the recoverable amount of the assets

Methodology

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 different cash-generating units (CGUs)[5], whereby they use sector forecasts, prior results and the outlook for the performance of the business and development of the market that consider scenarios for the energy transition and decarbonization of the economy that are consistent with the objectives of the Paris Climate Summit and with the decarbonization commitments made by Repsol. See Note 3.5.2 of these consolidated financial statements and section 6.1 of the Group's consolidated Management Report:

[5] Cash-generating unit: the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The recoverability of the Group's investments in associates or joint ventures is assessed by comparing their recoverable amount with their 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 that are largely independent of those from the Group's other assets or CGUs.

Main macroeconomic assumptions

Macroeconomic variables are those used in the preparation of the budgets and business plans.

- The macroeconomic framework for the countries in which the Group operates takes into consideration variables such as inflation, GDP, exchange rate, etc. and is 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, natural gas, electricity and CO2 price paths used for the impairment test are our own estimates, which are compared with the scenarios given by international agencies and other market players. The paths are developed on the basis of available macroeconomic, financial and market information and the forecasts provided by analysts.

  In particular, crude oil and gas prices are calculated by analyzing key market variables and their foreseeable trend, including our own forecasts of the balance of supply and demand of energy and prices. The longer-term vision is also explained by monitoring other variables such as the decline of crude oil and gas fields, the current CAPEX, the financial sustainability of companies in the sector to certain price environments, and the dynamics in OPEC countries in terms of fiscal sustainability.

  i. To estimate near-term price trends, forecast reports produced by a selection of investment banks, macro consultants (Platts Analytics, IHS, Wood Mckenzie, Energy Aspects and Oxford Economics) and the International Energy Agency (IEA) are taken into account.
  ii. The source that provides a sufficiently detailed analysis of long-term forecasts is the IEA, a benchmark agency that also carries out detailed studies of supply, demand and price forecasts under different scenarios.

  With all these elements, econometric models of prices are made, which are compared with external forecasts, both public and private.[6]

  In 2022, the Group revised its short and medium-term expectations for future oil and gas prices, with respect to those used in the previous year, in view of the upward dynamics in the commodity markets in 2021, due to the economic recovery, the increase in demand and lower levels of investment, and in 2022, as a consequence of the changes in market dynamics brought on by the Russian invasion of Ukraine. Long term price forecasts for gas, which, as a transition fuel in decarbonization processes, will continue to play a big part in the electricity mix, are also revised upward.

- The most relevant CO2 price path for the Group in the impairment test corresponds to emission allowance prices in the current EU ETS mechanism. The path used for the impairment test (see Note 20) is aligned with the internal carbon price for making investment decisions on new projects. In 2021, the price path was revised upward with a significant increase over the prices used in 2020, mainly as a result of the more ambitious decarbonization targets announced by Repsol and those set by the European Union (up to 55% - Fit for 55. See Annex IV). In 2022, the path was revised only slightly upward compared to 2021 since the market situation did not change substantially. For other countries with emission allowances or CO2 taxes, specific assumptions are used.

- Forecasts for electricity prices in Spain are calculated using the Company's own model that weights the influence of the different factors on the wholesale market. Although the model is used mainly for natural gas prices and CO2 emission allowances, it also reflects the impact of new future developments on renewable generation capacity, as well as economic forecasts that may influence changes in demand. The conclusions obtained are compared with external forecasts that the Company obtains from specialized agencies. In 2022, the price path was revised upward, mainly in the first decade, with a significant increase over the prices used in 2021, to take into account higher gas prices and the effects of the upward cycle of raw materials.

- Regarding the expected demand scenarios for land transport used in the estimation of Repsol's industrial and commercial business cash flows, account was taken of the "Fit for 55" package of measures announced by the European Commission, and the new Repower EU roadmap for decarbonization, which brings forward the ban on the combustion engine and thus accelerates the energy transition in Europe, with significant decreases in the demand for fuels.

[6] The comparison is made to position the internal paths with respect to the averages and standard deviations calculated from the market consensus, which includes, among others, the "STEP" and "APS" scenarios of the World Energy Outlook 2022 - IEA (for more information https://www.iea.org).

To complete the information, given the inherent uncertainty of the long-term assumptions used, sensitivities (positive and negative) to reasonable variations in the main assumptions used in the impairment test (crude oil and gas prices, discount rates, etc.) are offered. See Note 20.2.

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 business. 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 risk. 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 and their main components are as follows:

- The risk-free interest rate for cash flows in US dollars is the US 10-year treasury bond and for cash flows in euros it is the German 10-year sovereign bond, adjusted when rates are negative;
- 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 specific risks of the business and/or asset;
- 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 each of the businesses.

Note 20.1 shows the discount rates used in the 2022 impairment test.

Estimated cash flows

For the estimation of cash flows[7] the expected path of the key variables is calculated in accordance with the forecasts used in the annual budget and in the strategic plans of each business, which are prepared using scenarios that consider the energy transition and decarbonization of the economy, and consistent with the decarbonization targets assumed by Repsol (see Note 3.5.2).

However, cash flows only take account of the current state of assets at the time of carrying out the estimate, without considering cash inflows and outflows corresponding to future improvements or restructuring. Specifically, future investments for improvements in the performance of the asset or for technological changes are not taken into account, not even those that can be anticipated today and that may represent a valid asset transformation strategy in the foreseeable context of the energy transition.

Hydrocarbon Upstream assets

Valuations of the production assets of Exploration and Production (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 and consistent with the climate and environmental regulations of each country. The maturity of the cash flows ranges between 2030 and 2071. Conventional assets do not go past the year 2050, while non-conventional assets, located in the USA, have a longer productive life. Approximately 97% of the value of the cash flows of these assets will be recovered before 2040, which demonstrates the Group's low exposure to "*stranded*" assets.

The general principles applied to determine the variables that most affect the cash flows of this business are described below:

- Hydrocarbon sale prices. The main 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.

[7] With the first application of IFRS 16 it became necessary to recognize rights of use and their allocation to different CGUs, with the consequent exclusion of fixed lease payments in calculations of value in use.

- Reserves, resources and production profiles. Production profiles are estimated on the basis of the productive life of existing wells and the development plans in place for each productive field. 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-Society of Petroleum Engineers)". The price paths used in this estimation are the same as in the asset impairment test.

  The estimate of oil and gas reserves and resources[8] is a key component of the Company's decision-making process[9]. The volume of oil and gas reserves and resources is used to calculate depreciation and amortization charges, and to assess the recoverability of the investments in assets and calculate dismantling provisions in the Upstream segment.

  Changes in volumes of reserves and resources could have a significant impact on the Group's results. For information on the Group's reserves, see the document *"Information on oil and gas Upstream activities."*

- 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 plans.

Assets of the Industrial segment

Cash flows are estimated on the basis of the outlook for their key variables (demand for oil products, unit contribution margins, investments and fixed costs). The main particular features of the most significant businesses are described as follows:

- With regard to Refining in Spain, projections were made up to 2040, foreseeing a drop in activity of around 80%. Demand for oil products is estimated to fall significantly both globally. In this scenario, less investments will be made in the refining sector, which will partly offset the effect of the drop in demand. It should be noted that this reduction in investments in traditional crude oil refining assets (as reflected in the recoverable value of current assets in the 2022 impairment test) does not include new investments in the transformation of industrial complexes in the context of the energy transition and in accordance with the Repsol Group's strategic vision (for example, investments in biofuels and synthetic fuels, circularity, hydrogen, etc.)

  In the short term, the war in Ukraine has generally increased hydrocarbon prices and has caused strengthening of the industrial margins. However, in the long term, the new dynamics caused by the conflict seem to favor an acceleration of the energy transition in Europe (new roadmap for decarbonization, Repower EU[10], bringing forward the ban on the combustion engine) and other public policies may reduce the competitiveness of the traditional refining industry in Spain (new taxes on oil companies), as well as the impact on refinery supply alternatives due to the restrictions on the supply of heavy crudes. In light of the above, a fall has clearly been seen in the outlook for the use and future profitability of the refining industrial complexes, as described in Note 20.1.

- In the Chemicals business, forecasts are made for five years, extrapolating from the fifth year's flow for subsequent years, without applying a growth rate. Chemical products are present throughout the value chain of almost all industries, so they play a fundamental role in facilitating the energy transition and decarbonization and it is estimated that they will remain strong in a scenario of Energy Transition. The use of chemical products and solutions can help address several of the challenges related to the energy transition, and many low carbon technologies rely on innovations in chemistry to become more efficient, affordable and scalable (e.g., materials for photovoltaic panels, weight reduction in vehicles, insulation, food preservation, and energy saving and efficiency).

  In the short term, the context of uncertainty caused by the war in Ukraine is reflected in a drop in demand and margins in the chemical industry, as described in Note 20.1.

- The cash flows for the Wholesale and Trading Gas businesses in North America are projected according to the term of the regasification and gas transportation contracts and were estimated in accordance with the following assumptions:

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[8] Reserves are classified as (i) Proven: the quantities of crude oil, natural gas and natural gas liquids that, with the information available to date, it is estimated can be recovered with reasonable certainty (there should be at least a 90% probability that the recovered quantities will equal or exceed the 1P estimate), (ii) Probable: additional reserves, which, added to the proven reserves, make up the 2P scenario (there should be at least a 50% probability that the quantities recovered will equal or exceed the 2P estimate; this scenario reflects the best estimate of reserves), and (iii) Contingent Resources: quantities of oil and natural gas 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. Proven or probable reserves can be developed (expected to be recovered from existing wells and facilities) or undeveloped (expected to be recovered through future investments.)
[9] Independent engineering firms periodically audit registered volumes (at least 95% of the reserves are audited externally in a three-year cycle.)
[10] REPowerEU is the European Commission's plan to make Europe independent of Russian fossil fuels well before 2030. The plan sets out several measures to reduce dependence on Russian fossil fuels rapidly and to bring forward the green transition, while increasing the resilience of the EU-wide energy system. This plan is based on the "Fit for 55" package of proposals. For more information, see Appendix III.

i. Gas and LNG prices. The international benchmark prices used are: HH, Algonquin and TTF (Title Transfer Facility), 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 expected activity, 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.

In the short term, the context of uncertainty caused by the war in Ukraine is reflected in a drop in demand for gas and in margins (due to the differential between the European and American markers) in the chemical industry, as described in Note 20.1.

Assets of the Commercial and Renewables segment

– For Commercial businesses, as a general rule, forecasts are made up to 2032. Perpetual income is not taken into account. Reductions in demand for fossil fuels forecast within the framework of European and Spanish decarbonization policies are taken into account, nor a period greater than ten years because, as this is sufficient to demonstrate the recoverability of the book value of current assets, it is unnecessary to assess long-term scenarios subject to high uncertainty under the European regulatory framework

– Forecasts for the electricity generation assets were made according to the expected useful life of the plants, in a range between 13 to 38 years depending on the technology (from lowest to highest: combined cycles, wind and photovoltaic and hydraulic power plants), applying the electricity sale prices included in the power purchase agreements (PPAs) for energy commitments with third parties and the estimate of market prices for the rest.

The recoverability of the Group's investments in associates or joint ventures is assessed by comparing their recoverable amount with their carrying amount (see Note 13). The recoverable amount of an investment in an associate or joint venture is assessed individually, using the same assumptions described previously, unless the associate or joint venture does not generate cash inflows that are largely independent of those from the Group's other assets or cash-generating unit.

3.5.2) Estimates and accounting judgments related to the risks and implications of climate change, decarbonization and the energy transition

The main risks associated with climate change are the so-called "*transitional*" risks[11], associated with the energy transition, and *"physical"* risks[12], which could be exacerbated by the advance of climate change. Given the nature and location of the Company's activities, Repsol is more exposed to transitional risk than to physical risk.

In December 2019, Repsol made public its commitment to be part of the solution in the fight against climate change by orienting its strategy toward being a company with net zero CO_2 emissions by 2050, in line with the goals of the Paris summit to limit global warming, and with the United Nations Sustainable Development Goals (SDGs). This objective was the basis for preparing the 2021-2025 Strategic Plan.

The reduction in the Carbon Intensity Indicator (CII)[13], measured in gCO_2e/MJ, is the metric used by the Company to monitor and set intermediate decarbonization targets toward reaching the Company's emission neutrality by 2050. The intermediate CII reduction objectives, with respect to 2016 levels, are: 15% in 2025, 28% in 2030 and 55% in 2040. The CII for 2022 (70.3 gCO_2e/ MJ) has decreased by 9.6% compared to the base year (2016).

For more information on the strategy and on the risks and opportunities of decarbonization, see section 6.1 Climate Change of the 2022 consolidated Management Report, prepared following the recommendations of the *Task Force on Climate-Related Financial Disclosures* (TCFD)[14], which Repsol has adopted voluntarily.

[11] The main transitional risks are regulatory, legal, technological, market and reputational.
[12] Floods or droughts, forest fires, tropical storms, tectonic movements, etc.
[13] The CII numerator takes account of emissions resulting from the company's activity (direct and indirect emissions from upstream, refining and chemical operations and from electricity generation) and emissions associated with the use of fuel products resulting from our primary energy production (oil and natural gas). The CII denominator includes energy that Repsol makes available to society in the form of end products resulting from the production of primary energy from oil and gas and from low-carbon energy sources. More information is available at www.repsol.com.
[14] G-20 finance ministers and central bank governors asked the Financial Stability Board (FSB) to review how the financial sector could deal with climate-related issues. The Financial Stability Board established a working group on disclosure of climate-related financial information (Task Force) that has prepared recommendations with the following central elements: governance, strategy, risk management, metrics and objectives. More information at https://www.fsb-tcfd.org.

The main accounting estimates and judgments made by Repsol's Management and Directors for the preparation of the consolidated financial statements that are most closely related to the effects of climate change and the energy transition.

Recoverable amount of the assets.

In accordance with IFRS standards, Repsol's financial statements are based on reasonable and sound assumptions that represent the Directors' best current estimate of the range of economic conditions that may exist in the foreseeable future in relation to climate change and energy transition (see 3.5.1).

Both the price paths and the demand, etc. used for the valuation of the assets in the impairment test take account of the commitments to decarbonize the economy and, therefore, assume restrictions on the use of fossil fuels and the development of new alternative technologies to drive the energy transition, which will lead to a reduction in the demand for hydrocarbon products in the medium and long term. Specifically, the assumptions used by Repsol consider energy transition scenarios, driven by decarbonization policies aligned with the climate change objectives of the COP-21 in Paris. The Company's strategy in these scenarios is oriented toward the objective of "net zero emissions" in 2050 (see section 6.1 of the Group's consolidated Management Report).

It is foreseeable that the energy transition will bring with it volatility and uncertainty regarding the evolution of prices and demand for raw materials over the coming decades. Some price paths prepared by third parties foresee a lower structural price for raw materials during the transition period, while other paths foresee higher structural prices as a result of changes in both supply and demand. Consequently, section 6.1. of the 2022 consolidated Management Report includes an analysis assessing the Company's resilience and its ability to achieve its net zero emissions goals by 2050 in different scenarios of decarbonization of the economy in the long term (2031-2050). This responds to the TCFD recommendations: "*Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.*"

In response to the demands of some information users, Note 20 reports the additional impacts that would result from using in the impairment the Net Zero Emissions 1.5°C scenario of the International Energy Agency published in its World Energy Outlook 2022 report[15].

The Group's assets with the greatest exposure to climate change are:

- Upstream activities in which the Group has significantly reduced its exposure in recent years. The capital employed in this business segment has decreased from €21,515 million in December 2018 to €12,282 million at December 31, 2022 (-43%). This reduction is explained by divestments in non-priority assets, by a progressive decrease in the investment effort in exploration, and by significant impairments recognized, in particular those of 2019 (approximately €6,000 million, mainly as a consequence of the evolution of forecasts for crude oil, and gas prices. It should also be taken into account that most of the Group's hydrocarbon reserves are gas (67%), a crucial product to facilitate the energy transition.
- The Refining business in Spain could be affected by regulatory measures associated with decarbonization policies or by a faster drop in demand for fossil fuels. Assuming more accelerated energy transition scenarios in Europe, in 2022, the Refining business revised downward its medium and long term forecasts as a result of the new European measures to accelerate the energy transition, the approved tax measures and the negative impact (beyond the short term) of market dynamics driven by the war in Ukraine. These circumstances will affect the profitability and competitiveness of some facilities and have led to the recognition of impairment provisions and for the dismantling of units that cannot be reconverted, and to a review of their useful lives for the purposes of amortization and provisions for dismantling. The impact of impairments on the 2022 income statement amounts to €-1,479 million before tax (see Note 20.1). In line with Repsol's strategy, the refining plants are being transformed into energy plants that will provide raw materials for the chemical and lubricants business, as well as other low-carbon energy products, including biofuels and hydrogen.
- Mobility businesses could also be affected by the reduction in the consumption of fossil fuels. For businesses in Spain, only cash flow projections for the next ten years have been considered, without the need to recognize any impairment; in Portugal, however, impairments have been recognized in the Mobility businesses, affected by the drop in future volumes in the new demand scenarios (see Note 20.1).

[15] The IEA NZE scenario is a "normative" scenario and is not intended to simulate demand for hydrocarbons based on market factors. Therefore, the price scenario that it proposes does not include, for asset valuation purposes, a realistic evolution of prices or demand. Normative (or prescriptive) scenarios describe a pre-specified future, presenting "a picture of the world achievable (or avoidable) only through certain actions. The scenario itself becomes an argument for taking those actions.

Useful lives of property, plant and equipment.

The energy transition and the rate at which it progresses may impact the remaining useful life of certain assets.

Assets assigned to the Upstream segment are generally amortized using a production unit methodology where amortization depends on the relationship between production (see Note 3.4) and the reserves that are expected to be produced without making additional investments. Expected production and reserve calculations take into account future demand and price impacts from decarbonization. It is estimated that 52% of the expected production will have been extracted by 2030 and 86% by 2040.

The depreciable assets existing in refining industrial complexes in Spain will be fully amortized for accounting purposes in 2040. In 2022, the useful life of units of the refining plants in Spain most affected by the energy transition has been reviewed and the date scheduled for starting their dismantling has been brought forward. This change in useful lives has not had a significant impact due to amortization on the Group's income statement. In relation to the depreciable assets that currently exist in the petrochemical complexes on the Iberian Peninsula, it is also estimated that they will be fully depreciated around 2040.

Regarding Mobility assets in the Iberian Peninsula, it is estimated that 72% of the book value of the current assets would be amortized in 2030 and 91% in 2040.

Dismantling provisions.

The assumptions initially used in the valuation of dismantling provisions (both in the initial recognition of the current value of estimated future costs and subsequent adjustments to reflect the passage of time) are subject to changes due to technological advances, regulatory changes, economic, political and environmental security factors, variations in the calendar or in the conditions of operations, etc. The energy transition may bring forward dismantling of the assets of the Upstream and Industrial segments. For the purposes of calculating the corresponding provisions, it is considered that most of these assets will begin to be dismantled in the next two decades. The risk from the calendar of dismantling and restoration activities for the Upstream and Industrial areas is limited thanks to expected production plans.

The calendar of dismantling and restoration activities is also reflected in the discount rate, in line with the average remaining useful life of the assets concerned. For more information, see Note 15.1.

CO_2 emission allowances.

In 2021, phase IV of the EU Emissions Trading System (EU-ETS) Directive began in Europe for the period 2021-2030. This would mean a reduction in the global number of emission allowances at an annual rate of 2.2% from 2021 to 2025. From then on, new rules, currently under discussion in the EU Parliament, Council and Commission, will be applied to increase the reduction of CO_2 emissions (in line with the new objective of a reduction of 55% in CO_2 emissions in the total European economy by 2030 compared to 1990 – Fit for 55) and to address its social impact. In this regard, at the end of 2022, a provisional tripartite agreement was reached to increase the reduction of emissions by 2030 to 62% in the sectors covered by this regime.

In 2022, Group companies were assigned free CO_2 allowances equivalent to 7.3 million tons of CO_2. The net expense for CO_2 emissions in 2022 was €493 million (mainly due to CO_2 emissions from Industrial complexes in Spain). For further detailed information on the recognition and valuation of CO_2 allowances, see Notes 15.1 and 16.

Others

- Deferred taxes. The valuation of the recoverability of deferred tax assets is carried out with the same scenarios and assumptions used to calculate the recoverable value of the assets (see 3.5.1), so they take account of decarbonization and energy transition processes. There are expected to be sufficient cash flows to recover the deferred tax assets recognized at December 31, 2022 (see Note 22).
- Onerous Contracts The closing or early termination of certain assets or activities may convert some supply contracts into onerous contracts. At December 31, 2022, the onerous contract provisions are not significant for the Group (see Note 15.1).
- Lawsuits In the normal course of the Group's business, entities are subject to legal and regulatory proceedings arising from current and past laws, including matters related to environmental issues (see Notes 15 and 29.1). At December 31, 2022, no lawsuits or litigation were being pursued against Repsol related to climate change.

BUSINESS SEGMENT REPORTING

(4) Information by business segment[16]

4.1) Definition of business 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 by the Group and their level of significance, as well as on the organizational structure and the way in which Repsol's management and directors analyze 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, 2022 and 2021, Repsol's reporting segments are as follows:

- Upstream (*Upstream/E&P*): activities for the exploration, development and production of crude oil and natural gas reserves.

- Industrial: activities related to (i) refining, (ii) petrochemicals, (iii) trading and transportation of crude oil and oil products, and (iv) sale, transportation and regasification of natural gas and liquefied natural gas (LNG).

- Commercial and Renewables: (i) low-carbon power generation and renewable sources, (ii) sale of gas and power, (iii) mobility and sale of oil products, and (iv) liquefied petroleum gas (LPG).

On the other hand, "Corporate and other" includes (i) corporate overhead expenses and, specifically, those expenses related to managing the Group that have not been invoiced to the business divisions as a service, (ii) the financial result, and (iii) intersegment consolidation adjustments.

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 ventures[17] (Group Reporting Model), 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 that are presented separately ("*Special Items*"). The financial result is assigned to the adjusted net income of *Corporate and other*.

The current cost of supply (CCS), commonly used in this industry to present the results of the Industrial and the Commercial and Renewables 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 inventory 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.

[16] Some of metrics presented in this Note are classified as Alternative Performance Measures (APMs) in accordance with ESMA guidelines (for further information, see Appendix II. Alternative Performance Measures 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 I.
[17] See Note 13 and Appendix II, where the Group's main joint ventures are identified.

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 costs, asset impairment losses (provisions/reversals), 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.

4.3) Financial information by business segment

The main financial information by business segment is included in this note and Appendix I. Additional information on the performance of these segments can be found in the accompanying consolidated Management Report, which is published together with these consolidated financial statements.

Business segment results	€ Million	
	2022	**2021**
Upstream	3,029	1,687
Industrial	3,150	606
Commercial and Renewables	540	542
Corporate and other	(58)	(381)
ADJUSTED NET INCOME	**6,661**	**2,454**
Inventory effect	75	797
Special items	(2,485)	(752)
NET INCOME	**4,251**	**2,499**

Other figures	**Operating income**		**Cash flow from operations**		**Free cash flow**		**Operating investment**(1)		**Capital employed**	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Upstream	5,705	3,027	5,706	3,355	3,983	2,465	2,127	1,223	12,282	12,348
Industrial	4,315	792	2,639	1,031	1,547	196	1,025	859	11,108	11,163
Commercial and Renewables	809	761	770	1,288	(26)	475	925	829	4,667	4,451
Corporate and other	(181)	(208)	(192)	(221)	(293)	(297)	105	83	172	594
TOTAL	**10,648**	**4,372**	**8,923**	**5,453**	**5,211**	**2,839**	**4,182**	**2,994**	**28,229**	**28,556**

(1) Includes investments accrued during the period.

4.4) Main developments in the year[18]

– The gradual recovery of the economy and mobility, allowed by the favorable evolution of COVID-19, was halted by the Russian **invasion of Ukraine**. As a consequence of the war (see Note 20.3), inflationary pressures have been exacerbated, bottlenecks have been generated in the supply chain and extraordinary volatility in the financial and raw material markets. Central banks have also changed their monetary policies, leading to a significant increase in interest rates, and there has been an increase in tax pressure on energy companies, (see Note 22). The Group completed the sale of the remaining assets in Russia in January 2022 (see Note 20.3 and 10).

– The complex, volatile **environment** has affected activities and results of the Company's businesses, but unevenly (see section 4. "*Financial performance and shareholder remuneration*" of the 2022 consolidated Management Report): although the rise in the prices of hydrocarbons and derivative products has raised the prices for the Upstream and the disruption of supply chains has increased Refining margins; but conversely the margins in Mobility businesses in Spain have been reduced by the policy of discounts applied by the company to mitigate the impacts on society of the rise on the sale prices of its products (see Note 19.1) and the extreme volatility in prices has caused losses in the gas trading businesses.

– In line with the provisions of the 2021-2025 Strategic Plan, in 2022, important agreements on **dilution** without loss of control (operations with minority interests), **divestment and acquisition** were reached. They will allow Repsol to focus its activities on the areas that offer the greatest competitive advantages, accelerate the decarbonization goals assumed.

[18] For a detailed description of the main events of the period, see the section 1. 2022 Overview of the 2022 consolidated Management Report .

In the Upstream segment: in September a binding agreement was signed with EIG (through its subsidiary Breakwater Energy Holdings S.À R.L.) for the **sale of a 25% stake in Repsol's hydrocarbon Upstream business** for an equity value of $3,350 million (subject to the customary closing adjustments for such transactions). This agreement values the Upstream business at $19 billion. The transaction is expected to be closed in the first quarter of 2023, since the customary regulatory approvals have been completed, following completion of the corporate reorganization of the business. Additionally, in 2022, divestments in Malaysia, Ecuador, Russia and Greece and the sale of part of the Canada assets were completed.

In Commercial and Renewables: **a 25% stake in Repsol Renovables, S.L.U. was sold** to Crédit Agricole Assurance and Energy Infrastructure Partners (EIP) for a price of €986 million (see Note 6.5), meaning that the Renewables business is valued at €4,383[19] million. At the time of the transaction, the company had a portfolio of more than 1.6 GW of installed renewable capacity, operating in Spain (conventional hydraulic and pumped-storage generation, Delta I and Delta II wind farms, Valdesolar photovoltaic plant, Kappa photovoltaic complex, etc.), the United States (Jicarilla 1 and Jicarilla 2 photovoltaic plants) and Chile (Cabo Leonés III wind farm, etc.). The agreement reinforces the financial position of the Company to achieve the strategic objective of reaching an installed capacity of 6 GW in 2025 and 20 GW in 2030.

An agreement was also reached to **acquire 100% of Asterion Energies**, which manages a portfolio of renewable assets of 7,700 MW in Spain, Italy and France, from the infrastructure fund Asterion Industrial for an amount of €560 million (its conclusion being subject to the customary regulatory approvals). Additionally, new solar projects have been acquired (such as Frye Solar, Outpost and Pinnington) in Texas (USA).

For more information, see section 2.5 of the 2022 consolidated Management Report.

– Regarding progress in the transformation of our businesses, the low-emission generation capacity in operation was increased with the entry into operation of the Jicarilla 2 photovoltaic project in the United States (63 MW) and, in Spain, entry into operation of the first farms of the Delta II wind project (60 MW) the sales of 49% of the stake in the Valdesolar photovoltaic project to The Renewables Infrastructure Group (TRIG) and of 49% of the Kappa photovoltaic project to the Pontegadea group have also been completed. In the Commercial businesses, digitalization continued to be promoted to achieve 8 million digital customers in 2025. The Waylet application incorporated 2.3 million new users during the year to end it with 5.5 million users. Advancing in its role as a significant player in the electricity and gas market in Spain, Repsol continued to increase its number of customers, which reached 1.5 million. For more information, see section 5.3 of the 2022 consolidated Management Report.

In the Industrial segment, progress continued to be made in the transformation of its industrial facilities into energy hubs, capable of generating products with a low, zero or even negative carbon footprint. At the beginning of March, work began on the first advanced biofuels plant in Spain, being built at the Cartagena refinery, and a stake was acquired in the Canadian company Enerkem, a world leader in the production of fuels and renewable chemical products through gasification of non-recyclable waste, for €54 million. Another of the pillars identified by the company to achieve a more sustainable industry is renewable hydrogen. Repsol has been a leader in the SHYNE (*Spanish Hydrogen Network*) project, a Spanish consortium made up of 33 entities from different sectors that will implement projects expected to generate more than 13,000 jobs. For more information, see section 5.2 of the 2022 consolidated Management Report.

– The financial structure is significantly strengthened by the **reduction of net debt** (see Note 5) and **increased liquidity** (see Note 10.2) driven by the higher cash flow from operations (see Note 24) and, to a lesser extent, by cash obtained from the sale of minority stakes and divestments of Upstream assets. In 2022 (i) the outstanding bonds issued by Repsol Oil & Gas Canada Inc. were **repurchased** and canceled, with a nominal amount of $412 million; (ii) a bond issued by RIF for a nominal amount of €500 million was canceled at maturity; and (iii) the financial debt (project finance) associated with the Saint John LNG regasification plant was canceled for an amount of $586 million. All these actions were recognized by two of the main credit rating agencies (Moody's and Standard & Poor's) which improved Repsol's long-term credit rating, with a stable outlook (see Note 7 and section 4.3 of the 2022 consolidated Management Report).

[19] Considers the business value after divestment of 49% of Delta's stake.

– Following the strong performance of its businesses, the **Group's tax contribution**[20] reached an all-time high in 2022, with taxes paid in the year amounting to €17,002 million (cash basis)[21]. The taxes that reduce our profit (including not only corporate income tax but all taxes that constitute an expense in the income statement) accrued in the year amounted to €5,530 million, accounting for 56% of our profit before tax. These amounts do not include the Temporary Energy Levy payable on transactions carried out in Spain during 2022 (1.2% of revenue, subject to certain adjustments), as it is payable in 2023 and, according to the Spanish Securities and Exchange Commission, the corresponding expense should not be recognized until 1 January 2023. For more information, see Note 22 to these financial statements and section 6.6 of the 2022 consolidated Management Report.

– The **share price** experienced a significant recovery (average price in 2022 27% above that of 2021). Shareholder **remuneration** in 2022 was made with the payment of a dividend of 0.30 euros gross per share for a total amount of €439 million in January 2022, charged to voluntary reserves from retained earnings, and a gross dividend of 0.33 euros per share for a total amount of €471 million in July 2022, charged to the 2021 financial results (taken together, 7% higher than the remuneration in 2021). Additionally, three capital reductions were carried out through the redemption of a total of 200 million treasury shares (see Note 6.2), which permits improve earnings per share.

[20] Figures of Group's tax contribution calculated according to Group Reporting Model described in this Note.
[21] The tax contribution generated by our activities and paid by our companies is supported by the company ("tax burden") and by its customers, employees and investors (taxes collected from third parties).

CAPITAL STRUCTURE AND FINANCIAL RESOURCES

(5) Financial structure

Repsol has adopted a policy of financial prudence with the aim of maintaining its investment grade credit rating.

The determination of the target financial structure takes into account a leverage ratio that ensures the Group's financial strength, defined as the relationship between Net debt[22] and Capital employed[23]. Both metrics are calculated, for these purposes, in accordance with the Group's reporting model 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 Appendix I and in the consolidated Management Report (www.repsol.com). The calculations of these ratios at December 31, 2022 and 2021, are as follows:

Financial structure *€ Million*	**2022**	**2021**
Equity	25,973	22,794
Net financial debt (1)	2,256	5,762
Capital employed (1)	28,229	28,556
Leverage ratio (%)	**8.0**	**20.2**

(1) Alternative Performance Measure.

(6) Equity

Equity	€ Million **2022**	 **2021**
Shareholders' equity:	**24,611**	**22,320**
Share capital	1,327	1,527
Share premium and Reserves:	16,750	16,655
Share premium	4,038	4,038
Legal reserve (1)	314	314
Retained earnings and other reserves (2)	12,431	12,303
Dividends and remuneration on account	(33)	—
Treasury shares and own equity investments	(3)	(641)
Net income for the period attributable to the parent	4,251	2,499
Other equity instruments	2,286	2,280
Other cumulative comprehensive income	**683**	**94**
Equity instruments with changes through other comprehensive income	(15)	(4)
Hedging transactions	(144)	51
Translation differences	842	47
Non-controlling interests	**679**	**380**
TOTAL EQUITY	**25,973**	**22,794**

(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) This heading includes (i) the transfer from income for the year attributable to the parent for 2021. (ii) a reserve for retired capital amounting to €480 million, which is equivalent to the nominal value of the shares retired in the capital reductions for the 2018-2021 period under the "*Repsol Flexible Dividend*" program (see Note 6.3) and (iii) income from sales transactions without loss of control (see Note 6.5).

[22] The formula considers net and not gross financial debt to factor in the effect of financial investments.
[23] Corresponds to the sum of net financial debt and equity.

6.1) Share capital

The share capital at December 31, 2022 and 2021 was represented by 1.327.396.053[24] and 1,527,396,053 shares of 1 euro par value each, respectively, fully subscribed and paid up, represented by book entries and admitted to official listing on the continuous market of the Spanish stock exchanges.

According to the latest information available, the significant shareholders of the Repsol company are:

	% of voting rights attributed to shares		% of voting rights through financial instruments	% of total voting rights
Significant shareholders	**Direct**	**Indirect**		
BlackRock, Inc. (1)	—	5.306	0.169	5.475
Norges Bank	3.244	—	0.006	3.250

(1) BlackRock, Inc. holds its interest through a number of controlled entities.

At December 31, 2022 Repsol, S.A.'s shares were listed on the following markets:

Number of shares listed	% of share capital listed	Stock exchanges (1)	Closing	Quarter average	Currency
1,327,396,053	100%	Spanish stock exchanges (Madrid, Barcelona, Bilbao, Valencia)	14.850	13.838	Euros
		OTCQX	15.930	14.090	Dollars

Note: For more information regarding Repsol's shares, see section 4.4 of the 2021 consolidated Management Report.
(1) Exchanges, markets or multilateral trading platforms on which the shares may be traded without having been specifically requested by the Group are not included.

For more information on the share price, see section 4.4 of the 2022 consolidated Management Report.

6.2) Treasury shares and own equity investments

The main transactions undertaken by the Repsol Group involving treasury shares[25] were as follows:

			2022			2021
€ Million (amount)	**No. of shares**	**Amount**	**% capital**	**No. of shares**	**Amount**	**% capital**
Opening balance	**64,110,571**	**641**	**4.20 %**	**19,601,118**	**162**	**1.25 %**
Market purchases (1)	148,084,074	1,990	11.16 %	123,085,955	1,272	8.06 %
Market sales (1)	(11,969,080)	(161)	0.90 %	(38,081,992)	(366)	2.49 %
Capital reduction	(200,000,000)	(2,467)	15.07 %	(40,494,510)	(427)	2.65 %
Balance at year end	**225,565**	**3**	**0.02 %**	**64,110,571**	**641**	**4.20 %**

(1) In 2022 and 2021 "Market purchases" included purchases made under the Company's Treasury Share Repurchase Plan for redemption (in 2022, a total of 106 million shares were acquired. In 2022 and 2021 "Market purchases" and "Market sales" also included the shares acquired and delivered within the framework of the Share Acquisition Plan and the Share Purchase Plans for the beneficiaries of the multi-year variable remuneration plans (819,080 shares were delivered in 2021 in accordance with that established in each of the plans described in Note 27.4), as well as 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.

At December 31, 2022, the Company also held derivatives on treasury shares (see Note 9)

6.3) Dividends and shareholder remuneration

The cash remuneration to the shareholders of Repsol, S.A. in 2022 was 0.63 euros per share:

- In January, a cash dividend of 0.30 euros gross per share was paid, charged to voluntary reserves from retained earnings, for a total amount of €439[26] million.
- In July, a cash dividend of 0.33 euros gross per share was paid, charged to the results of the 2021 financial year, for a total amount of €471[23] million.

[24] Share capital after the execution in December of the capital reduction through the redemption of 50 million treasury shares.
[25] The shareholders at the Annual General Meeting held on May 11, 2018, authorized the Board of Directors for a period of 5 years to carry out the 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.
[26] Remuneration paid for outstanding shares of Repsol, S.A. carrying dividend rights.

Additionally, three capital reductions were executed through the amortization of 200 million treasury shares that contribute to shareholder remuneration by increasing earnings per share:

– In May, the capital reduction approved by the 2022 Annual General Meeting, under item seven of the Agenda, was carried out through the redemption of 75 million treasury shares with a par value of one euro each.
– In October, the capital reduction agreed by the Board of Directors on July 27, 2022, as approved by the 2022 Annual General Meeting, under item eight of the agenda, was carried out through the redemption of 75 million treasury shares with a par value of 1 euro each.
– In December, the capital reduction agreed by the Board of Directors on Wednesday, October 26, 2022, as approved by the 2022 Annual General Meeting, under item eight of the agenda, was carried out through the redemption of 50 million treasury shares with a par value of one euro each. The share capital resulting from the reduction was set at 1,327,396,053 shares (see previous section of this Note 6.1, "Share Capital").

In 2021, shareholder remuneration amounted to 0.588 euros per share, corresponding to the implementation in January 2021 of the "Repsol Flexible Dividend" program and a cash dividend paid in July (0.30 euros gross per share). Additionally, a capital reduction was carried out through the amortization of 40,494,510 treasury shares.

2023 shareholder remuneration

On January 11, 2023, shareholders were paid a total of €0.35 gross per share corresponding to: (i) the amount of €0.325 gross per share charged to voluntary reserves (approved by the 2022 Annual General Meeting, under item six of the agenda.) and (ii) an amount of €0.025 per share, as an interim dividend against the results of the 2022 financial year (approved by the Board of Directors in October). The paid amount was €454[27] million.

Additionally, the meeting of the Board of Directors in October agreed to submit for the approval of the next Annual General Meeting the payment in 2023 of a complementary remuneration (in addition to that paid in January 2023) to shareholders of 0.35 gross euros per share which, at the date of preparing these financial statements, the Board of Directors has agreed to propose being charged to the 2022 financial results. At the date of authorization for issue, the Board of Directors agreed to implement a program to repurchase treasury stock for a maximum of 35 million shares and to propose to the next Annual General Meeting a capital reduction through the amortization of 50 million treasury shares with a nominal value of €1 each.

For more information, see section 4.4 of the 2022 consolidated Management Report.

6.4) Other equity instruments

– On March 2021, Repsol International Finance, B.V. ("RIF") finalized the terms of the issuance of a series of subordinated bonds secured by Repsol, S.A. for a total of €750 million, which were perpetual bonds or did not have a maturity date, redeemable at the request of the issuer after the sixth year, or in certain cases provided for in the terms and conditions. The bonds were placed with qualified investors and are listed on the Luxembourg Stock Exchange. Their main characteristics are as follows:

ISIN	XS2320533131
Amount	€750 million
Period for the first option to redeem	12/22/2026 - 03/22/2027
Interest (payable annually)	2.5% until March 22, 2027, and on that date a 5-year swap rate applies plus an additional spread according to the terms and conditions of the bonds.

In addition, in March 2021 RIF redeemed the remaining balance of the issue of subordinated bonds issued in March 2015 at their nominal value plus the unpaid interest accrued up until the redemption date for a total of €422 million (€594 million of the nominal amount corresponding to this issue were redeemed in 2020, paying those accepting the offer a total of €606 million in cash).

– On June 2, 2020, RIF issued two series of subordinated bonds secured by Repsol, S.A. for a total of €1,500 million, which were perpetual bonds or did not have a maturity date, redeemable at the request of the issuer after the sixth and eighth year, or in certain cases provided for in the terms and conditions. The bonds were placed with qualified investors and are listed on the Luxembourg Stock Exchange. Their main characteristics are as follows:

[27] Remuneration paid to the outstanding shares of Repsol, S.A. entitled to receive the dividend

	Series 1	Series 2
ISIN	XS2185997884	XS2186001314
Amount	€750 million	€750 million
Period for the first option to redeem	03/11/2026-06/11/2026	09/11/2028-12/11/2028
Interest (payable annually)	3.750% until June 11, 2026, and on that date a 5-year swap rate applies plus an additional spread according to the terms and conditions of the bonds	4.247% until December 11, 2028, and on that date a 5-year swap rate applies plus an additional spread according to the terms and conditions of the bonds

In accordance with the terms and conditions of the issues, 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 issues (the prospectuses on the issues are available on www.repsol.com).

These bonds, which totaled a nominal amount of €2,250 million at December 31, 2022, were recognized under "*Other equity instruments*", since it is considered that they do not qualify for recognition as financial liabilities, since their redemption and coupon payments are at the discretion of Repsol. The finance expense, net of taxes, associated with the coupon on the subordinated bonds has been recognized under "*Retained earnings and other reserves*" amounting to €-60 million (€-60 million in 2021).

6.5) Non-controlling interests

Equity attributed to minority interests at December 31, 2022 and 2021 corresponds mainly to the companies or subgroups of companies detailed below:

Non-controlling interests *€ Million*	**Repsol Renovables, S.L.U.**	**Petronor, S.A.**	**Rest**	**Total**
Balance at December 31,2020	**—**	**172**	**72**	**244**
Distributed dividends	—	1	(1)	—
Income for the year	8	5	16	29
Investments/Divestments[(1)]	170	—	(66)	104
Other movements	—	(3)	6	3
Balance at December 31,2021	**178**	**175**	**27**	**380**
Distributed dividends	(33)	(29)	(4)	(66)
Income for the year	13	76	5	94
Investments/Divestments[(1)]	294	—	5	299
Other movements	(29)	(2)	2	(28)
Balance at December 31,2022	**423**	**220**	**35**	**679**

Note: For additional information on the companies in the Group, see Appendix IIA.
[(1)] Repsol Renovables, S.L.U. includes, in 2022, the impact of non-controlling interests associated with (i) the sale of 25% of Repsol Renovables, S.L.U. (see Note4.4), (ii) the sale of 49% of the stake in the Valdesolar photovoltaic park to The Renewables Infrastructure Group (TRIG) and (iii) the sale of 49% of the Kappa photovoltaic complex to Pontegadea. In 2021, the divestment of 49% of Delta I's stake to the Pontegadea group. The total impact on reserves of these operations amounts to €735 million.

The most relevant items related to the subgroups of companies with minority interest stakes that appear on the balance sheet and income statement and that are used as the basis for the preparing these consolidated financial statements, i.e., prior to intercompany eliminations, are as follows:

Balance sheet and income statement summary (100%, before eliminations)	**2022**	
€ Million	**Repsol Renovables, S.L.U. Subgroup**	**Petronor, S.A.**
Non-current assets	2,494	1,206
Current assets	713	1,982
Total Assets	**3,207**	**3,188**
Non-controlling interests	**206**	**—**
Non-current liabilities	1,280	154
Current liabilities	835	1,468
Total Equity and Liabilities	**2,115**	**1,622**
Operating Income	105	736
Net Income before tax	58	742
Net income	**23**	**543**

(7) Financial resources

7.1) Financial liabilities

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

Financial Liabilities	€ Million	
	2022	**2021**
Non-current financial liabilities:		
Non-current financial liabilities	10,130	10,185
Non-current trade derivatives [(1)]	639	180
Current financial liabilities:		
Current financial liabilities	3,546	4,611
Current trade derivatives [(2)]	718	871
TOTAL	**15,033**	**15,847**

[(1)] Recognized under "*Other non-current liabilities*" on the balance sheet.
[(2)] Recognized under "*Trade and other payables*" on the balance sheet.

The breakdown of these financial liabilities at December 31, 2022 and 2021, is provided below:

Financial Liabilities	December 31, 2022 and 2021									
	At fair value through profit or loss		other comprehensive income		At amortized cost		**Total**		Fair value	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	2022	2021
Bonds	—	—	—	—	5,924	6,584	**5,924**	**6,584**	5,362	6,970
Loans [(1)]	—	—	—	—	1,258	—	**1,258**	**—**	1,267	—
Lease liabilities	—	—	—	—	2,404	2,441	**2,404**	**2,441**	n/a	n/a
Bank borrowings	—	—	—	—	544	983	**544**	**983**	526	852
Derivatives	332	207	307	51	—	—	**639**	**258**	—	—
Other financial liabilities	—	—	—	—	—	99	**—**	**99**	—	102
Non-current	**332**	**207**	**307**	**51**	**10,130**	**10,107**	**10,769**	**10,365**		
Bonds	—	—	—	—	1,892	1,986	**1,892**	**1,986**	1,885	1,977
Loans [(1)]	—	—	—	—	225	1,087	**225**	**1,087**	225	1,087
Lease liabilities	—	—	—	—	519	507	**519**	**507**	n/a	n/a
Bank borrowings	—	—	—	—	593	904	**593**	**904**	593	904
Derivatives	872	747	163	244	—	—	**1,035**	**991**	—	—
Other financial liabilities	—	—	—	—	—	7	**—**	**7**	—	6
Current	**872**	**747**	**163**	**244**	**3,229**	**4,491**	**4,264**	**5,482**		
TOTAL [(1) (2)]	**1,204**	**954**	**470**	**295**	**13,359**	**14,598**	**15,033**	**15,847**		

NOTE: For the fair value hierarchy of financial liabilities measured at fair value, see section 7.5.
[(1)] Includes loans granted by Group companies that are not eliminated in the consolidation process.
[(2)] In relation to liquidity risk, the distribution of financing by maturity at December 31, 2022 and 2021 is disclosed in Note 10.

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

Average financing and cost	**2022**		**2021**	
€ Million	Average volume	Average cost	Average volume	Average cost
Bonds	8,267	1.53 %	8,646	1.69 %
Bank borrowings	1,494	2.68 %	1,181	1.75 %
Other financial liabilities	1,273	3.66 %	1,104	1.34 %
TOTAL	**11,034**	**1.93 %**	**10,931**	**1.71 %**

NOTE: Does not include lease liabilities or derivatives.

7.2) Bonds

Key issues, repurchases and redemptions carried out in 2022[28]*:*

In May 2022, the bond issued by Repsol International Finance B.V. (RIF) in May 2017 under the EMTN Program for a nominal amount of €500 million and a fixed annual coupon of 0.500% was redeemed.

Between the months of May and June, all the bonds issued by Repsol Oil & Gas Canada Inc. (ROGCI) pending maturity were repurchased and canceled for a nominal amount of $412 million, with the following breakdown:

ISIN	Issuer	Date of issue	Currency	Nominal amount (millions)	Average rate %	Maturity
US87425EAE32	Repsol Oil & Gas Canada Inc.	Oct-97	Dollar	50	7.250%	Oct-27
US87425EAH62	Repsol Oil & Gas Canada Inc.	May-05	Dollar	88	5.750%	May-35
US87425EAJ29	Repsol Oil & Gas Canada Inc.	Jan-06	Dollar	102	5.850%	Feb-37
US87425EAK91	Repsol Oil & Gas Canada Inc.	Nov-06	Dollar	115	6.250%	Feb-38
US87425EAN31	Repsol Oil & Gas Canada Inc.	May-12	Dollar	57	5.500%	May-42

Detail of bonds outstanding at December 31, 2022, all secured by Repsol, S.A.:

ISIN	Issuer	Date of issue	Currency	Nominal amount (millions)	Average rate %	Maturity	Listed (3)
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%	Mar-75	LuxSE
XS1352121724 (1)	Repsol International Finance, B.V.	Jan-16	Euro	100	5.375%	Jan-31	LuxSE
XS2035620710 (1)	Repsol International Finance, B.V.	Aug-19	Euro	750	0.250%	Aug-27	LuxSE
XS2156581394 (1)	Repsol International Finance, B.V.	Apr-20	Euro	750	2.000%	Dec-25	LuxSE
XS2156583259 (1)	Repsol International Finance, B.V.	Apr-20	Euro	750	2.625%	Apr-30	LuxSE
XS2241090088 (1)	Repsol International Finance, B.V.	Oct-20	Euro	850	0.125%	Oct-24	LuxSE
XS2343835315 (1)	Repsol International Finance, B.V.	May-21	Euro	300	EUR 3m + 0.7%	May-23	LuxSE
XS2361358299 (1) (4)	Repsol Europe Finance, S.à.r.l.	Jul-21	Euro	650	0.375%	Jul-29	LuxSE
XS2361358539 (1) (5)	Repsol Europe Finance, S.à.r.l.	Jul-21	Euro	600	0.875%	Jul-33	LuxSE

Note: Excludes perpetual subordinated bonds, which qualify as equity instruments (see Note 6.4 of the 2021 consolidated financial statements), issued by RIF in June 2020 and March 2021 for an outstanding nominal amount at December 31 2022 and 2021 of €1,500 million and €750 million, respectively (see Note 6.4).

(1) Issues made under the EMTN Program.
(2) Subordinated bond (does not correspond to any open-ended or shelf program) with a coupon that will be revised on March 25, 2025 and March 25, 2045.
(3) LuxSE (Luxembourg Stock Exchange). Multilateral trading systems or other trading centers or non-official OTC markets are not considered. In January 2023, a repurchase and partial redemption of this bond was completed (see Note 30).
(4) Bond linked to a target of a 12% reduction in the Carbon Intensity Indicator (CII) by 2025. If the Group fails to meet these targets, the coupon on the bonds will be increased by 0.25% (payable in 2027, 2028 and 2029).
(5) Bond linked to a target of a 25% reduction in the CII by 2030. If the Group fails to meet these targets, the coupon on the bonds will be increased by 0.375% (payable in 2032 and 2033). For information on the performance of the CII, see section 6.1 of the 2021 consolidated Management Report and the CII verification report (available at www.repsol.com).

In 2022 Repsol Europe Finance, S.à.r.l. (REF) maintain a Euro Commercial Paper (ECP) Program, underwritten by Repsol, S.A., with a limit of up to €3,000 million. Under this program, several issues and cancellations took place over the course of the period, with an outstanding nominal amount of €1,532 million at December 31, 2022 (€1,418 million at December 31, 2021), that were issued by RIF under the Program that was in force as of that date.

Sustainable finance framework

The sustainable finance framework (the "Framework", available at www.repsol.com), published in June 2021 was updated in March 2022 with the new transition path published on "Low Carbon day". This framework incorporates both instruments aimed at financing specific projects (green and transition) and instruments linked to the company's sustainability

[28] Main issues and redemptions in 2021: (i) in May, RIF issued bonds guaranteed by Repsol S.A. under the EMTN Program for an amount of €300 million, maturing in May 2023 and with a variable coupon equivalent to 3-month Euribor plus 70 basis points, (ii) in July, REF completed the issuance of two bonds guaranteed by Repsol S.A. under the EMTN Program linked to sustainable commitments; one for the amount of €650 million, maturing in May 2029 and with a fixed coupon of 0.375% and, the other, for the amount of €600 million, maturing in May 2033 and with a fixed coupon of 0.875% and (iii) in October, RIF canceled the bond issued for a face value of €1,000 million and a fixed annual coupon of 3.625% at maturity.

commitments (Sustainability-Linked Bonds, or SLBs). For more information, see section 4.3 of the 2022 consolidated Management Report.

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 REF and secured by Repsol, S.A., with a face value of €5,250 million, contain certain early termination clauses of the debt (including cross-acceleration and 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 series of bonds affected or on the basis of an extraordinary resolution, may declare the early maturity of the bonds. In addition, the holders of these bonds may redeem them if, as a result of a change in control of Repsol S.A., Repsol's credit ratings are downgraded to below investment grade status.
- The subordinated bond issued by RIF and secured by Repsol, S.A. in March 2015 for a total nominal value of €1,000 million, do not have early redemption covenants other than in the event of dissolution or liquidation. These same conditions apply to the subordinated bonds issued in June 2020 and March 2021 for a nominal amount of €2,250 million, described in Note 6.4.

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 give rise to the early repayment of any of its financial commitments.

At December 31, 2022 and 2021 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.

7.3) Lease liabilities

The liabilities recognized[29] for lease payables at December 31, 2022 and 2021 amounted to €2,923[30] million and €2,948 million, respectively. The main lease agreements relate to gas transportation contracts in North America and the Group's gas stations in Spain, Portugal and Peru, which are described in Note 12.

7.4) 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.

In 2022, the loans (principal and interest) arranged to finance the investment in the Saint John LNG, S.L. project in Canada and the associated financial derivatives were repaid, leading to the derecognition of bank borrowings for a total of $586 million.

Additionally, in December 2022 a loan was signed with the European Investment Bank (EIB) for an amount of €120 million. The disbursement of the loan will take place in January 2023.

[29] 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, most of which extend for the period 2023-2044, the estimated future undiscounted payments of which would amount to 164 million euros, the most significant being the five-year extension of the lease agreement for a vessel amounting to €119 million (these amounts do not include the optional extensions of contracts with a low probability of execution, specifically the contracts, described in Note 12, with Emera Brunswick Pipeline and Maritimes & North East Pipeline); and (iii) lease contracts signed and not started, with future fixed payments of €2 million in 2023 and €9 million in 2024 and subsequent years.

[30] In 2022 and 2021, 7% and 6%, respectively, correspond to contracts that mature in more than 15 years.

7.5) Fair value of financial liabilities

Fair value of financial instruments

The valuation techniques used for financial instruments classified in level 2 and 3 hierarchies are based, in accordance with accounting regulations, on an income approach, which consists of discounting known or estimated future flows using discount curves built from the reference interest rates in the market (in derivatives, they are estimated through market-implied forward curves, with adjustments for credit risk based on the life of the instruments, or other types of adjustments. In the case of options, pricing models based on the Black & Scholes formulas are used.

The essential variables for the valuation of financial instruments depend on the type of instrument, but are basically: exchange rates (spot and forward), interest rate curves, counterparty risk curves, commodity prices (spot and forward) and equity prices, as well as the volatility of all the aforementioned factors. In all cases, market data is obtained from recognized information agencies or corresponds to quotes from official organizations.

Financial instruments recognized at fair value are classified, based on their calculation methodology, into three levels:
Level 1: Valuations based on a quoted price in an active market for the same instrument, referring mainly to derivatives held to trade.
Level 2: Valuations based on a quoted price in an active market for similar financial assets or based on other valuation techniques that take into account observable market data.
Level 3: Valuations based on variables that are not directly observable in the market, such as financial participations or electricity PPAs.

The classification of financial liabilities recognized in the financial statements at their fair value, based on the methodology for calculating such fair value, is as follows:

Fair value of financial liabilities	Level 1		Level 2		Level 3 [1]		**Total**	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
At FV through profit or loss	366	647	461	301	377	6	1,204	954
At FV through other comprehensive income	1	96	73	132	396	67	470	295
TOTAL	**367**	**743**	**534**	**433**	**773**	**73**	**1,674**	**1,249**

[1] The breakdown of the reconciliation of opening balances to closing balances for those financial liabilities classified under level 3 is as follows:

€ Million	**2022**
Opening balance	**73**
Income and expenses recognized in profit and loss	370
Income and expenses recognized in equity	330
Closing balance	**773**

NOTE: None of the possible foreseeable scenarios for the assumptions used would result in significant changes in the fair value of the instruments classified in level 3 of the fair value hierarchy.

In 2022 and 2021 there have been no transfers between levels of hierarchy in financial instruments.

(8) Financial assets

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

Financial assets	€ Million	
	2022	**2021**
Non-current assets		
Non-current financial assets	1,437	1,249
Non-current trade derivatives [1]	73	133
Current assets		
Other current financial assets [2]	3,058	2,451
Current trade derivatives [3]	498	1,027
Cash and cash equivalents	6,512	5,595
TOTAL	**11,578**	**10,455**

[1] Recognized under "*Other non-current assets*" on the balance sheet.
[2] The variation is due mainly to the placement of deposits during the period.
[3] Recognized under "*Trade and other receivables*" (see Note 17) in "*Other receivables*" on the balance sheet.

The detail of these assets at December 31, 2022 and 2021 is as follows:

Asset details	At fair value through profit or loss		At fair value through other comprehensive income		At amortized cost [(4)]		Total	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Equity instruments [(1)]	26	27	56	89	—	—	**82**	**116**
Derivatives	59	203	18	22	—	—	**77**	**225**
Loans	—	—	—	—	965	913	**965**	**913**
Time deposits	—	—	—	—	355	85	**355**	**85**
Other financial assets	22	24	—	—	9	19	**31**	**43**
Non-current	**107**	**254**	**74**	**111**	**1,329**	**1,017**	**1,510**	**1,382**
Derivatives	845	860	149	319	—	—	**994**	**1,179**
Loans	—	—	—	—	67	57	**67**	**57**
Time deposits	—	—	—	—	2,480	2,232	**2,480**	**2,232**
Cash and cash equivalents [(2)]	4	4	—	—	6,508	5,591	**6,512**	**5,595**
Other financial assets	1	1	—	—	14	9	**15**	**10**
Current	**850**	**865**	**149**	**319**	**9,069**	**7,889**	**10,068**	**9,073**
TOTAL [(3)]	**957**	**1,119**	**223**	**430**	**10,398**	**8,906**	**11,578**	**10,455**

NOTE: For the fair value hierarchy of financial assets measured at fair value, see 8.2 in this Note
[(1)] Includes non-controlling financial investments in certain companies over which the Group does not have management influence.
[(2)] Corresponds mainly 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. Includes "*Cash and banks*" for €2,676 and "*Other financial assets*" for €3,836.
[(3)] Does not include "*Other non-current assets*" and "*Trade and other receivables*" in the balance sheet, which at December 31, 2022 amounted to €766 million for non-current and €8,529 million for current, while at December 31, 2021 these headings amounted to €745 million for non-current and €7,211 million for current, respectively, corresponding to trade receivables net of the related provisions for impairment.
[(4)] The items that do not accrue explicit interest are recognized at their nominal value whenever the effect of not discounting the related cash flows is not significant.

The average return on the financial assets (not including cash and cash equivalents) was accrued at an average interest rate of 3.50% and 3.0% in 2022 and 2021, respectively.

8.1) Loans

In 2022 and 2021," *Current and non-current loans*" include mainly those loans granted to companies accounted for using the equity method, which are not eliminated in the consolidation process (see Note 13), amounting to €1,032 million and €970 million respectively. These included the credit facility signed by Petroquiriquire, S.A., Repsol and Petróleos de Venezuela, S.A. (PDVSA) and the financing of joint ventures.

In October 2016 Petroquiriquire, S.A., Repsol and PDVSA signed a range of agreements to shore up the financial structure of Petroquiriquire 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, from which no new drawdowns other than those already taken may be made until November 2021; 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 offtakers 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 may 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, S.A. 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. Failure by PDVSA to comply with any 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, 2022, the cumulative drawdowns under this credit facility amounted to $839 million, with an outstanding balance at December 31, 2022 of € 347 million (a gross balance of €868 million and a provision of €521 million) and €304 million at December 31, 2021 (see Note 20.3).

In addition, Repsol granted a loan to Cardón IV, which matures annually and can be extended by the shareholders (Repsol and Eni), and has been considered part of the net investment of this company (see Note 13).

The maturity of these types of net financial assets is as follows:

Maturity of loans	€ Million	
	2022	**2021**
2023	67	88
2024	112	106
2025	200	93
2026	293	208
2027	2	—
Subsequent years	358	418
TOTAL	**1,032**	**913**

8.2) Fair value of financial assets

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

Fair value of financial assets	Level 1		Level 2		Level 3		Total	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
At FV through profit or loss	256	567	647	496	54	56	957	1,119
At FV through other comprehensive income	83	294	28	2	112	134	223	430
TOTAL	**339**	**861**	**675**	**498**	**166**	**190**	**1,180**	**1,549**

(1)The breakdown of the reconciliation of opening balances to closing balances for those financial assets classified under level 3 is as follows:

€ Million	**2022**
Opening balance	**190**
Income and expenses recognized in profit and loss	(1)
Income and expenses recognized in equity	(13)
Reclassifications and other	(10)
Closing balance	**166**

NOTE: None of the possible foreseeable scenarios for the assumptions used would result in significant changes in the fair value of the instruments classified in level 3 of the fair value hierarchy.

No financial instruments were transferred between hierarchy levels in 2022 or 2021.

(9) Derivative and hedging transactions

9.1) Accounting hedges

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 Group contracts derivatives to hedge exposure to changes in cash flows, most notably at close of 2022 the following::

- Cash flow hedges in the form of interest rate swaps 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 pays a weighted average interest rate of 1.762% and receives 6-month Euribor. At December 31, 2022 the fair value recognized in equity, yet to be recognized in profit or loss, amounts to €-32 million after tax at December 31, 2022 (€-40 million after tax at December 31, 2021). The impact before tax recognized in the income statement in 2022 amounted to an expense of €17 million (€15 million in 2021).

- The interest rate cash flow hedge for the bond arranged by RIF in May 2021 for a notional amount of €300 million. With this instrument, the Group pays a weighted average interest rate of 0.1930% and receives 3-month Euribor plus 70 bps. At December 31, the instrument's fair value was €7 million. The impact recognized in 2022 in the income statement was, before-tax income, of €2 million (not significant in 2021).

- Cash flow hedges to mitigate the risk of fluctuations in the sale and purchase price of electricity, mainly through sale and purchase agreements, respectively (long-term financial Power Purchase Agreements (PPAs) maturing between 2023 and 2038 at a fixed price). At December 31, 2022, their net notional value was 31 million MWh sold, (equivalent to €-663 million) (11 million MWh sold, equivalent to €298 million in December 2021) and their fair value was.€-317 million (not significant in 2021). The net positive impact before tax recognized in the income statement in 2022 was €209 million (€139 million in December 2021).
- Cash flow hedges to mitigate the risk of fluctuations in the sale and purchase prices of gas and in the sale price of crude oil with maturity between 2023 and 2039 linked to international indexes. At December 31, 2022, its notional amount was -54 TBtu sold (equivalent to €-441 million) and its fair value was €59 million (€-59 million at December 31,2021). The impact before tax recognized in the income statement represented an expense of €388 million (€-27 million in December 2021).

In addition, the Group maintains instruments to hedge its exposure to fluctuations in foreign exchange rates associated with net assets of foreign businesses. 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 $2,598 million (€2,434 million). In 2021, the notional amount was $3,000 million (€2,649 million).

The instruments designated as accounting hedges at December 31, 2022 and 2021 are detailed below:

Hedging instruments	Nominal amounts hedging instruments (2)		Balances of hedging instruments on the balance sheet										Changes in FV of the hedging instrument (3)	
			Non-current assets		Current assets		Non-current liabilities		Current liabilities		Total FV			
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Cash flows:	**(626)**	**(441)**	**18**	**22**	**132**	**319**	**(307)**	**(51)**	**(90)**	**(165)**	**(247)**	**125**	**(355)**	**72**
Interest rate	326	326	4	2	7	—	—		—		11	2	7	18
Product price	(952)	(767)	14	20	125	319	(307)	(51)	(90)	(165)	(258)	123	(362)	54
Fair value:	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**(1)**
Product price	—	—	—	—	—	—	—	—	—	—	—	—	—	(1)
Net investment:	**(2,434)**	**(2,649)**	**—**	**—**	**17**	**—**	**—**	**—**	**(73)**	**(79)**	**(56)**	**(79)**	**23**	**(136)**
Exchange rate	(2,434)	(2,649)	—	—	17	—	—	—	(73)	(79)	(56)	(79)	23	(136)
TOTAL (1)	**(3,060)**	**(3,090)**	**18**	**22**	**149**	**319**	**(307)**	**(51)**	**(163)**	**(244)**	**(303)**	**46**	**(332)**	**(65)**

(1) The fair value valuation methods are described in Note 7.5
(2) Instruments in US dollars translated into euros at year-end rates. In the case of product price derivatives, they correspond to the physical units at the contract price.
(3) In 2022 and 2021, changes in the FV of hedged items generally coincide with those of the hedging instruments, no significant amounts due to ineffectiveness have been recognized

The changes relating to hedging instruments at December 31, 2022 and 2021 recognized under "*Other cumulative comprehensive income"* in the balance sheet are detailed below:

Hedging instruments	Cash flow hedges	Hedges of net investments	Cash flow hedges	Hedges of net investments
€ Million	**2022**		**2021**	
Opening balance at December 31	**51**	**(177)**	**(62)**	**(23)**
Gains/(Losses) for measurement allocated to other comprehensive income	(490)	(227)	173	(221)
Amounts transferred to the income statement (1)	154	44	(40)	12
Translation differences	(1)	—	(2)	—
Share of investments in joint ventures and associates	11	—	—	—
Effective tax	78	57	(18)	55
Minority interests	53	—	—	—
Others	—	49	—	—
Closing balance at December 31	**(144)**	**(254)**	**51**	**(177)**

(1) Includes mainly the allocation to income of cash flow hedges related to the transactions described above.

The cumulative balances by type of hedging instrument at December 31, 2022 and 2021 are:

Accumulated balances of hedging instruments	Cash flow hedging reserve and translation reserves	
€ Million	**2022**	**2021**
Cash flow hedges:	**(144)**	**51**
- Interest rate	(39)	(63)
- Product price	(173)	111
- Tax effect	61	3
Hedges of net investments:	**(254)**	**(177)**
- Exchange rate	(365)	(262)
- Tax effect	111	85

9.2) 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. 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, futures and *swap* contracts are entered into to hedge the product risk associated with future physical transactions for the sale and/or purchase of crude oil and other oil products.

The breakdown of these derivative instruments is as follows:

Other derivative instruments	Non-current assets		Current assets		Non-current liabilities		Current liabilities		Total fair value	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Exchange rate	—	—	159	149	—	(76)	(239)	(36)	(80)	36
Interest rate	—	—	—	—	—	—	(4)	—	(4)	—
Product price	59	114	372	708	(332)	(128)	(629)	(706)	(530)	(12)
Derivatives on treasury shares	—	89	314	3	—	(3)	—	(5)	314	84
TOTAL	**59**	**203**	**845**	**860**	**(332)**	**(207)**	**(872)**	**(747)**	**(300)**	**109**

The breakdown, by maturity, of these derivatives at December 31, 2022 and 2021 is provided below:

Maturity fair values	€ Million											
	2022						**2021**					
	2023	**2024**	**2025**	**2026**	**years**	**Total**	**2022**	**2023**	**2024**	**2025**	**years**	**Total**
Exchange and interest rate	**(84)**	—	—	—	—	**(84)**	**36**	—	—	—	—	**36**
Product price:	**(291)**	**(120)**	**(117)**	—	**(2)**	**(530)**	**100**	**(115)**	**3**	—	—	**(12)**
Purchase futures [(1)]	126	22	1	—	—	149	834	94	12	—	—	940
Sale futures [(2)]	(256)	(28)	(3)	—	—	(287)	(882)	(197)	(10)	(1)	—	(1,090)
Options	2	—	—	—	—	2	3	1	—	—	—	4
Swaps	7	(3)	2	1	—	7	195	(9)	—	—	—	186
Others	(170)	(111)	(117)	(1)	(2)	(401)	(50)	(4)	1	1	—	(52)
Derivatives on treasury shares	**314**	—	—	—	—	**314**	**(2)**	**87**	—	—	—	**85**
TOTAL	**(61)**	**(120)**	**(117)**	—	**(2)**	**(300)**	**134**	**(28)**	**3**	—	—	**109**

[(1)] The physical units and fair value of product and other price derivatives associated with purchase agreements are broken down below:

Purchase futures	Physical units	FV (€ Million)	Physical units	FV (€ Million)
	2022		**2021**	
EUAs CO2 (Thousand tons)	14,656	42	4,773	58
Crude oil (Thousand barrels)	13,671	57	41,148	316
Gas (TBTU)	203	18	1	—
Electricity (MWh)	862	22	3,736	480
Products	n.a	10	n.a	86
Total		**149**		**940**

[2] The following is a breakdown of the physical units and the fair value of the product price derivatives associated with sales contracts:

Sale futures	Physical units	FV (€ Million)	Physical units	FV (€ Million)
	2022		**2021**	
EUAs CO_2 (Thousand tons)	14,585	(52)	1,763	(57)
Crude oil (Thousand barrels)	15,644	(149)	43,794	(364)
Gas (TBTU)	396	(10)	48	(1)
Electricity (MWh)	1,126	(58)	4,521	(580)
Products	n.a.	(18)	n.a.	(88)
Total		**(287)**		**(1,090)**

In 2022 and 2021, the negative impact of the valuation of product derivatives and CO_2 prices on "*Operating income*" was €1,090 and €311 million respectively.

In 2022 and 2021, short-term *forward contracts and currency swaps* were arranged that generated a positive financial gain of €603 and €490 million, respectively, recognized under "*Change in fair value of financial instruments*" in the financial result (see Note 21).

Derivatives on treasury shares

At December 31, 2022, the Group had options contracts on Repsol shares for a total volume of 75 million shares, (50 million for the acquisition of purchase options at an exercise price of €8,26 per share and 25 million from the sale of put options at an exercise price of €5.78 per share). These options (known jointly as "*Reverse collar*") are valued at fair value with changes under the "*Change in fair value of financial instruments*" heading of the income statement. In 2022, they had an impact of €228 million. Their maturity begins on January 16, 2023 and ends on February 17, 2023, at a rate of 2 million shares per day for the *call* tranche and 1 million shares per day for the *put* tranche. The *call* tranche can be settled by physical delivery or by differences, at Repsol's decision, and the *put* tranche can only be settled by differences.

In 2022, *equity swaps* arranged in 2021 on a volume of 25 million shares were settled early, at an average exercise price of €10.50 per share and originally due to mature in July and August 2022. Additionally, *equity swaps* were arranged and canceled on a total of 11 million shares at an average exercise price of €14.44 per share and with contractual maturity. Repsol has the option to settle them by physical delivery or by differences. These instruments are valued at fair value with changes under the "change in fair value of financial instruments" heading of the income statement and the impact for the period was for an amount of €114 million in 2022.

(10) Financial risks

Group business is exposed to different kinds of financial risk, including: market risk, liquidity risk and credit risk and which have been affected to a greater or lesser extent by the international crisis caused by the war in Ukraine and the ensuing market volatility. Repsol has a risk management structure and systems that enable it to identify, measure and mitigate the risks to which the Group is exposed.

10.1) 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 Repsol's 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 profit and equity could be affected (under "*Other comprehensive income*") as a result of the financial instruments held by the Group at the reporting date.

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. The US dollar-euro exchange rate at December 31, 2022 and 2021,with a stronger dollar due to the impact that the war has had on the money markets, was as follows:

Exchange rate €/$	December 31, 2022		December 31, 2021	
	Closing rate	Accumulated average rate	Closing rate	Accumulated average rate
US dollar	1.07	1.05	1.13	1.18

The dollar has appreciated in 2022, mainly as a consequence of the US Federal Reserve tightening its monetary policy to curb inflation in the context of the war in Ukraine. For more information see section 3.1. of the 2022 consolidated Management Report.

Exposure to exchange rate risk can be traced to financial assets and investments, liabilities and monetary flows in currencies other than the functional currency of Repsol, S.A. and to the translation to euros of the financial statements of Group companies with a different functional currency.

Repsol constantly monitors the Group'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, net investment and cash flow hedges are arranged in order to ensure the carrying amount of net investments abroad, 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 9.

The sensitivity of net income and equity to exchange rate risk, as a result of the effect on the financial instruments held by the Group at December 31, due to the appreciation or depreciation of the euro against the dollar, is illustrated below:

Exchange rate sensitivity	Appreciation (+) / depreciation (-) in exchange rate	€ Million	
		2022	2021
Effect on net income after tax	10%	(0.4)	8
	(10)%	0.4	(7)
Effect on equity	10%	(110)	493
	(10)%	90	(404)

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 9).

In the context of the war in Ukraine, the central banks have decided to tighten their monetary policy and therefore raise interest rates in response to rising inflation. Thus, the US Federal Reserve, which began the restrictive cycle in March, raising reference rates from 0% to 0.25%, finally raised rates to 4.25% at the end of the year. The European Central Bank abandoned negative rates in July and ended the year with reference rates at 2.5%. For more information see section 3.1. of the 2022 consolidated Management Report. Additional increases may increase the cost of debt and limit access to capital markets.

At December 31,2022, financing (gross debt) at a fixed rate amounted to 6,814 (€8,162 million in 2021). This amount represents 66% of the gross debt, excluding leases and including interest rate derivative financial instruments (70% in 2021) Variable-rate financial investments account for 95% of the total, and their average remuneration is reported in Note 9.

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:

Interest rate sensitivity	Increase (+) / decrease (-) in interest rates (basis points)	€ Million	
		2022	2021
Effect on net income after tax	50 b.p.	13	19
	-50 b.p.	(12)	(18)
Effect on equity	50 b.p.	1	38
	-50 b.p.	(1)	(39)

In connection with the process of transitioning to new benchmark interest rates currently under way in several jurisdictions worldwide, the Group reviewed the rates of the contracts entered into in accordance with the reform timetable affecting mainly loans and credit facilities. For more information, see Note 29.4.

c) *Commodity price risk*

The Group's results are exposed mainly to volatility in the prices of oil, derivative products, natural gas and electricity, as well as other *commodities* used in its activities.

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 9).

During the year, the price of commodities rose sharply amid the energy crisis and shortage of commodities due to the international sanctions imposed on Russia following the outbreak of the war in Ukraine.

At December 31, 2022 an increase or decrease of 10% in commodity prices would have approximately led to the following changes in net income and in equity as a result of changes in value in the financial derivatives:

Commodities sensitivity	Increase (+) / decrease (-) in commodity prices	€ Million	
		2022	2021
Effect on net income after tax	+10%	(74)	(69)
	(10)%	74	69
Effect on equity	+10%	(136)	(35)
	(10)%	136	35

NOTE: A +/-50% change in commodity prices would have had an estimated impact of €-371 million and €371 million on net income, respectively, and €-680 million and €680 million on equity, respectively.

The sensitivity of the derivatives to increases in commodity prices partially offsets the adverse exposure of Repsol's physical operations -in inventories- inherent to its activity.

For more information on the impact of the current context on the exchange rate, interest rates and *commodity* prices, see section 3 of the 2022 consolidated Management Report.

10.2) Liquidity risk[31]

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, at December 31, 2022 Repsol had cash resources and other liquid financial instruments and undrawn credit facilities that are sufficient to cover current debt maturities 3.8 times.

[31] For information on the definitions of the liquidity and solvency ratios and their reconciliations to the Alternative Performance Measures, see 4.3 of the 2022 consolidated Management Report. For information on the credit rating, see section 4.3 of the 2022 consolidated Management Report and www.repsol.com.

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 credit facilities amounting to €2,674 million and €2,664 million at December 31, 2022 and 2021, respectively.

At the end of the period, liquidity stood at €11,575 million (including undrawn committed credit facilities).

Liquidity	€ Million	
	2022	**2021**
Cash and banks	2,676	2,508
Other cash equivalents	3,836	3,087
Cash and other cash equivalents	**6,512**	**5,595**
Deposits with immediate availability [1]	2,389	2,024
Undrawn credit lines	2,674	2,664
Liquidity	**11,575**	**10,283**

[1] Repsol arranges time deposits with immediate availability, which are recognized under "Other current financial assets" and do not meet the accounting criteria for classification as cash and cash equivalents.

In an international environment heavily affected by the war in Ukraine, and within the framework of the Group's financial policy, Repsol has ensured the ready availability of funds so as to be able to honor its obligations and see its business plans through to completion, guaranteeing at all times the optimum level of liquid resources and seeking absolute efficiency in the management of funds.

The following table contain an analysis on the maturities of the financial liabilities existing at December 31, 2022 and 2021:

Maturity of financial liabilities	Maturities (€ Million)							Maturities (€ Million)						
	2022							**2021**						
	2023	2024	2025	2026	2027	Seq	Total	2022	2023	2024	2025	2026	Seq	Total
Bonds and obligations [1]	1,891	848	1,748	499	747	2,082	7,815	2,050	429	979	1,878	568	3,577	9,481
Loans and other financial debts [1]	819	980	194	65	45	518	2,621	2,574	125	83	289	86	652	3,809
Lease payments [1]	571	459	401	360	339	1,751	3,881	530	476	402	363	326	1,899	3,996
Derivatives [2]	184	—	—	—	—	—	184	(19)	(70)	16	15	13	129	84
Suppliers	5,036	—	—	—	—	—	5,036	5,548	—	—	—	—	—	5,548
Other payables	5,657	—	—	—	—	—	5,657	5,289	—	—	—	—	—	5,289

NOTE: The amounts shown are the contractual undiscounted cash flows and, therefore, they differ from the amounts included on the balance sheet.
[1] Corresponds to future maturities of amounts recognized under "*Non-current financial liabilities*" and "*Current financial liabilities*", including interest 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 9. It does not include trade derivatives recognized under "*Other non-current liabilities*" and "*Other payables*" on the balance sheet.

10.3) Credit risk[32]

Expected Loss[33]

The Group calculates the expected credit loss on its **trade receivables** 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. The general criteria for considering objective evidence of impairment (in the absence of other evidence of default such as bankruptcy, etc.) is that it has exceeded 180 days in default.

The remaining **financial instruments**, mainly certain loans and financial guarantees granted to joint ventures, are individually monitored.

The expected loss on financial instruments is calculated based on the stage of the debtor's credit risk in accordance with the following formula:

Expected credit loss = Probability of default[(1)] x Exposure[(2)] x LDG[(3)]

Phase 1: At the time of initial recognition, expected loss is calculated taking into account the probability of default in the first 12 months (for trade receivables, the calculation is spread over the life of the instrument).

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

Phase 3: For instruments that are already impaired, expected loss is calculated for the entire life of the instrument with effective interest on amortized cost net of the amount of the impairment.

(1) Calculated individually for each debtor except for individuals, for whom an average default rate is used. The models take into account quantitative information (economic-financial variables of the customer, 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) Calculated taking into account the amount of the outstanding receivable and a potential future exposure according to the available risk limit.

(3) Percentage of unrecovered exposure in the event of default, based on the historical behavior and taking into account whether or not such exposure is guaranteed.

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 Company updated its customer management model using economic forecasts for the main countries where it operates, which takes into account various factors including the ongoing war in Ukraine, without this having a significant impact on the Group's financial statements from a change in the payment behavior of debtors.

For credit risk arising from financial instruments relating to operations in Venezuela, see Note 20.3.

The Group's exposure to credit risk, according to the type of financial instrument together with the impairment recognized at December 31, 2022 for each of them, is broken down as follows:

Credit Risk	Gross balance	Average impairment	Impairment	Net balance 12/31/2022	Net balance 12/31/2021
Current financial assets and Cash (1)	9,572	—	(2)	9,570	8,046
Non-current financial assets (2)	3,871	63 %	(2,434) (3)	1,437	1,343
Other current and non-current assets	2,357	53 %	(1,254) (3)	1,103	1,203
Trade and other receivables (4)	9,211	2 %	(184)	9,027	8,238

(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 low-risk 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 15).
(3) Includes assets impaired in Phase III (see "*Expected loss*" in the table above). The impairment losses at December 31,2022 relate mainly to ongoing litigation and bankruptcy proceedings (€1,839 million) and to loans and credit facilities granted to joint ventures in Venezuela (€526 million). Impairments recognized at December 31, 2022 under other current and non-current assets correspond mainly to accounts receivable for the activity in Venezuela (see Notes19.4 and 20.3).
(4) See the following section "*Trade and other receivables*".

[32] 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*".
[33] Expected credit losses are a probability-weighted estimate of losses (ie 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 owed to the entity in accordance with the contract and the cash flows that the entity expects to receive. Since expected credit losses take into account both the amount and timing of payments, there will be a credit loss if the entity expects to collect in full, but later than contractually agreed.

Trade and other receivables

The trade receivables are shown on the balance sheet at December 31, 2022 and 2021, net of provisions for impairment, for an amount of €9,027 million and €8,238 million, respectively. This heading increased mainly due to greater activity in all businesses (higher sales), as a result of higher demand due to fewer restrictions on mobility, and higher prices. The following table shows the age of the trade receivables net of provisions for impairment (including expected loss):

Maturities of Trade and other receivables	2022			2021
€ Million	Debt	Impairment	Balance	Balance
Unmatured debt	8,865	(84)	8,781	8,011
Matured debt 0-30 days	162	(4)	158	144
Matured debt 31-180 days	59	(5)	54	34
Matured debt over 180 days	125	(91)	34	49
TOTAL	**9,211**	**(184)**	**9,027**	**8,238**

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 2.07%.

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 customers in part of their business.

As part of its business activities, the Group has guarantees extended by third parties in an amount of €3,788 million at December 31, 2022 and €3,833 million at December 31, 2021. Of this balance, the trade receivables secured by guarantees stood at €1,169 million at December 31, 2022 and €1,313 million at December 31, 2021.

NON-CURRENT ASSETS AND LIABILITIES

(11) Intangible assets

The breakdown of the intangible assets and of the related accumulated amortization and impairment losses at December 31, 2022 and 2021 is as follows:

Intangible assets	€ Million								
		Upstream			Industrial, and Commercial and Renewables			Corporate	
	Goodwill	Exploration permits	Computer software	Other assets	Gas station association rights and other rights(4)	Computer software	Concessions and others	Computer software and others	Total
GROSS COST									
Balance at January 1, 2021	**3,012**	**2,023**	**215**	**89**	**315**	**545**	**499**	**352**	**7,050**
Investments (1)	—	54	5	200	28	56	26	50	419
Disposals or reductions	(2)	(70)	(3)	—	(14)	(24)	(2)	—	(115)
Translation differences	203	160	18	7	4	6	1	—	399
Change in scope of consolidation	(38)	(5)	—	—	(11)	(4)	23	—	(35)
Reclassifications and other	(14)	12	2	(4)	(10)	31	(148)	—	(131)
Balance at December 31, 2021	**3,161**	**2,174**	**237**	**292**	**312**	**610**	**399**	**402**	**7,587**
Investments (1)	—	34	9	4	22	64	53	69	255
Disposals or reductions	(136)	(40)	(5)	—	(13)	(13)	—	(3)	(210)
Translation differences	146	142	12	21	7	6	3	—	337
Change in scope of consolidation(2)	—	—	—	—	—	(1)	56	—	55
Reclassifications and other(3)	(260)	(616)	15	(199)	4	28	(25)	(8)	(1,061)
Balance at December 31, 2022	**2,911**	**1,694**	**268**	**118**	**332**	**694**	**486**	**460**	**6,963**
ACCUMULATED AMORTIZATION AND IMPAIRMENT LOSSES									
Balance at January 1, 2021	(1,590)	(956)	(147)	(74)	(182)	(262)	(203)	(283)	(3,697)
Amortization	—	(24)	(19)	—	(27)	(66)	(14)	(31)	(181)
Disposals or reductions	—	69	2	—	14	22	2	—	109
(Provision for)/Reversal of provisions for impairment (4)	—	(211)	—	—	—	—	—	—	(211)
Translation differences	(120)	(83)	(13)	(6)	(1)	(3)	(1)	—	(227)
Changes in scope of consolidation	38	5	—	—	9	2	11	—	65
Reclassifications and other	—	10	2	—	12	(39)	67	—	52
Balance at December 31, 2021	**(1,672)**	**(1,190)**	**(175)**	**(80)**	**(175)**	**(346)**	**(138)**	**(314)**	**(4,090)**
Amortization	—	(38)	(19)	—	(29)	(78)	(52)	(8)	(224)
Disposals or reductions	119	40	5	—	12	12	—	—	188
(Provision for)/Reversal of provisions for impairment (4)	(516)	(192)	—	—	—	—	(3)	—	(711)
Translation differences	(71)	(66)	(10)	(5)	(3)	(3)	(1)	—	(159)
Changes in scope of consolidation	—	—	—	—	1	—	—	—	1
Reclassifications and other	—	6	—	—	1	2	(1)	—	8
Balance at December 31, 2022	**(2,140)**	**(1,440)**	**(199)**	**(85)**	**(193)**	**(413)**	**(195)**	**(322)**	**(4,987)**
Net balance at December 31, 2021	**1,489**	**984**	**62**	**212**	**137**	**264**	**261**	**88**	**3,497**
Net balance at December 31, 2022	**771**	**254**	**69**	**33**	**139**	**281**	**291**	**138**	**1,976**

(1) Investments in 2022 and 2021 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 €34 million and €54 million in 2022 and 2021, respectively. In 2021, "*Other non-current assets*" in the upstream segment included the investment in gas assets in production from the US gas company Rockdale Marcellus.

(2) In relation to the acquisitions of Renewable projects (see note 2 at the bottom of the table in Note 12).

(3) In 2022 "*Exploration permits*" reflects the reclassification to "*Investments in areas with reserves*" of the property, plant and equipment of the investment in the exploration assets of Pikka (Alaska) and Leon and Castile (Gulf of Mexico), after the final investment decision, and of the assets acquired in 2021 from Rockdale Marcellus.

(4) For more information, see Note 20. At December 31, 2022 and 2021, cumulative provisions for impairment losses amounted to 2,785 million and €2,136 million, respectively (mainly impairment losses on "*Goodwill*", see the section below).

Repsol has taken out insurance to cover potential security incidents that could occur in its IT system, including computer software, due to malicious acts (cyber-attacks) or accidents that cause the system to be unavailable.

Goodwill

The breakdown of goodwill, by segment and company, at December 31, 2022 and 2021 is as follows:

Goodwill	€ Million **2022**
Upstream :	**401**
Repsol Oil&Gas USA, Llc	133
Repsol Exploración Peru, SA (Suc. Perú)	94
Other companies [(1)]	174
Industrial and Commercial and Renewables [(2)]:	**370**
Repsol Gas Portugal, S.A.	106
Repsol Comercial de Productos Petrolíferos, S.A.	106
Repsol Portuguesa, S.A.	86
Repsol Comercializadora de Electricidad y Gas, S.L.U	49
Other companies	23
TOTAL 2022 [(3)] [(4)]	**771**
TOTAL 2021 [(4)]	**1,489**

(1) Corresponds to a total of 10 CGUs.
(2) Corresponds to a total of 9 CGUs.
(3) Of the total, €402 million and €436 million in 2022 and 2021 correspond to companies carrying out their main activity in Europe.
(4) Includes €2,140 million and €1,672 million in accumulated impairment losses in 2022 and 2021, respectively.

The *Upstream* segment's goodwill comprises primarily goodwill arising from the 2015 acquisition of Talisman Energy Inc (now Repsol O&G Canada Inc, ROGCI). This corresponded mainly to the synergies that were expected to materialize after the acquisition[34] and due to the existence of other intangible assets not recognized in accordance with accounting standards[35]. The existence of these synergies and the relative importance of the benefits (savings) from the ROGCI acquisition for the entire Upstream segment, means that management has been evaluating the recoverability of goodwill at that level.

In 2022, in the context of the agreement to sell 25% of Repsol E&P to EIG (see Note 4.4), the degree to which ROGCI's goodwill is managed and monitored has been reviewed, taking account of the following: (i) the synergies associated with the acquisition have already materialized, (ii) the change in the priorities of the segment[36] have led to divestments in several countries (Malaysia, Vietnam, etc.) and very significant assets in Canada acquired from ROGCI, a reduction in exploratory activity, which affects the value of the seismic library acquired from ROGCI, and significant restructuring of the workforce in various countries associated with ROGCI, and (iii) under the previously mentioned agreement with EIG, the governance and management structure of the business is modified (the Board of Repsol Lux E&P Sàrl, the new company heading the Upstream business) and the way in which the internal monitoring of the recoverability of this goodwill will be carried out at the level of each asset in the segment.

Consequently, the level at which the recoverability of this goodwill is measured has been changed from the Upstream segment level to the level of the cash-generating units that comprise it. A "relative value approach" is used, based on allocating the segment's net book value to the cash-generating units according to the relative weight of the volumes of reserves and resources. As a consequence of the above, the goodwill assigned to the segment at December 31, 2021 for an amount €1,024 million, has been impaired or written off in 2022 for an amount of -724 (includes -260 assigned to CGUs in companies accounted for by the equity method), the balance at closing being €376 million.

Additionally, in the Commercial and Renewables segment, part of the goodwill corresponding to Repsol Portuguesa, S.A. has been impaired. for an amount of €-69 million.

Note 20.2 has additional information on the effect that changes in key assumptions have on the value of assets and goodwill in the segment (including the goodwill allocated to each CGU).

34 They result from savings in corporate functions and support functions, standardization of salary conditions, global finance management, information systems, etc.
35 Fundamentally a large seismic database that could not be reliably valuated and the organized human capital (approximately 3,000 people).
36 The strategic priorities for the Upstream segment in the 2021-2050 Strategic Plan: (i) priority of free cash flow, (ii) resilient value contribution, (iii) focused portfolio (value over volume in <14 countries and reduced and more focused exploration) and (iv) first level in CO2 emissions.

(12) Property, plant and equipment

The breakdown of "*Property, plant and equipment*" and of the related accumulated depreciation and impairment losses at December 31, 2022 and 2021 is as follows:

Property, plant and equipment	€ Million								
	Upstream			**Industrial, and Commercial and Renewables**				**Corporate**	
GROSS COST	Investments in areas with reserves	Investments in exploration	Other property, plant and equipment	Land, buildings and other constructions	Machinery and plant	Other property, plant and equipment	Property, plant and equipment in progress [5]	Land, construction and others	**Total**
Balance at January 1, 2021	**23,645**	**2,067**	**936**	**2,522**	**22,405**	**1,677**	**1,020**	**1,057**	**55,329**
Investments	458	117	65	1	7	11	968	17	1,644
Disposals or reductions	(269)	(11)	(19)	(28)	(238)	(62)	(18)	(17)	(662)
Translation differences	1,877	165	72	31	231	51	4	—	2,431
Change in scope of consolidation	(251)	(1)	(10)	8	(92)	40	—	—	(306)
Reclassifications and other (1)	(1,032)	(24)	(147)	(383)	462	11	(762)	(32)	(1,907)
Balance at December 31, 2021	**24,428**	**2,313**	**897**	**2,151**	**22,775**	**1,728**	**1,212**	**1,025**	**56,529**
Investments	1,587	144	150	—	7	6	1,605	21	3,520
Disposals or reductions	(2,305)	(53)	(9)	(8)	(206)	(69)	(13)	(4)	(2,667)
Translation differences	1,354	140	47	14	180	38	4	—	1,777
Change in scope of consolidation [2]	—	—	—	4	—	(45)	68	—	27
Reclassifications and other [1]	1,250	(591)	14	72	651	353	(584)	1	1,166
Balance at December 31, 2022	**26,314**	**1,953**	**1,099**	**2,233**	**23,407**	**2,011**	**2,292**	**1,043**	**60,352**
ACCUMULATED DEPRECIATION AND IMPAIRMENT LOSSES									
Balance at January 1, 2021	**(15,774)**	**(1,400)**	**(366)**	**(1,322)**	**(13,924)**	**(1,089)**	**—**	**(527)**	**(34,402)**
Depreciation [3]	(677)	(24)	(41)	(58)	(880)	(107)	—	(36)	(1,823)
Disposals or reductions	228	11	13	25	232	76	—	14	599
(Provision for)/Reversal of provisions for impairment [3]	(109)	(34)	(14)	8	51	(34)	—	(23)	(155)
Translation differences	(1,264)	(108)	(27)	(20)	(134)	(24)	—	—	(1,577)
Changes in scope of consolidation	237	1	9	(3)	40	23	—	—	307
Reclassifications and other [1]	1,244	(2)	101	407	439	41	—	18	2,248
Balance at December 31, 2021	**(16,115)**	**(1,556)**	**(325)**	**(963)**	**(14,176)**	**(1,114)**	**—**	**(554)**	**(34,803)**
Depreciation [3]	(903)	(90)	(36)	(60)	(864)	(134)	—	(28)	(2,115)
Disposals or reductions	1,711	53	7	8	198	76	—	2	2,055
(Provision for)/Reversal of provisions for impairment [4]	353	(23)	(6)	—	(2,134)	(1)	—	(3)	(1,814)
Translation differences	(937)	(87)	(17)	(16)	(91)	(19)	—	—	(1,167)
Changes in scope of consolidation	—	—	—	—	—	—	—	—	—
Reclassifications and other [1]	(129)	102	1	(4)	—	(8)	—	—	(38)
Balance at December 31, 2022	**(16,020)**	**(1,601)**	**(376)**	**(1,035)**	**(17,067)**	**(1,200)**	**—**	**(583)**	**(37,882)**
Net balance at December 31, 2021	**8,313**	**757**	**572**	**1,188**	**8,599**	**614**	**1,212**	**471**	**21,726**
Net balance at December 31, 2022	**10,294**	**352**	**723**	**1,198**	**6,340**	**811**	**2,292**	**460**	**22,470**

(1) In 2022, upstream *"Investments in areas with reserves"* includes reclassifications from *"Exploration Permits"* (after the final decision to invest in the exploratory assets in Alaska and in Leon and Castile in the Gulf of Mexico, see section 3,4 of the 2022 consolidated Management Report) and from *"Other fixed assets"* of intangible assets (investment in the gas assets of the American gas company Rockdale Marcellus, see Note 11). In 2022 and 2021, it includes reclassifications of the heading *"Fixed assets in progress"* mainly to *"Machinery and facilities"*, for various improvement, repair and remodeling projects of the Group's refineries, as well as for entry into operation of the Renewable projects (2022 Delta II and Jicarilla-2 and in 2021 Kappa and Valdesolar). In addition, in 2021 this includes reclassifications from "*Investment in areas with reserves*" to "*Non-current assets held for sale*" corresponding to the assets in Malaysia and Ecuador (see Note 16 of the consolidated financial statements).

(2) The classification of acquisitions of Renewable projects as a business or asset largely depends on the phase in which the acquired asset is at the acquisition date. In general, those that have not reached, at least, the *"ready to build"* milestone, which ends the pre-development phase and is prior to the phase of development or construction, are not liable to be classified as a business. Notwithstanding the above, each transaction will require a specific analysis for its classification as a business combination, or as an asset acquisition. In 2022, the acquisition of all renewable projects, taking into account the current phase of each project, has been considered as an asset acquisition. In relation to the valuation and useful life of tangible fixed assets, see the table below in this section.

(3) See the table below in this section for the measurement and useful life of the items of property, plant and equipment.

(4) See Note 20. At December 31, 2022 and 2021, the impairment losses on the assets came to €7,014 million and € 6,103 million, respectively, corresponding mainly to the impairment on "Investments in areas with reserves" (€4,102 million and €5,288 million in 2022 and 2021, respectively) and *"Machinery and plant"* (€2601 million and €450 million in 2022 and 2021, respectively).

(5) Includes, in 2022 and 2021, the fixed assets in progress that correspond to investments in the industrial complexes of the Refining and Chemical businesses, mainly in Spain, and to a lesser extent, in Peru and Portugal, in addition to the investments in wind and solar projects that Repsol is developing in Spain and the USA.

The breakdown, by geographical area, of the Group's most significant investments is detailed in sections 4. and 5.1 of the 2022 consolidated Management Report which is presented using the Group's *reporting* model. "*Property, plant and equipment*" includes investments made by the Group in service concession arrangements in the amount of €231 million and €249 million at December 31, 2022 and 2021, respectively. These concessions revert to the State over a period of time ranging from 2023 to 2084.

As a general rule, non-current assets are depreciated on a straight-line basis over their estimated useful lives. The estimated useful lives of the main assets are detailed below:

Estimated useful life	Years
Buildings and other constructions	14-50
Machinery and plant:	
Machinery, plant and tools	8-25
Specialized complex installations (mainly Refining and Chemical industrial complexes):	
Units	6-25
Storage tanks	14-30
Cabling and networks	12-25
Specialized complex installations (power generation):	18-38
Other property, plant and equipment (transport, furniture and fittings)	4-15

See Note 3.4. for the estimated useful life of the items of property, plant and equipment related to hydrocarbon upstream activities. During the year, the useful lives of certain facilities in the Group's refineries have been reviewed, based on the expected periods for their dismantling. The impact of this review on the Group's financial statements has not been significant. In addition, the estimated useful life for the rest of the Group's industrial and commercial facilities and plants did not have to be changed as a result of the expected impact of the energy transition on the demand for products (see Note 3.5.2).

The figures corresponding to non-depreciable assets, i.e., land and property, plant and equipment in progress, amount to €584 million and €2,292 million at December 31, 2022, respectively, and €581 million and €1,522 million at December 31, 2021, respectively.

"*Property, plant and equipment*" includes fully depreciated items in the amount of €10,453 million and €10,020 million at December 31, 2022 and 2021, respectively.

In accordance with industry practices, Repsol insures its assets and operations worldwide. The risks insured include damage to property, plant and equipment, with the subsequent interruptions in its business that such damage may cause to the majority of operations. 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:

Right-of-use assets € Million	Machinery and plant	Transport elements	Buildings	Land	Other	**Total**
Balance at January 1, 2021	**1,481**	**208**	**116**	**181**	**157**	**2,143**
Acquisitions	163	26	(58)	52	44	227
Disposals and reductions	—	—	(3)	—	—	(3)
Depreciation and impairment	(153)	(63)	(29)	(16)	(29)	(290)
Translation differences and other	(14)	8	16	(16)	18	12
Balance at December 31, 2021	**1,477**	**179**	**42**	**201**	**190**	**2,089**
Acquisitions	97	38	1	50	109	295
Disposals and reductions	(3)		(1)			(4)
Depreciation and impairment	(544)	(76)	(15)	(20)	(74)	(729)
Translation differences and other	53	8	2	5	14	82
Balance at December 31, 2022	**1,080**	**149**	**29**	**236**	**239**	**1,733**

The most significant lease agreements are as follows:

- For the gas stations that the Group has in Spain, Portugal and Peru, lease agreements are signed for various concepts and with varying terms. At December 31, 2022 the corresponding rights of use amounted to €866 million and the future payments recognized as financial liabilities were €909 million.

- 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). The agreement initially came into effect in March 2009. At December 31, 2022 the corresponding rights of use amounted to €206 million[37] and the future payments recognized as financial liabilities were $823 million (€771 million).

- Agreement with Emera Brunswick Pipeline Company, Ltd. for the transportation of natural gas through a pipeline that connects the Saint John LNG plant with the US border for a period of 25 years (renewable for up to an additional 30 years). The lease came into effect in July 2009. At December 31, 2022, the rights of use under this agreement were provisioned (same as 2021) in full and the future payments recognized as financial liabilities amounted to $391 million (€366 million).

(13) Investments accounted for using the equity method

Movement in this heading during 2022 and 2021 was as follows:

Investments accounted for using the equity method	€ Million	
	2022	**2021**
Opening balance for the year	**3,554**	**5,897**
Net investments	74	19
Changes in scope of consolidation	55	145
Net income from investments accounted for using the equity method (1)	989	301
Dividends paid out (2)	(751)	(266)
Translation differences	192	220
Reclassifications and other movements (3)	189	(2,762)
Balance at year end	**4,302**	**3,554**

(1) The increase is mainly due to those businesses whose activity has been favored by the increase in prices during the period. This heading does not include "*Other comprehensive income*" amounting to €197 million in 2022 (€173 million corresponding to joint ventures) and €219 million in 2021 (€205 million corresponding to joint ventures), mainly as a result of translation differences.
(2) In 2022, mainly Repsol Sinopec Brasil(€388 million), Equion Energía Ltd (€205 million), Sierracol (€65 million) and YPFB Andina, S.A. (€46 million) and in 2021 mainly Repsol Sinopec Brasil (€155 million), YPFB Andina (€29 million) and Sierracol Energy Arauca (€29 million).
(3) In 2021corresponds mainly to the allocation of financial assets of Repsol Sinopec Brasil, B.V. to shareholders.

In 2022, the *"Changes in scope of consolidation"* heading mainly includes the acquisition of 11.07% of Enerkem (a leading Canadian company in gasification technology that produces renewable methanol and ethanol from solid urban waste and other materials). In 2021, the acquisition of 40% of Hecate Energy Group LLC, a company that operates in the renewable energy market of the United States, and the sale of the stake in AR Oil & Gaz, B.V., in Russia, stood out.
The breakdown of the investments accounted for using the equity method is as follows:

Details of investments accounted for using the equity method	€ Million	
	Carrying amount of the investment (2)	
	2022	**2021**
Joint ventures	3,916	3,349
Associates (1)	386	205
TOTAL	**4,302**	**3,554**

(1) This mainly includes the interest in Hecate Energy LLC, Enerkem Inc., Salamanca Infrastructure, LLC., OGCI Climate Investments Llp, and Oleoductos de Crudos Pesados (OCP) Ltd.
(2) In 2022, €3,383 million correspond to upstream (€2,737 million in 2021).

On the basis of the shareholders agreements signed at each company, where strategic, operational and financial decisions require the unanimous consent of the parties sharing control, these companies are considered joint ventures provided they are not a joint operation The most significant joint ventures are:

[37] Impaired rights of use for an amount of €341 million at December 31, 2022 (€64 million at December 31, 2021).

Repsol Sinopec Brasil, S.A. (RSB)

Repsol has a 60% stake in Repsol Sinopec Brasil, S.A. (through Repsol Lux E&P S.A.R.L., which is 100% owned by Repsol Upstream B.V., which, in turn, is 100% owned by Repsol, S.A), which has been included in the tables below as RSB. The remaining 40% of this company belongs to Tiptop Luxembourg, S.A.R.L.

This company's main businesses are hydrocarbon exploration, production and sale. It operates in Brazil.

For the guarantees granted by the Group to RSB, see Note 25.

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 mainly in hydrocarbon exploration, operation and sale. It operates mainly in Bolivia.

BPRY Caribbean Ventures, LLC. (BPRY)

Repsol holds a 30% interest in the share capital of BPRY Caribbean Ventures LLC through Repsol Exploración, S.A. The remaining 70% is owned by British Petroleum Ltd. This company and its subsidiaries mainly engage in hydrocarbon exploration, operation and sale, and other related activities in Trinidad and Tobago.

Petroquiriquire, S.A. (PQQ)

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. (CVP) 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 20.3.

Cardón IV, S.A. (Cardón IV)

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 20.3.

Repsol Sinopec Resources UK Ltd. (RSRUK)

A company held by Talisman Colombia Holdco, Ltd, a subsidiary of the Repsol Group, and by Addax Petroleum UK Limited ("Addax"), a subsidiary of the Sinopec group, with a 51% and 49% interest, respectively. The company mainly engages in hydrocarbon exploration and operation in the North Sea.

For information on the arbitration procedure concerning the purchase by Addax of its 49% interest in RSRUK, see Note 15.

The tables below provide a summary of the financial information for main investments, prepared in accordance with EU-IFRS accounting policies,(see Note 3) and its reconciliation with the carrying amount of the investment in the consolidated financial statements[38]:

Income from joint ventures	RSB		YPFB Andina		BPRY		Petroquiriquire		Cardón IV		RSRUK	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Revenue	2,044	1,358	189	148	3,595	1,599	331	206	856	636	1,295	887
Amortization and impairment (1)	(351)	(306)	(248)	(118)	(618)	(841)	(212)	(298)	(183)	(54)	(159)	(496)
Other operating income/ (expenses)	(707)	(468)	(95)	(86)	(1,411)	(791)	81	(53)	(229)	(158)	(339)	(535)
Operating income	**986**	**584**	**(154)**	**(56)**	**1,566**	**(33)**	**200**	**(145)**	**444**	**424**	**797**	**(144)**
Net interest	8	—	—	2	(113)	(77)	(65)	(38)	(38)	(64)	42	8
Financial result	(94)	(65)	(9)	(11)	(32)	(23)	(6)	11	(10)	(22)	(101)	(46)
Net income from investments accounted for using the equity method- net of taxes	—	—	(18)	2	—	—	—	—	—	—	—	—
Net income before tax	**900**	**519**	**(181)**	**(63)**	**1,421**	**(133)**	**129**	**(172)**	**396**	**338**	**738**	**(182)**
Tax expense	(239)	(203)	34	13	(811)	52	(81)	73	(116)	5	(180)	96
Net income attributable to the parent	**661**	**316**	**(147)**	**(50)**	**610**	**(81)**	**48**	**(99)**	**280**	**343**	**558**	**(86)**
Repsol interest	60 %	60 %	48 %	48 %	30 %	30 %	40 %	40 %	50 %	50 %	51 %	51 %
Consolidation income	**397**	**190**	**(71)**	**(24)**	**183**	**(24)**	**19**	**(40)**	**140**	**172**	**285**	**(44)**
Dividends	**388**	**155**	**46**	**29**	—	—	—	—	—	—	—	—
Other comprehensive income (2)	**84**	**105**	**21**	**27**	—	**5**	**(31)**	**(37)**	**(8)**	**(13)**	**36**	**45**

(1) Includes impairment losses on assets at BPRY, YPFB Andina and RSRUK, and due to credit risk, mainly at Cardón IV and PQQ (see Note 20).
(2) Headings "*Valuation gains/(losses)*" and "*Amounts transferred to the income statement*" in the statement of recognized income and expense.

Carrying amount of the stake	RSB		YPFB Andina		BPRY		Petroquiriquire		Cardón IV		RSRUK	
€ Million	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Assets												
Non-current assets	3,701	3,772	575	686	3,106	2,934	207	4	863	636	2,848	3,068
Current assets	909	594	241	268	1,815	650	433	589	174	537	1,765	1,555
Cash and cash equivalents	359	246	39	23	308	110	—	—	9	7	26	65
Other current assets (1)	550	348	202	245	1,507	540	433	589	165	530	1,739	1,490
Total Assets	**4,610**	**4,366**	**816**	**954**	**4,921**	**3,584**	**640**	**593**	**1,037**	**1,173**	**4,613**	**4,623**
Liabilities												
Non-current liabilities	1,808	1,827	264	237	2,787	2,251	986	712	342	652	2,475	2,929
Financial liabilities	900	902	—	—	1,392	1,139	868	706	46	446	145	64
Other non-current liabilities	908	925	264	237	1,395	1,112	118	6	296	206	2,330	2,865
Current liabilities	507	384	72	56	1,017	1,094	906	1,131	379	709	297	539
Financial liabilities	176	166	—	—	414	693	—	52	—	1	13	20
Other current liabilities (1)	331	218	72	56	603	401	906	1,079	379	708	284	519
Total Liabilities	**2,315**	**2,211**	**336**	**293**	**3,804**	**3,345**	**1,892**	**1,843**	**721**	**1,361**	**2,772**	**3,468**
NET ASSETS	**2,295**	**2,155**	**480**	**661**	**1,117**	**239**	**(1,252)**	**(1,250)**	**316**	**(188)**	**1,841**	**1,155**
Repsol interest	60 %	60 %	48 %	48 %	30 %	30 %	40 %	40 %	50 %	50 %	51 %	51 %
Share in net assets (2)	1,377	1,293	230	317	335	72	(501)	(500)	158	(94)	939	589
Goodwill	—	—	—	—	—	—	—	—	—	—	—	—
Carrying amount of the investment	**1,377**	**1,293**	**230**	**317**	**335**	**72**	**(501)**	**(500)**	**158**	**(94)**	**939**	**589**

Note: The amounts itemized in the tables feature the Group's percentage of ownership interest in each of the companies:
(1) With regard to Petroquiriquire, other current assets and liabilities include the offsetting of reciprocal claims and debts with PDVSA under the agreed terms.
(2) Petroquiriquire: in 2022 and 2021 a provision was recognized for contingencies and charges amounting to €501 million and €500 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 (the balance of which, net impairment, at December 31, 2021 amounted to €166 million, and which is considered a net investment (see Note 8.1)).

[38] For significant joint arrangements and associated companies: (i) there are no applicable legal restrictions on the ability to transfer funds to the Group, (ii) the financial statements used refer to the same date as those of Repsol, S.A. and (iii) there are no unrecognized losses.

(14) Other non-current assets and liabilities

In 2022 and 2021, the *"Other non-current assets"* heading mainly included accounts receivable from PDVSA in Venezuela (see Notes 20.3) amounting to €318 million, net of impairment losses (€344 million in 2021) and the deposits associated with the decommissioning of upstream assets (*"sinking funds"*) amounting to €69 million (€59 million in 2021), mainly in Indonesia, and derivative financial instruments associated with non-current trade receivables (see Note 8). In 2022 and 2021, the heading *"Other non-current liabilities"* mainly includes derivative financial instruments related to trade receivables (see Note 7), and guarantees and deposits received for €122 million (€121 million in 2021).

(15) Current and non-current provisions

Repsol makes judgments and estimates that affect the recognition and measurement of provisions for litigation, decommissioning 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.

The calculations to recognize provisions for the cost of decommissioning its hydrocarbon production operations are complex, on account of the need to initially 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 decommissioning 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 used by the Group was 6.3%.

Additionally, Repsol makes judgments 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 applicable technologies.

Therefore, any change in the factors or circumstances related to provisions of this nature, as well as changes in laws and regulations, could therefore have a significant effect on the provisions recognized.

15.1) Provisions

At December 31, 2022 and 2021, the balance of these headings and the changes therein are as follows:

Provisions for current and non-current contingencies and charges

	Million				
	Asset decommissioning [3]	Consumption of CO_2 emission allowances	Legal contingencies	Other provisions [4]	Total
Balance at January 1, 2021	**1,773**	**281**	**891**	**1,367**	**4,312**
Provisions charged to income [1]	85	479	73	247	884
Provisions reversed with a credit to income	(10)	(3)	(10)	(18)	(41)
Cancellation due to payment	(101)	(1)	(43)	(117)	(262)
Changes in scope of consolidation	(17)	—	—	(325)	(342)
Translation differences, reclassifications and other [2]	(21)	(287)	(132)	177	(263)
Balance at December 31, 2021	**1,709**	**469**	**779**	**1,331**	**4,288**
Provisions charged to income [1]	113	1,099	29	468	1,709
Provisions reversed with a credit to income	(28)	—	(25)	(60)	(113)
Cancellation due to payment	(81)	—	(51)	(231)	(363)
Changes in scope of consolidation	—	—	—	—	—
Translation differences, reclassifications and other [2]	26	(477)	47	15	(389)
Balance at December 31, 2022	**1,739**	**1,091**	**779**	**1,523**	**5,132**

(1) In 2022 and 2021, this line item included €66 million and €59 million, respectively, reflecting the discounting to present value of provisions and "*Other provisions*" included the provision corresponding to the use of CO2 allowances for €1,099 million and €479 million, respectively. In 2022 *"Other provisions"* includes the provision for the oil spill that occurred in the Pampilla refinery (see Note 29.1 and 15.2).

(2) In 2022 and 2021, "*Consumption of CO2 allowances*" includes the derecognition of the allowances consumed for emissions in the years 2021 and 2020, respectively, and "*Other provisions*" includes the negative value update of the investments in Petroquiriquire and Cardón IV (see Note 13).

(3) In 2022, includes recognition of decommissioning provisions for refineries in Spain and Peru (see Note 20.1). In 2022, a change in the discount rate of +/- 50 basis points would decrease/increase provisions by €-71 million and €70 million.

(4) "*Other provisions*" includes mainly those recognized to cover obligations arising from environmental clean-up and remediation costs (see Note 29.1), pension commitments (see Note 27), employee incentive schemes (see Note 27), provisions for tax risks not related to income tax (see Note 22), provisions for workforce restructuring and other provisions to cover obligations arising from the Group's interests in companies. The tax provisions related to income tax are presented under "*Deferred tax liabilities and other*" in the balance sheet (see Note 22). in 2021, "Changes in the consolidation perimeter" mainly included removal of the provision for onerous contracts after the acquisition of 25% of Saint John LNG, S.L., once the obligation is extinguished at Group level.

The following table provides an estimate of maturities of provisions at year-end 2022:

Due dates of provisions	Due dates[1] € Million			
	Less than one year	From 1 to 5 years	undetermined	Total
Provisions for field decommissioning	41	317	1,381	1,739
Provisions for consumption of CO_2 emission allowances	1,091	—	—	1,091
Provision for legal and tax contingencies	1	774	4	779
Other provisions	446	377	700	1,523
TOTAL	**1,579**	**1,468**	**2,085**	**5,132**

(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.

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 from past events.

At December 31, 2022, Repsol's balance sheet includes provisions for litigation in the ordinary course of its activities totaling €779 million (€779 million at December 31, 2021). 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 upstream 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 Repsol Sinopec Resources UK Limited "RSRUK"). 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 are upheld in full, they be paid the amount of their initial investment in RSRUK, materialized in 2012 through the purchase of 49% of this from TCHL, a wholly-owned 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, which is estimated to be a total figure of approximately $5,500 million.

The dispute relates to events that 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 asked the Arbitral Tribunal to dismiss the claims of Addax and Sinopec based on contractual guarantees. On August 15, 2017, the Arbitral Tribunal issued a First Partial Award dismissing Addax and Sinopec warranty claims.

The Arbitral Tribunal decided, among other procedural matters, to split the procedure into two phases: the first addressing liability and the second dealing with the amount of any liability found that, where appropriate, would have been determined.

The five main matters in dispute are Reserves, Production, Abandonment, Projects and Maintenance.

In 2018, the oral hearing on matters of liability was held and the conclusions of the parties were presented.

On January 29, 2020, the Arbitral Tribunal issued its second Partial Award on Reserves, determining that ROGCI and TCHL are liable to Sinopec and Addax with regard to this matter. On April 28, 2020, Repsol challenged this second partial award in the Singapore courts, as the case had been transferred to the Singapore International Commercial Court (SICC). A ruling is expected to be handed down on this appeal in the third quarter of 2022.

On April 20, 2021 the Arbitral Tribunal issued a Third Partial Award with regard to the remaining issues pending to be decided in the liability phase, whereby it declared that TCHL and ROGCI were liable for the matter related to Production — which overlaps with what was already decided in the previous award on Reserves — and dismissed the claims of Addax and Sinopec regarding the remaining matters (Abandonment, Projects and Maintenance). On July 19, 2021, ROGCI and TCHL challenged this Third Partial Award before the Singapore courts.

On January 31, 2023, the SICC issued a judgment dismissing the annulment appeals filed against the Second Partial Award and the Third Partial Award.

Following this Award, the arbitration process will continue in its quantification phase, and a decision is not expected to be handed down before the fourth quarter of 2023.

The Third Partial Award has dismissed most of the claims of Addax and Sinopec and allows for a better estimate of the liabilities that could arise from this litigation. Therefore, a new assessment has been carried out of the provision necessary to cover the corresponding risks and, as a result of the analysis performed by the company and its lawyers and external advisors, the provision initially recognized has been reduced. The Company considers that the information above is sufficient in accordance with paragraph 92 of IAS 37 "*Provisions, Contingent Liabilities and Contingent Assets*", as further details on its estimates could harm the development and outcome of the litigation.

In addition, on November 30, 2017 Repsol, S.A. commenced arbitration proceedings against China Petroleum Corporation and TipTop Luxembourg S.A.R.L (Sinopec Group companies) seeking relief from any adverse ruling on the arbitration mentioned above together with other damages yet unquantified. The Tribunal issued an award dismissing Repsol claim. This decision does not have any impact in the risk assessment and the provision of the Addax arbitration.

United States of America

Passaic River/Newark Bay lawsuit

The events underlying this litigation related to the sale by Maxus Energy Corporation ("Maxus"). on September l 4, 1986, 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 the date of the sale. After that (1995), Maxus was acquired by YPF, S.A. ("YPF") 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 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 (declared by the Federal Bankruptcy Court of Delaware, the successor to OCC -its main creditor- as the claimant in the Cross Claim) filed an appeal against the ruling handed down in these proceeding, and that rejected the claim between Maxus and Repsol. 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 December 27, 2021 the New Jersey Appellate Division reversed the decisions of the Trial Court, accepting the appeals of Maxus and OCC. This opinion does not find Repsol liable, but only remands the case to the Trial Court as it considers that a Summary Judgment could not be granted in this stage of the proceeding.

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. In 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.

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.

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 continues to maintain the view that the claims asserted in the Insurance Claim are unfounded. However, the parties reached an agreement for an amount of $25 million.. The settlement agreement was executed on March 25, 2021 and the parties jointly filed with the Court a joint motion to dismiss with prejudice on March 26, 2021, which was granted by the Court on April 9,2021.

Peru

Following the oil spill on January 15, 2022 at the facilities of the La Pampilla Refinery in Peru, which took place as a result of an uncontrolled movement of the ship Mare Doricum during the unloading of crude oil (see Note 29.1): at the end of August, leave to be heard was granted for the civil lawsuit 15.2 for damages filed by the National Institute for the Defense of Competition and the Protection of Intellectual Property of Peru (INDECOPI) against Repsol, S.A., Refinería La Pampilla, S.A.A. (RELAPASAA), Repsol Comercial, S.A.C (RECOSAC), with the Mapfre insurance company and the shipping companies Fratelli d'amico Armatori and Transtotal Marítima , as operators of the ship, requesting compensation of $4,500 million for liabilities in the oil spill at the Refinería de la Pampilla facilities (see Note 30), of which $3,000 million would correspond to direct damages and $1,500 million to moral damages suffered by consumers, users and third parties allegedly affected by the spill.

The civil lawsuit has not yet been notified to Repsol, S.A., Mapfre Spain or the shipowners in Italy as it follows a consular notification that normally takes few months.

Meanwhile, RELAPASAA, RECOSAC and Mapfre Perú have presented their defenses in form and substance in a timely manner, filing appeals for annulment against the order for admission of the lawsuit based on its lack of due cause, failure to rectify the defects in the suit initially indicated by the judge, lack of prior settlement proceedings by INDECOPI and lack of identification of the claimants, as well as improper accumulation of petitions. These three entities have presented their formal defenses, pleading as follows; that INDECOPI does not have the right to demand payment; that transactions exist with a growing number of people affected by the spill, as recorded in the Register prepared by the Peruvian Government; that INDECOPI's representation is defective; that the sued Repsol Group companies and their insurers do not have legal capacity to be made defendants; and that any eventual civil liability resulting from the spillage depends on the result of ongoing investigations. Finally, they have also formalized their substantive defenses regarding non-contractual civil liability based on the lack of foundation for the amounts claimed, among other arguments.

Although the lawsuit filed by INDECOPI may entail a long process, Repsol ratifies its assessment that, according to the criteria of the external lawyers and in view of all the opposing arguments put forward, the Peruvian Courts will finally reject it, and therefore considers it a remote risk.

Also in relation to the spill on January 15, 2022, the Association of Persons Affected by Repsol has filed a lawsuit against RELAPASAA and the insurer Mapfre Perú, claiming 5,134 million soles (around €1,273 million) in favor of 10,268 allegedly affected persons. On November 30, 2022, RELAPASAA was notified of this lawsuit. RELAPASAA has presented the formal and substantive defenses regarding this lawsuit in a timely manner within the corresponding deadlines. To date, the company has filed an appeal for annulment against the order for admission of the lawsuit based on an improper accumulation of claims, as well as formal defenses pleading the lack of acting capacity of the Association on behalf of the supposed affected individuals and lack of proper identification of those individuals. Finally, the company has also formalized its substantive defense regarding non-contractual civil liability based on the lack of foundation for the amounts claimed, among other arguments. In the opinion of RELAPASAA's legal advisors, this contingency is classified as remote.

As a consequence of the spill, different Peruvian regulatory bodies (Environmental Assessment and Control Agency (OEFA), Supervisory Agency for Investment in Energy and Mining (OSINERGMIN), General Directorate of Captaincies and Coast Guard (DICAPI), National Service of Natural Protected Areas by the State (SERNANP), National Forestry and Wildlife Service (SERFOR) have initiated sanctioning administrative procedures against RELAPASAA against which the corresponding defenses have been presented, in addition to meeting the requirements of the authorities mentioned. Most of these administrative sanctioning procedures are in their initial phases and their results, without prejudice to formal issues with an impact on their processing, will depend on the conclusions obtained from the ongoing investigations. However, in some of these pending administrative procedures, a negative result can be expected, and therefore the corresponding provision has been recognized at year-end.

CURRENT ASSETS AND LIABILITIES

(16) Inventories

Inventories are measured at the lower of their cost (calculated based on the weighted average cost) and their net realizable value. "*Commodities*" related to *"trading"* activity are measured at fair value less costs to sell and changes in value are recognized in the income statement.

Emission allowances are recognized as inventory and are initially recognized at acquisition cost. Those allowances free of charge received under the emissions trading system for the 2013-2020 period, are initially recognized as inventory 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 CO_2 are issued, the deferred income is reclassified to profit or loss.

The Group records an expense under *"Other operating expenses"* in the income statement for the CO_2 emissions released during the year, recognizing a provision calculated based on the tons of CO_2 emitted above those emission allowances at zero cost, 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 CO_2 emitted are delivered to the authorities, the inventories and their corresponding provision are derecognized from the balance sheet without any effect on the income statement. When CO_2 emission allowances are actively managed to take advantage of market trading opportunities, the trading allowances portfolio is classified as *"trading"* inventories.

The breakdown of "Inventories" at December 31, 2022 and 2021 is as follows:

Inventories	€ Million	
	2022	**2021**
Crude oil and natural gas	2,120	1,713
Finished and semi-finished products	3,712	2,918
Materials and other inventories [1]	1,461	596
TOTAL [2]	**7,293**	**5,227**

[1] Includes zero-cost CO_2 allowances for a total of €611 million equal to 7,274 thousand tons. (€260 million equivalent to 7,574 thousand tons in 2021).
[2] Includes inventory write-downs of €101 million and €48 million at December 31, 2022 and 2021, respectively. The write-downs recognized and reversed amounted to €-91 million and €39 million, respectively (€-15 million and €7 million in 2021).

At December 31, 2022 the balance of commodities, related to trading activity, amounted to €246 million, and the effect of their measurement at market value represented income of €12 million. The fair value is calculated using 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.

The higher balances under the *"Inventories"* heading are mainly explained by the increase in the average prices of Brent crude (+17% / +11.1 €/bbl) in December 2022 compared to December 2021, and the increase in the volume of operations and in CO_2 inventories.

At December 31, 2022 and 2021 the Repsol Group complied with the legal requirements regarding minimum safety stocks established under prevailing legislation (see Appendix IV) through its Spanish Group companies.

(17) Trade and other receivables

The breakdown of this heading at December 31, 2022 and 2021 is as follows:

Trade and other receivables	€ Million	
	2022	**2021**
Trade receivables for sales and services (gross amount)	6,352	5,972
Impairment	(184)	(186)
Trade receivables for sales and services	**6,168**	**5,786**
Receivables from operating activities and other receivables	617	693
Receivables from operations with staff	50	47
Public administrations	526	215
Trade derivatives (Note 9)	498	1,027
Other receivables	**1,691**	**1,982**
Current tax assets	**1,168**	**470**
Trade and other receivables	**9,027**	**8,238**

This heading has increased mainly because of greater activity in all businesses, most notably in the Refining, Mobility, Lubricants, Aviation, Asphalts and Specialties businesses, with higher sales as restrictions on mobility fell and higher prices for the products, as well as the higher taxes in line with the higher earnings.

(18) Trade and other payables

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

Trade and other payables	€ Million	
	2022	**2021**
Suppliers	**5,036**	**5,548**
Payables and others	4,145	3,783
Payables to public administrations	794	635
Derivative financial instruments (Note 9)	718	871
Other payables	**5,657**	**5,289**
Current tax liabilities	**1,100**	**386**
TOTAL	**11,793**	**11,223**

"*Trade and other payables*" increased due to greater activity (higher volume of purchases).

<u>Information on the average period of payment to suppliers in Spain</u>

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

Average payment period	Days	
	2022	**2021**
Average period of payment to suppliers (PMP) [(1)]	38	30
Ratio of transactions paid [(2)]	38	30
Ratio of transactions payable [(3)]	29	30
	Amount (€ Million)	
Total payments made	21,534	11,733
Total payments made within the legal term [(4)]	18,218	10,706
Total payments outstanding	1,173	460
	Invoices	
Number of invoices within the legal term [(5)]	742,570	642,640

[(1)] PMP = ((Ratio of transactions paid * total payments made) + (Ratio of transactions payable * total payments outstanding)) / (Total payments made + total payments outstanding). In accordance with the transitional provisions of Law 15/2010, the maximum legal payment deadline is 60 days.
[(2)] Σ (Number of days of payment * amount of the transaction paid) / Total payments made.
[(3)] Σ (Number of days outstanding * amount of the transaction payable) / Total payments outstanding.
[(4)] Represents %85 (%91 in 2021) of the total payments to suppliers.
[(5)] Represents %88 (%87 in 2021) of the total of supplier invoices.

INCOME

(19) Operating income

On the same date as these consolidated Financial Statements, Repsol published its 2022 consolidated Management Report, which includes an explanation of performance results and other aggregates.

19.1) Sales and income from services rendered

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.

Most of the Group's business contracts have a single performance obligation that is fulfilled with the delivery of the product, which takes place at a specific point in time. At December 31, there were no relevant performance obligations outstanding with customers.

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

With regard to excise duties (tax on hydrocarbons), this is a single-phase tax and the company assumes the same repercussions as the holder of the tax warehouse (normally "Exolum", formerly named CLH), and Repsol subsequently transfers this cost to its customers as part of the price of the product. In other words, Repsol does not act as a mere collection agent for the Spanish Tax Agency as it is not a tax that can be recovered from the tax authorities (for example, in the event of non-payment by the end customer), but rather a tax for which the Group assumes all the risks (for example, also in the event of the destruction or loss of the product) and rewards, and therefore in essence constitutes a production cost to be recovered, where appropriate, through the sale of the product, with the company being free to set the sales price. This is why Repsol considers the tax on hydrocarbons to be a cost incurred and, symmetrically, as an increase in revenue from sales.

In Upstream, income was mainly generated either from the sale of crude oil, condensates and liquefied natural gas 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 the Industrial segment, 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). With regard to Commercial and Renewables, income is generated mainly from the sale of oil products and other services at service stations and the sale of gas (natural gas and LNG) and electricity.

The distribution of revenue from ordinary activities (headings *"Sales"* and *"Services rendered and other income"*) by segment in 2022 and 2021 is shown below:

Income by segment	**2022**	**2021**
Upstream	6,949	5,009
Industrial	61,416	39,582
Commercial and Renewables	33,895	21,680
Corporate and others	(27,107)	(16,526)
TOTAL	**75,153**	**49,745**

Note: Includes excise duties levied on hydrocarbon consumption amounting to €5,862 million and €5,216 million in 2022 and 2021, respectively.

The breakdown in 2022 of ordinary income by type of product and segment is as follows:

Income by product type	**Upstream**	**Industrial**	**Commercial and Renewables**	**Corporate and others**	**TOTAL**
Crude	2,867	1,945	5	(511)	4,306
Gas [1]	—	—	—	—	—
Wholesale market	4,082	4,543	—	(1,559)	7,066
Retail market (Residential and businesses)	—	—	258	—	258
Oil products [2]	—	51,200	31,091	(24,413)	57,878
Petrochemical products [3]	—	3,303	—	(30)	3,273
Electricity	—	290	2,322	(570)	2,042
Service provision and others [4]	—	135	219	(24)	330
TOTAL	**6,949**	**61,416**	**33,895**	**(27,107)**	**75,153**

[1] Corresponds mainly to condensates and liquefied natural gas and natural gas.
[2] Corresponds mainly to petrol, fuel oil, LPG, asphalt, lubricants, etc.
[3] Corresponds mainly to ethylene, propylene, polyolefins and interim products.
[4] Other services.

The increase in income in 2022 is explained by: (i) the increase in crude oil and gas realization prices in the Upstream productive assets, (ii) the increase in demand for and prices of oil products in Refining, and (iii) in Commercial and Renewables, the increase in sales (higher prices and volumes) and the increase from customer in the retail sale of gas and electricity, in an environment of high prices.

Pursuant to Royal Decree-Law 6/2022 of March 29, adopting urgent measures within the framework of the National Plan to respond to the economic and social consequences of the war in Ukraine, an extraordinary and temporary rebate was approved, which has been in force from April 1 to June 30 (having been subsequently extended until December 31, under the terms of Royal Decree-Law 11/2022 of June 26), on the retail price of certain energy products and additives. The Group has offered discounts of €0.30/liter (which includes the Government rebate of €0.20/liter and an additional discount of €0.10/liter provided by Repsol on all refueling paid through the Waylet app or using the SOLRED card) and of €0.25/liter (Government discount of €0.20/liter and an additional discount of €0.05/liter for other customers). As a result, sales revenue was recorded for both the amount collected from customers and the credit receivable from the tax authorities of €0.20/liter (in accordance with Consultation 4 of BOICAC 129), but reduced to reflect the €0.10/liter or €0.05/liter as an additional discount. These discounts (valid from March 16 to December 31), excluding the rebate – which is neutral in the Group's income statement –, had a negative impact on the results of the Commercial and Renewables segment and, in particular, on those of the Mobility business. During fiscal year 2022 more than €500 million of additional discounts were applied (including prior mentioned) to the sale price of fuels in Spanish Gas Stations (see section 4.1 Results of the 2022 consolidated Management Report).

The distribution, by country, of income from ordinary activities in 2022 and 2021 is shown below:

Geographic distribution of income	**2022**	**2021**
Spain	43,493	24,335
Peru	5,417	2,976
United States	4,304	3,347
Portugal	3,431	2,464
Other	18,508	16,623
TOTAL [(1)(2)]	**75,153**	**49,745**

[(1)] The distribution by geographical area has been drawn up based on the markets to which the sales or income relate and includes special taxes on hydrocarbon consumption.
[(2)] The distribution of the target markets is as follows: (i) EU euro zone: €53,984 million (€32,832 million in 2021), (ii) EU non-euro zone: €241 million (€90 million in 2021) and (iii) Other countries: €20,928 million (€16,823 million in 2021).

19.2) Changes in inventories of finished goods and work in progress

The income recognized under this heading is explained by the rise in prices in the period for finished goods and work in progress at the industrial complexes, and the unsold inventories in the hydrocarbon upstream businesses.

19.3) Procurements

This heading includes the following items:

Procurements	€ Million	
	2022	**2021**
Purchases	57,061	38,502
Changes in inventories (raw materials and goods held for sale)	(883)	(1,054)
TOTAL	**56,178**	**37,448**

The higher costs recognized under "*Procurements*" were mainly due to the higher volume of purchases as a result of increased activity and the increase in the price of raw materials for the industrial complexes.

This heading includes excise duties levied on hydrocarbon consumption mentioned in "*Sales and income from services rendered*" of this Note.

19.4) (Charges for)/Reversal of impairment

These headings include the following items:

Charges for/Reversal of impairment	€ Million	
	2022	**2021**
Impairment charges of assets (Notes 10.3, 17 and 20)	(3,371)	(1,185)
Reversal of impairment (Note 20)	698	522
TOTAL	**(2,673)**	**(663)**

19.5) Personnel expenses

"*Personnel expenses*" includes the following items:

Personnel expenses	€ Million	
	2022	**2021**
Remuneration and other	1,516	1,364
Social security costs	451	438
TOTAL	**1,967**	**1,802**

The increase in this heading is mainly explained by the improvement in the salary conditions of employees.

19.6) Exploration expenses

Hydrocarbon exploration expenses in 2022 and 2021 amounted to €452 million and €367 million, of which €133 million and €53 million are recognized under "*Amortization and depreciation of non-current assets*" and €217 million and €245 million under "*(Charges for)/Reversal of impairment*" in 2022 and 2021, respectively.

The geographical distribution of the costs taken to the income statement in respect of exploration activities is as follows:

Exploration expenses	€ Million	
	2022	**2021**
Europe	34	59
America	227	303
Africa	—	1
Asia	191	4
TOTAL	**452**	**367**

For more information, see Information on oil and gas upstream activities (non-audited information) at www.repsol.com.

19.7) Gains/(losses) on disposal of assets

In 2022 the gains (€122 million) and losses (€-44 million) on the disposal of assets correspond mainly to the sale of assets in Ecuador (blocks 16 and 67), in Malaysia (includes the stake in the PM3 CAA, Kinabalu and PM305/314 blocks) and in Canada (mainly Chauvin in the Upstream segment) (see Note 4.4 and 5.1 of the 2022 consolidated Management Report).

19.8) Transport and freights, supplies and other operating income / expenses

The expenses recognized under "*Transport and freight*" increased as a result of higher prices in the freight market.

The expenses recognized under "*Supplies*" rose as a result of higher gas and electricity prices.

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

Other income/operating expenses	€ Million	
	2022	**2021**
Other operating income [1]	**1,525**	**1,007**
Measurement of trade derivatives [2]	**(1,090)**	**(311)**
Other operating expenses:	**(4,604)**	**(3,664)**
Operator expenses [3]	(722)	(589)
Services of independent professionals	(463)	(434)
Leases [4]	(160)	(113)
Taxes [5]	(513)	(486)
Taxes on production	(263)	(181)
Other	(250)	(305)
Repair and upkeep [6]	(287)	(270)
Use of CO2 allowances [7]	(1,101)	(479)
Others [8]	(1,358)	(1,293)
TOTAL	**(4,169)**	**(2,968)**

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 others, income from the consumption of free CO_2 allowances (see Note 16) and the application of provisions with credit to results (see Note15). This heading includes operating subsidies amounting to 20 million and 15 million in 2022 and 2021 respectively.

(2) Relates mainly to derivatives arranged in trading activities involving crude oil, gas, oil products and electricity (see Note 9)The variation in the "*Measurement of trade derivatives*" is mainly explained by the lower valuation of derivatives and commitments on commodities, mainly in the Wholesale and Trading Gas businesses in North America.

(3) Includes, among other items, the cost of agency services at the facilities of Exolum Corporation, S.A. (formerly Compañía Logística de Hidrocarburos CLH, S.A.), product bottling, storage, loading, transportation and dispatch services.

(4) In 2022, it included expenses for short-term and low-value leases (€119 million) and for variable payments (€41 million).

(5) They correspond to taxes other than income tax (see Note 22). 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, see section 6.6 of the 2022 consolidated Management Report and the Report on Payments to Governments published by the Company.

(6) Relates to repair, upkeep and maintenance activities carried out mainly at the Group's industrial complexes.

(7) "*Use of CO_2 allowances*" rose as a result of greater activity at industrial complexes and the increase in the price of CO_2 allowances (see Note 15).

(8) Includes, among others, the period provisions.

19.9) Research and development

Research expenses incurred are recognized under "*Other operating income/expenses*" as expenses for the year and development expenditure is capitalized only if all the conditions established in the accounting standard of reference are met.

The expense recognized in the income statement in connection with research and development activities was €59 million in 2022 and €57 million in 2021. The capitalized expenses corresponding to development activities amounted to €16 million in 2022.

(20) Asset impairment

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"). 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, a new estimate is given for the recoverable amount of the corresponding asset, and, if applicable, the impairment losses recognized in previous years are 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, up to the limit of the carrying amount that would have been recorded had no impairment loss on the value of the asset been recognized in previous periods.

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 judgments 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 case of the Industrial, and Commercial and Renewables segments, the CGUs correspond to activities (mainly Refining, Chemicals, Wholesale and Trading Gas, Gas Stations, Direct Sales, LPG, Lubricants, Asphalts and Specialized Products, Low-carbon Electricity Generation and Marketing of Electricity and Gas) and geographical areas. In 2022 there were no significant changes in the composition of the CGUs.

Goodwill acquired on a business combination is allocated among the CGUs or groups of 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 to sell 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. For specific information on the methodology for calculating the recoverable amount, see Note 3.5.1.

20.1) 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 its strategy. The main assumptions used are described below:

a) Future price paths:

In 2022, the war resulting from the Russian invasion of Ukraine (see Note 4.4 and 20.3), led to important changes both in public energy policies and in the dynamics of the crude oil and oil product markets, not only in the short term but also for medium and long-term forecasts. In this new context, the Group has revised its forecasts for crude oil, gas, as well as electricity prices. The new estimates have been made in a highly uncertain environment, marked by the evolution of the war, recovery from the COVID-19 crisis, the dynamics of energy transition and decarbonization of the economy and, ultimately, by their possible impacts on the *Oil & Gas* markets.

- The price path of the Brent barrel is revised upward until 2027 due to the increase in prices observed throughout 2022, linked both to the economic recovery, increased future demand and lower levels of investment, as well as due to the invasion of Ukraine. After this, the price path assumes reductions in demand due to energy transition and decarbonization policies, taking into account that oil, unlike gas, is not considered a "transitory" fuel for decarbonization.

- The HH path for gas is revised upward along the entire curve. In the short term, the sanctions imposed on Russia have particularly affected the natural gas market in Europe. The price has risen to attract the gas no longer supplied by Russia and that will probably continue not be imported from Russia in the coming years if the sanctions are maintained or increased. This European demand will also lead to higher prices than in the past for gas from the United States and Asia, given the greater European demand for LNG. In the long run, the energy transition will play a fundamental role in gas dynamics. Natural gas being seen as a transition fuel in decarbonization processes should lead to more investment and production compared to oil, particularly in the United States. The contribution to the electricity mix will continue to be high, which ensures the maintenance of a higher average price than that considered in previous years.

– In the case of electricity in Spain (electricity pool), the path has been modified upward throughout the period to take into account the higher gas and CO2 prices, and the effects of the upward cycle of raw materials.

The assumptions for the main price references are:

Real terms[1] 2022	2023-2050 [2]	2023	2024	2025	2026	2027	2028-2050 [3]
Brent ($/ barrel) [4]	67	81	80	77	74	71	65
WTI ($/ barrel)	65	77	76	73	70	67	63
HH ($/ Mbtu) [4]	3.2	3.9	3.6	3.5	3.6	3.6	3.1
Electricity pool (€/MWh)	66	156	155	130	92	77	54

[1] To carry out the real terms conversion, an inflation rate of 2% is used, which corresponds to the medium-term inflation target of the monetary policy established by the European Central Bank
[2] Average prices for the 2023-2050 period.
[3] Average prices for the 2028-2050 period.
[4] For the purpose of preparing the 2021-2025 Strategic Plan published in November 2020, constant Brent and Henry Hub prices of $50/barrel and $2.5/ Mbtu, respectively, were used to demonstrate the Company's ability to meet its intended investment and shareholder remuneration even in acidic scenarios, which do not necessarily coincide with the Company's view of future crude oil and gas prices, which are those considered when testing for impairment, as explained in Note 3.5.1.

With regard to CO2 prices, the most significant for the Group are those of the current EU ETS mechanism (see Note 29.1). For these purposes, the price of emission allowances, in nominal terms, is estimated for the 2023-2027 period to be $73.5/Tn, $ 74/Tn, 76.7/Tn, $ 79.4/Tn and 83.2/Tn, respectively ($102.1/Tn for the 2023-2050 period and $107.4/Tn for the 2028-2050 period).In 2022, the Group made very slight changes to CO2 prices, mainly related to the exchange rate.

These assumptions consider the implementation of the public policies and commitments aimed at boosting the pace of the decarbonization of the economy to achieve the climate change objectives of the Paris Summit Agreement and sustainability goals of the UN. They represent a commitment to the decarbonization of the economy and, therefore, assume the restriction on the use of fossil fuels and the development of new alternative technologies that drive the energy transition; this 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 has already begun see Note 3.5.2.

b) Discount rates:

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 business. 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 risk. For more information, see Note 3.5.1.

Discount rates	2022	2021
UPSTREAM [1]		
Latin America[2]	8.4% - 37.6%	7.1% - 37.6%
Europe and North Africa [2]	8.1% - 16.9%	6.9% - 13.7%
North America	8.5% - 9.1%	7.4% - 7.6%
Asia and Russia[3]	9.6 %	7.4% - 8.6%
INDUSTRIAL [4]	6.8% - 10.7%	5.0% - 9.2%
COMMERCIAL AND RENEWABLES [4]	6.7% - 10.4%	5.0% - 8.6%

[1] Discount rates in US dollars.
[2] In Latin America the high range corresponds to Venezuela and in North Africa corresponds to Libya.
[3] In 2022, includes Indonesia. In 2021, included Russia.
[4] Discount rates in euros and dollars.

The recoverable value of assets, calculated using the weighted average cost of capital employed after tax in the table above, does not differ from that calculated with pre-tax rates, which (excluding outliers in some countries and businesses) would be 17% for Upstream, 13% for Industrial and 12% for Commercial and Renewables.

c) Impairment recognized

In 2022 impairment losses were recognized for the Group's assets in these balance sheet headings:

Write-down on assets

€ Million	Notes	Total
Intangible assets [(1)]	11	(638)
Property, plant and equipment [(1)]	12	(1,784)
Investments accounted for using the equity method [(2)]	13	(176)
Deferred tax assets	22	185

(1) Does not include impairment losses on unsuccessful exploratory investments recognized in the normal course of operations (see Note 19.6) amounting to €-71 million (recognized under "*Other intangible assets*")and €-18 million (recognized under "*Property, plant and equipment - Investments in exploration*").
(2) Before tax. Additionally, tax credits in the United Kingdom have been recognized for an amount of €286 million.

Provisions, net of reversals, amounted to €-2,598 million before tax (€-1,755 million after tax)[39]. The main CGUs subject to provisions or impairment reversals are:

- Refineries in Spain: an impairment of €-1,479 million before tax was recognized.

  In the short term, the war and the sanctions imposed on Russia have caused disruptions in supply chains, making raw materials more expensive and reducing the supply of products, which has driven the general rise in prices and the strengthening of Industrial margins. However, in its longer-term projection, the new dynamics resulting from the conflict seem to point to an acceleration of the energy transition in Europe and to other public policies that may reduce the competitiveness of the traditional refining industry in Spain. Note should be taken of the new Repower EU roadmap for decarbonization, the bringing forward of the ban on the combustion engine and the broadening of tax measures that increase the tax on the consumption of fossil fuels or on European refining company profits (particularly the new temporary energy levy approved in Spain). Additionally, the restructuring of the supply chains in the markets for crude oil and derivative products, especially in the supply of heavy crude oil, could affect the supply alternatives for refineries. All of this is reflected in a fall in the forecasts for future use and profitability of some traditional units and facilities in our refining industrial complexes, which, in line with what has already been established in Repsol's strategic plan, must undergo a profound transformation to guarantee their sustainability.

  With this perspective, at the end of 2022, the forecasts for activity, use and profitability of some refining units have been revised downward. The decommissioning obligations associated with production units that are not expected to be reconverted have been consistently reassessed, in accordance with the best estimate of the cost at the corresponding settlement dates. The higher cash outflows as a result of the new taxes in Spain and Europe have also been taken into account.

  Finally, as a result of the global increase in risk and interest rates, there has been an increase in the WACC rate (8.4%, from 7.0% in 2021) that we use to discount future cash flows and that we expect to obtain from operating asset. This has also negatively affected the valuation of our Refining business.

- La Pampilla refinery (Peru): an impairment of €-221 million before tax was recognized.

  In Peru, wholesale margins have been revised downward, bringing them in line with those expected in an international context of high prices, a complex political-social environment and greater competition from all operators, including importers from the Gulf of Mexico. For the reasons already indicated, there is an increase in the WACC discount rate (to 10%, from 8.1% in 2021).

- North American Wholesale and Gas Trading assets: an impairment of -€278 million has been recognized as a result of the expected evolution of gas margins due to worse price differentials and lower volumes. Additionally, the WACC discount rate has increased (to 6.8%, from 5.3% in 2021).

- Chemicals business assets (impairments amounting to €-90 million before tax) in Spain, affected not only by the deterioration of the situation in international markets. affecting margins and demand for products, and by the increase in taxation in Spain and discount rates.

[39] In 2021 provisions, net of reversals, amounted to €-864 million before tax (€-672 million after tax).

– Mobility business assets (impairments amounting to €-141 million before tax) in Mexico, affected by the situation in the international commodity markets and the evolution of the local political and regulatory environment, and in Portugal, affected by the drop in future volumes in the new demand scenarios.

– In the Upstream segment, net impairments amounting to €-389 million before tax are recognized. Despite the improvement in crude oil and gas prices, impairments for the year are mainly explained by the allocation of ROGCI's goodwill (see Note 11) to productive assets, so increasing their book value, and the impairment of exploratory and development assets (€-138 million before tax, mostly in Southeast Asia due to new productivity forecasts and delays in development plans), mainly explain the net impairment of the year.

The recoverable value of the impaired assets comes to roughly €7,510 million.

20.2) Sensitivities

The changes in estimated future prices or discount rates used would affect the amount of the impairment of the Repsol Group assets. The main sensitivities to these variations without taking into account the rebalancing of other related variables or the possible adjustments of the operational plans, which would allow the negative impact of the above-mentioned variations to be mitigated, are indicated in the table below:

Sensitivity of main assumptions			€ Million
	Increase (+) / decrease (-)	Operating income	Net income [1]
Change in hydrocarbons prices	20%	2,000	2,346
	10%	999	1,180
	(10)%	(1,398)	(1,319)
	(20)%	(3,313)	(3,130)
Change in hydrocarbons production	10%	860	1,108
	(10)%	(1,262)	(1,317)
Change in hydrocarbons prices (+/-20%) and production (+/-10%)	+	2,488	3,107
	-	(5,169)	(5,033)
Changes in the margins of Industrial, and Commercial and Renewables	10%	1,295	981
	(10)%	(2,000)	(1,528)
Change in discount rate	+100 b.p.	(952)	(749)
	-100 b.p.	883	690

[1] Includes impact on investments accounted for using the equity method.

In response to requests from information users, reported below is the additional impact that would result from using in the impairment test the hydrocarbon price paths of the International Energy Agency's Net Zero Emissions (NZE) 1.5°C scenario, published in the *World Energy Outlook 2022*[40] report, which would imply additional impairments of around €6,600 million after tax.

20.3) Geopolitical risks

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, among others, the Repsol Group is exposed to a particular geopolitical risk mainly in Venezuela, Bolivia, Libya and Algeria.

[40] These paths consider prices in real terms of $35/bbl in 2030 and $24/bbl in 2050 for crude oil and $1.9/MBtu and 1.8 MBtu, respectively, for gas in North America. The NZE is one of many possible scenario that can be projected to limit the temperature increase to 1.5°C. In fact, the Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC), published in 2022, includes more than 200 scenarios consistent with a temperature increase limited to 1.5°C in 2100, of which 28 reach emissions neutrality in 2050 and the rest do so later.

Russia's invasion of Ukraine

Following Russia's invasion of Ukraine on February 24, 2022, economies around the world, including the United States, the European Union and the United Kingdom, announced the imposition of trade sanctions targeting Russian individuals, companies and institutions. These sanctions, and the counter-sanctions imposed by Russia, have triggered a significant reduction in commercial operations between Russia and these economies. This has led to an increase in the raw material prices in world markets for oil, natural gas and wheat, among other products, and has exacerbated inflationary pressures, bottlenecks in the supply chain, and volatility in financial and raw material markets.

The European Central Bank (ECB) has raised its inflation forecasts and cut its growth outlook as the conflict is likely to keep raw material prices high, weakening household purchasing power and the investment capacity of companies. In response to rising inflation, the ECB also decided to modify its monetary policy, reducing its bond-buying program and raising interest rates. Lower business and consumer confidence and activity, and energy-led inflationary pressure, have all led to a slowdown in the global economy, which is still recovering from the effects of the COVID-19 pandemic.

Despite the fact that, having divested of all its assets in Russia in 2021, the Group has neither equity exposure nor a significant commercial position in these countries, Repsol is exposed to indirect risks from the new macroeconomic scenario marked by the war.

- Regulatory changes that affect Repsol's activities, such as the energy market regulations and intervention measures approved by the Government of Spain in response to the economic and social consequences of the war in Ukraine (see Appendix III);
- The new dynamics resulting from the conflict seem to point to an acceleration of the energy transition in Europe and to other public policies that may reduce the competitiveness of the traditional refining industry in Spain and so reduce the value of our assets (see Note 20).
- The increase in fiscal pressure on the energy sector. Of particular note are the *"windfall taxes"* established in the United Kingdom and the new taxes in Spain (the Temporary Energy Tax - see Note 22 - and the public equity benefit established in Spain, which obliged a 5 cents discount per liter to be borne up to December 31, 2022 - see Note 19.1).
- A change in the monetary policies of central banks, entailing a significant increase in interest rates (see Note 10) and, therefore, in discount rates (see Note 20).

It is difficult to predict to what extent and for how long into the future the war will have an impact. The lower global demand for crude oil, gas and petroleum products as a result of the reduction in economic activity may negatively affect prices and the levels of production and sales of the businesses; the deterioration of global financial conditions may affect the cost of financing, the available liquidity or the solvency of our customers and partners in joint operations, etc. The evolution of the war and the financial and fiscal policies adopted by governments to mitigate the social and economic impacts of the crisis will influence the scope and duration of both the crisis and the subsequent recovery.

Venezuela

Repsol has a presence in Venezuela through its holdings in and gas licensees (Cardón IV, etc.) and in mixed oil companies (Petroquiriquire and others). The situation of crisis in the country means there is uncertainty regarding business development. However, prospects have improved as a result of the improvement in the political and social situation and a relative decrease in the coercive[41] measures of the United States Government.

Repsol's equity exposure[42] in Venezuela at December 31, 2022 amounted to €411 million, (€298 million at December 31, 2021), which includes mainly the financing granted to its Venezuelan subsidiaries (see Note 8 and 14) and the investment in Cardón IV (see Note 14).

Although there was an improvement in forecasts, the political and economic crisis described in Note 20.3 of the financial statements for 2021 continued in 2022. GDP[43] increased by 6% in 2022 and inflation continued to be very high, reaching 234%[44] in 2022 and 123% is forecast for 2023. Oil production, which has been significantly reduced in recent years, only slightly recovered in 2022 and there was a significant devaluation of the Venezuelan currency (€18.694/Bs compared to

[41] OFAC's issuance of General Licenses 41 and 8K described in the text appears to be linked to progress at the negotiating table between the Venezuelan government and the opposition. Progressive reductions of the coercive measures are expected if these negotiations are successful.
[42] Equity exposure relates to the value on the Group's balance sheet of net consolidated assets exposed to own risks of the countries reported.
[43] Source: International Monetary Fund estimate.
[44] National Price Index of the National Assembly (INPCAN). Since 2016, the Central Bank of Venezuela has not officially published the accumulated inflation data.

€5.211/Bs on December 31, 2021 , SIMECA[45] exchange rate), although this devaluation has not had a significant impact on the Group's financial statements, given that the functional currency of most of its subsidiaries in the country is the US dollar[46] (see Note 13).

In relation to the international sanctions that affect the Venezuelan government and PDVSA and its subsidiaries, the granting of General License 41, issued on November 26, 2022 by the Office of Foreign Assets Control ("OFAC"), by which the Government of the United States of America authorizes Chevron Corporation or its subsidiaries ("Chevron") and the joint ventures in which Chevron participates as a minority partner ("Chevron JVs") to carry out the following activities: (i) production and extraction of oil and derivatives produced by the Chevron JVs, (ii) sale and export, only to the United States, of crude oil and derivatives produced by the Chevron JVs, on the understanding that such crude oil and oil products must first be sold to Chevron and (iii) purchase and import into Venezuela of the goods and/or products necessary to carry out the above activities, including the dilution. The License indicates that it does not authorize Chevron, among others, to pay royalties and taxes to the Government of Venezuela, or to pay dividends to Petróleos de Venezuela, S.A. ("PDVSA"), including payment in kind. The License will be renewed automatically on the first day of each month and will be valid for a period of 6 months.

The General License 8K of the Office of Foreign Assets Control was issued to four US companies in the hydrocarbons sector, allowing them to participate in transactions involving PDVSA that are necessary for the essential maintenance of operations in Venezuela or the winding down of operations in Venezuela of certain entities. License 8K will be valid until May 26, 2023 and entirely replaces License 8J.

Repsol continues to adopt the necessary measures to continue its activity in Venezuela, fully observing the applicable international sanctions regulations, including US policies in relation to Venezuela, and constantly monitors developments in them and, therefore, any effects they may have on its activities. However, if the current situation continues in the long term or if new changes in US policies occur, our activities in Venezuela could be affected.

The Group evaluates the recoverability of its investments, as well as the credit risk on accounts receivable from PDVSA. To evaluate investments in this country, it is necessary to use certain hypotheses and assumptions (such as asset development plans, compliance with signed agreements and the evolution of the environment) that require significant judgments and estimates and that are subject to high uncertainty (see Notes 10 and 13).

Regarding financial instruments, expected loss is calculated considering the cash flow scenarios forecast for the business, weighted by their estimated probability. Three severity scenarios are applied (moderate, significant and serious) with different assumptions and economic impacts on the estimated cash flows. The probability of occurrence of these scenarios is in turn weighted based on historical information on sovereign defaults (Moody´s "Sovereign Default and recovery rates 1983-2021" report) and management expectations. The estimated cash flow scenarios are consistent with those used for the purpose of calculating the recoverable value of the assets. The evaluation of impairment due to credit risk in Venezuela required estimates to be made of the implications and evolution of a highly uncertain environment, which made it advisable to compare with an independent expert to validate the management's judgments.

As a consequence of this, the Group has recognized in 2022 provisions for PDVSA's credit profile and for the difficult business environment in Venezuela, affecting the value of financing instruments and accounts receivable from PDVSA (€-74 million)[47] and the value of investments accounted for using the equity method (€-192 million).

Bolivia

Repsol's equity exposure in Bolivia at December 31, 2022 amounted to €504 million (comprising mainly the value of productive assets – property, plant and equipment and value of the investment by the equity method – at that date).

The Group has carried out hydrocarbon Upstream activities in Bolivia since 1994, participating at December 31, 2022 in 5 contractual areas, in addition to owning a 48.33% stake in the capital of the company YPFB Andina, S.A. The estimated net proven reserves at December 31, 2022 were 57 million barrels of oil equivalent. Around 63% of these correspond to the field in production Margarita-Huacaya, located in the south of Bolivia, in the regions of Tarija and Chuquisaca. Repsol has a 37.5% stake in the project, operating together with Shell (37.5%), and Pan American Energy (25%).

The economic stability of the country has been affected by the financial impact of the fall in the international reserves of the Central Bank of Bolivia, generated mainly by the high international prices of fuels that the State has to import, which are

[45] SIMECA (Exchange Market System)reference exchange rate.
[46] Quiriquire Gas's functional currency is the bolivar (the net book value of the investment is nil, so any effect from the euro conversion is not significant).
[47] Recognized under the headings "*(Charges for)/reversal of impairment provisions*" (credit risk, see Notes 10.3 and 19.4) and "I*mpairment of financial instruments*" (see Note 21), of the income statement.

marketed in the local market at subsidized prices. The drop in these reserves could impact the State's ability to pay obligations, including the Remuneration to the Holder of the Operating Contracts. Additionally, the State has taken measures to oblige companies with a majority state stake to transfer the funds they have abroad to national territory, in order to strengthen national accounts, and has also established changes in the export receipts operation.

Average net production in Bolivia in 2022 was 33.1 thousand barrels of oil equivalent per day (43 thousand barrels of oil equivalent per day during the same period in 2021).

Algeria

Repsol's equity exposure in Algeria at December 31, 2022 amounted to €437 million (comprising mainly property, plant and equipment at that date).

Repsol has two blocks in the production phase in Algeria (*Reggane Nord* and Block 405a – with licenses MLN, EMK and *Ourhoud*), having sold the *Tin Fouyé Tabankort* (TFT II) asset in June 2021.

The net proven reserves at December 31, 2022 were 19.4 million barrels of oil equivalent. Of the net proven reserves, around 83% correspond to the Reggane gas project in production, located in the Algerian Sahara, in the Reggane basin. Repsol has a 29.25% stake in the project, operating jointly with the Algerian state company Sonatrach (40%), the German RWE Dea AG (19.5%) and the Italian Edison (11.25%).

In June 2022, the Algerian Government, through the Association of Banks and Financial Institutions, ordered the country's financial institutions to freeze direct debits in all foreign trade operations of products to and from Spain and broke from the "Friendship, Good Neighbor and Cooperation Treaty" signed between both countries. Up to now, Repsol has carried out its banking and other operations normally.

The average net production in Algeria in 2022 was 12.3 thousand barrels of oil equivalent per day from the Reggane Nord and 405a blocks (19.7 thousand barrels of oil equivalent per day in 2021, which included 6.5 thousands of barrels of oil equivalent per day from the TFT II asset, sold in June 2021)

Libya

Repsol's equity exposure in Libya at December 31, 2022 amounted to €337 million (comprising mainly property, plant and equipment at that date).

Repsol has been present in Libya since the 1970s, when it began exploratory activities in the Sirte Basin. At December 31, 2022, Repsol had mining rights in this country over two contractual areas with upstream activities, located in the Murzuq basin, known as the El Sharara oil field, with net estimated proven reserves at December 31, 2022 of 95.5 million barrels of oil equivalent.

The deep institutional division in Libya between East and West has been revived, sparking a new episode of tension that is transferred to the oil sector. After the failure to hold the presidential elections in December 2021, sponsored by the UN, the parliament of Tobruk (a city in the eastern part of the country) appointed a new government on February 9, 2022. Fathi Bashagha was appointed interim prime minister, replacing Abdul Hamid Mohamed Dbeibé, prime minister since March 2021. Dbeibé rejected the appointment, stating that he will not hand over power without holding elections. So far Fathi Bashagha and his cabinet have not been able to enter Tripoli and remain in the East, due to the support provided by local militias to Dbeibé.

The Libyan Political Dialog Forum (*United Nations Support Mission in Libya – UNSMIL*) ended on June 22, 2022, without having achieved its main objective of the holding of elections. This situation could aggravate the legitimacy crisis and the danger of a new military escalation.

On July 13, 2022, Dbeibé removed members of the leadership of the national oil company NOC, appointing Farhat Omar Bengdara as the new President, as well as a new board of directors. This appointment was not positively received by the Parliament, which does not recognize the Government of National Unity or Dbeibé as Prime Minister.

In 2022, production at the El Sharara field was interrupted 3 times, for a total of 61 days, due to security conditions and circumstances of force majeure. Additionally, the development drilling campaign began and the preparatory work was carried out for the 2023 exploration campaign. Repsol's average net production of crude oil in Libya i 2022 was 28.6 thousand barrels of oil per day (34.2 thousand barrels of oil per day in 2021).

(21) Financial result

The breakdown of financial income and expenses in 2022 and 2021 is as follows:

Financial Result	€ Million 2022	2021
Financial income	157	82
Financial expenses	(238)	(234)
Net interest (1)	**(81)**	**(152)**
By interest rate	129	32
By exchange rate	470	459
Other positions	342	153
Change in fair value of financial instruments (2)	**941**	**644**
Exchange gains/(losses) (3)	**(434)**	**(131)**
Impairment of financial instruments	**49**	**27**
Adjustment for provision discounting	(75)	5
Interim interest	70	77
Interest on leases (4)	(177)	(172)
Gains/(losses) on disposal of financial instruments	—	—
Others	38	(27)
Other financial income and expenses	**(144)**	**(117)**
FINANCIAL RESULT	**331**	**271**

(1) Includes interest income from financial instruments valued at amortized cost in the amount of €157 million (€82 million in 2021). Financial expenses decreased as a result of lower volume and borrowing costs (see Note 7.1).
(2) Includes the results from the valuation and settlement of derivative financial instruments (see Note 9). "*Other provisions*" includes the results from the valuation and settlement of derivatives on treasury shares (see Notes 6.2 and 9).
(3) Includes the exchange gains and losses generated by the valuation and settlement of monetary items in foreign currency. The change compared to 2021 is explained by the varying performance of the dollar exchange rate on financing instruments in both periods.
(4) Corresponds to the financial discounting of lease liabilities.

The financial result is higher than that of 2021. The improved earnings from derivatives on treasury shares (see Note 9) and one-off interest rate and dollar/euro exchange rate positions recognized under the "*Change in fair value of financial instruments*" heading and, to a lesser extent, lower interest on debt, have been offset by the higher negative "*Exchange rate gains/losses.*"

(22) Income tax

The appropriate assessment of the income tax expense is dependent on several factors, including estimates on the timing and realization of tax credits and 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

Deferred tax assets are only recognized when it is considered 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.

Deferred tax assets are reviewed when there are indications that they are not recovered, and in any event once a year, 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) assumptions made to verify the existence or otherwise of sufficient future earnings for tax purposes that might offset the tax losses or apply existing tax credits; (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.

22.1) 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.

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. This Consolidated Tax Group was composed of 95 companies in 2022, 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 Comercial de Productos Petrolíferos, S.A., Repsol Exploración, S.A., Repsol Exploración Murzuq, S.A., Repsol Generación Eléctrica, S.A. and Repsol Renovables, S.L.U.

Accordingly, Petróleos del Norte, S.A. (Petronor) is the company representing Consolidated Tax Group 02/01/B, to which the special regional corporation tax regulations of Vizcaya are applicable. The number of companies comprising the aforementioned Group in 2022 is 8, the most significant of which are as follows: Petronor, Repsol Customer Centric, S.L. and Repsol Industrial Transformation, S.L.

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 2022, 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%.

In December 2021, Law 22/2021, on the General State Budget for 2022, amended the Corporate Income Tax Law, effective as of January 1, 2022, introducing a minimum income tax rate of 15% to the taxable base, which implies an additional limitation on the application of tax credits for Tax Group 6/80 in future years.

In December 2022, Law 38/2022, of December 27, 2022, modified, among others, the Corporation Tax Law, with effect in tax periods beginning January 1, 2023, introducing a temporary limitation of 50% on offsetting losses in consolidated tax groups. The amount of the individual negative tax bases not included in the tax base of the consolidated tax group will be included, in equal parts, in the ten tax periods beginning January 1, 2024.

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 income tax rate in force under applicable local tax regulations. Group companies in some countries are also subject to a tax on their presumed minimum 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 upstream activities in other countries (including Algeria, Indonesia, Libya or Peru).

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 %	Luxembourg	24.94 %
Bolivia	25 %	Mexico	30 %
Brazil	34 %	Norway	78 %
Chile	27 %	Netherlands	25,8%
Canada [(2)]	24,6%	Peru[(6)]	29,5%
Colombia[(3)]	35 %	Portugal	22.5% - 31.5%
United States [(4)]	21 %	United Kingdom[(7)]	40 %
Indonesia	32.5% - 44%	Singapore	17 %
Italy[(5)]	24 %	Trinidad and Tobago	55% - 57.2%
Libya	65 %	Venezuela	34% (Gas) y 50% (oil)

(1) Plus tax on exceptional profits (TPE).
(2) Federal and provincial rate.
(3) After the reform, the rate applicable from 2023 could reach 50%.
(4) Does not include state taxes.
(5) Does not include regional rates.
(6) General rate.
(7) Does not include the *Energy Profit Levy* (25% rate in 2022, and 35% from 2023 to 2028).

In 2022, the main tax reforms approved were the following:

– In the United States, a new tax called the *Corporate Alternative Minimum Tax* (CAMT) was approved, applicable as of 2023, which imposes a 15% tax on the financial statement income adjusted for certain items. It operates as a minimum tax, that is, it is paid whenever the sum of the federal Corporate Tax and the *Base Erosion and Anti-Abuse Tax* (BEAT) is below 15% of the adjusted financial statement income. The amounts paid as CAMT are credited indefinitely against Corporation Tax. Pending publication of the implementing provisions for this new tax.

– In the United Kingdom, an extraordinary tax on profits obtained from oil and gas production (Energy Profit Levy) was approved. It will be in force from May 26, 2022 to March 31, 2028 and the applicable rate will be 25% for the year 2022 and 35% for the years 2023 to 2028. In the Repsol Group, this new tax has an impact on the Joint Venture with Sinopec (an impact of €-169 due to regularization of deferred taxes in Repsol Sinopec Resources UK, Ltd., see Note 13).

– Lastly, in Colombia a tax reform, applicable from 2023, was approved. It implies an increase of 5%, 10% or 15% – depending on the increase in the price of Brent crude – in the nominal rate of Corporate Tax over the average for the previous 10 years. This means that the current nominal rate of 35% could be increased to 50% (an impact of €-29 million due to regularization of deferred taxes).

c) Minimum tax (OECD Pillar II)

In October 2021, 137 countries in the OECD Inclusive Framework reached a political agreement to establish common standards to guarantee minimum tax for multinational groups. This agreement resulted in the publication in December 2021 of the model rules that would regulate a global effective tax rate of 15%.

In December 2022, the 27 Member States of the EU approved a Directive, substantially based on the OECD model rules, which must be transposed into the national legislation of each State before the end of 2023, for its entry into force in the fiscal year 2024. Apart from the EU, its adoption has been announced in other territories where the Group has a significant presence, such as Canada, the United Kingdom and Singapore.

Beyond a significant increase in formal compliance charges, the Repsol group does not expect significant economic impacts from the application of this new regulation, as it is already subject to effective tax rates well above 15% in the main countries where it operates. However, the complexity of the regulation could cause specific cases of double taxation.

d) Levies on extraordinary profits

The European Union has defined in Regulation (EU) 2022/1854, of the Council of October 6, 2022, on an emergency intervention to deal with high energy prices, the general framework of an extraordinary temporary tax on excessive profits obtained by oil and gas companies in 2022 and/or 2023 (called "Temporary Solidarity Contribution"), which must be implemented by the Member States in their respective territories. In Spain, Law 38/2022 of December 27, 2022, introduced into the national legal system a temporary energy levy (the GTE tax) that certain operators in the energy sector must pay on a temporary basis for two years. The tax will be 1.2% of the net turnover from the activity carried out in Spain for the years 2022 and 2023, with certain adjustments.

The (GTE) for transactions carried out in 2022, payable in February and September 2023, is estimated at around €450 million. In accordance with the criterion of the National Securities Market Commission (CNMV), the GTE for transactions carried out in 2022 accrue and must be recognized on January 1, 2023. The CNMV criterion has been applied in these statements, although, in the opinion of the company, this criterion is not consistent with the substantial characteristics of the levy and the financial statements principles. In any event, the impact on the year's results would not be significant, as the GTE payable for the Refining Spain business has already been taken into account as part of this year's impairment test.

Repsol, in accordance with the views of its internal and external advisors, considers that the GTE runs contrary to the Spanish Constitution and European Union law. It will therefore pursue legal action to have the levy annulled and seek reimbursement of any amounts already paid.

22.2) Accrued income tax expense

The table below shows how the accrued income tax expense for accounting purposes in 2022 and 2021 was calculated:

Income tax expense	€ Million	
	2022	**2021**
Current tax on results for the year [1]	(2,349)	(934)
Deferred tax for the year [2]	(364)	(579)
Adjustments from previous years and other regularization[3]	(122)	(288)
Income tax (expense)/income	**(2,835)**	**(1,801)**

[1] Accounting expense for the tax to be paid on earnings obtained in the current tax year.
[2] Accounting expense for temporary differences arising in the year and for application of tax credits from previous years.
[3] Adjustments corresponding to previous years' income tax (including movements of tax provisions and deferred tax assets, regularization of the estimated amount of the previous year's tax, etc.).

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

Reconciliation of income tax expense	€ Million	
	2022	**2021**
Profit before income tax	7,180	4,329
Profit of investments accounted for using the equity method	989	301
Profit before income tax and profit of investments accounted for using the equity method	**6,191**	**4,028**
General nominal income tax rate in Spain	25 %	25 %
Income tax (expense)/income at the general nominal rate in Spain	**(1,547)**	**(1,007)**
Additional income tax (expense)/income due to adjustments to nominal rates other than the general rate in Spain [1]	(855)	(572)
Increased income tax expense from non-deductible expenses [2]	(328)	(37)
Lower income tax expense due to application of mechanisms to avoid double taxation [3]	5	55
Lower income tax expense due to application of tax credits and incentives [4]	30	88
Income tax (expense)/income due to adjustments for deferred taxes [5]	136	(318)
Income tax (expense)/income due to provision/reversion of provisions for income tax risks	(115)	86
Other items [6]	(161)	(96)
Income tax (expense)/income	**(2,835)**	**(1,801)**

[1] Profit taxed abroad or in Spain at rates other than 25% (special hydrocarbons regime, regional regimes, etc.).
[2] Corresponds to accounting provisions and expenses that are not tax deductible.
[3] Includes mechanisms to prevent international and internal double taxation, whether in the form of exemptions, tax relief and tax credits.
[4] Relates mainly to investment incentives in Norway ("Uplift") and in Spain incentives for investment in assets and application of the tonnage regime.
[5] Includes mainly the adjustment to deferred tax assets in Luxembourg (€185 million) after review of its recoverability (see Note 20.1). and regularization of deferred payments after tax reform in Colombia (€-29 million)
[6] Includes mainly tax costs (withholding tax) for distribution of dividends and adjustments/payments for income tax from prior years.

22.3) 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:

Deferred tax	**€ Million**	
	2022	**2021**
Tax losses, tax credits and similar benefits not yet used	2,303	2,756
Amortization differences for tax and accounting purposes	(1,445)	(1,623)
Provisions for field decommissioning	304	404
Staff and other provisions	643	585
Other deferred taxes	221	66
Total deferred tax	**2,026**	**2,188**
Provisions for contingencies related to income tax[1]	(1,463)	(1,332)
Net deferred tax and other taxes	**563**	**856**

[1] The changes in provisions for contingencies related to income tax is as follows: (i) provisions/reversals charged to profit or loss, €-115 million; (ii) reclassifications/payments, €-5 million; and (iii) translation and other differences, €-19 million.

The tax assets recognized corresponding to tax losses and tax credits carryforwards amount to €2,303 million and correspond mainly to:

Country	€ Million	Legal expiry	Estimated recoverability
Spain	1,085	No time limit	In less than 10 years
United States	802	20 years	Mostly in 10 years
Luxembourg	243	No time limit	In less than 10 years
Algeria	126	No time limit	In less than 10 years
Mexico	37	10 years	In less than 10 years
Colombia	8	No time limit	In less than 10 years
Other	2	-	-
Total	**2,303**		

Below is a breakdown of changes in deferred tax:

€ Million	**2022**	**2021**
Opening balance for the year	**2,188**	**3,179**
Income/(expense) in income statement	(340)	(891)
Income/(expense) in equity	102	(14)
Translation differences for balances in foreign currency	79	52
Other items [1]	(3)	(138)
Balance at year end	**2,026**	**2,188**

[1] Relates mainly to deferred taxes of companies reclassified as held for sale.

In 2022, following the review carried out by the Group for the assets impairment test (see Note 20.1), deferred tax assets have been recognized in Luxembourg (€185 million) as a result of the improvement in the cash flows of production assets and the corporate reorganization resulting from the agreement to sell 25% of the Upstream segment (see Note 4.4).

In 2021, the Group reduced deferred tax assets in Canada because their recoverability could not be demonstrated (€175 million) and due to the impact of the implementation of the minimum tax as of 2022, which limits the use of tax credits in deductions for investments (€141 million).

Below is a breakdown of the net deferred tax assets not recognized at 2022 year-end:

Country	€ Million	Legal expiration
Luxembourg	3,021	No time limit
Spain [1]	744	No time limit
Canada	668	20 years
United States	636	20 years/no time limit
Other [2]	52	
Total [3]	**5,121**	

NOTE: €5,697 million corresponds to 2021.

[1] In Spain this does not include deferred tax liabilities associated with taxable temporary differences on investments in subsidiaries, associates and permanent establishments that meet the requirements established in IAS 12 to apply the accounting exception (€94 million and €94 million at the end of 2022 and 2021, respectively).

[2] Corresponds to Algeria (€11 million), the Netherlands (€11 million), Norway (€9 million), Singapore (€8 million), the United Kingdom (€8 million), Colombia (€2 million) and Bolivia (€2 million).

[3] Does not include the amount corresponding to net unrecognized deferred tax assets of companies accounted for using the equity method, which amounted to €1,112 million (United Kingdom €802 million, Venezuela €192 million, Trinidad and Tobago €113 million, Bolivia €3 million and Spain €3 million).

22.4) Government and legal proceedings with tax implications

As established by current legislation, taxes cannot be considered definitively settled until the returns submitted have been inspected by the tax authorities or the statute of limitations applicable in each jurisdiction has elapsed.

When different interpretations of the tax regulations applicable to certain operations arise between Repsol and the tax authorities, the Group acts with the authorities in a transparent and cooperative manner to resolve disputes through the legal formulas available, with the aim of reaching a non-litigious solution. However, both in previous years and this year, there have been administrative and legal proceedings with tax implications contrary to the Group's aims, which have given rise to litigious situations and possibly additional tax liabilities. Repsol considers that its action in these matters has been in accordance with the law and is based on reasonable interpretations of the applicable regulations, and has therefore filed the appropriate appeals in defense of the interests of the Group and its shareholders.

It is difficult to predict the period for resolution of such disputes due to the length of the claims procedure. The Company, based on the advice of internal and external tax experts, considers that the tax debts that could ultimately arise from these actions would not significantly affect the attached financial statements.

The Group's general criterion is to recognize provisions for litigation of a tax nature where it is determined that the risk of losing is probable. The amounts provisioned are calculated in accordance with the best estimate of the amount necessary to settle the corresponding litigation, based, among other things, on an individualized analysis of the facts and legal opinions of its internal and external advisors and taking into account the experience of past events.

The years for which the Group companies have their tax returns open for audit with regard to the main applicable taxes are as follows:

Country	Years	Country	Years
Algeria	2018 - 2022	Luxembourg	2019 - 2022
Bolivia	2015 - 2022	Mexico	2017 - 2022
Brazil	2017 - 2022	Norway	2017 - 2022
Chile	2019 - 2022	Netherlands	2020 - 2022
Canada	2016 - 2022	Peru	2017 - 2022
Colombia	2017 - 2022	Portugal	2019 - 2022
Spain	2017 - 2022	United Kingdom	2017 - 2022
United States	2019 - 2022	Singapore	2017 - 2022
Indonesia	2018 - 2022	Trinidad and Tobago	2016 - 2022
Libya	2014 - 2022	Venezuela	2016 - 2022

Given the uncertainty about the existing tax risks associated with litigation and other tax contingencies materializing, the Group has recognized provisions considered adequate to cover such risks. At December 31, 2022, the Group has recognized €1,463 million corresponding to uncertain tax positions for income tax (€1,332 million at December 31, 2021). Additionally, it has recognized other tax provisions for an amount of €240 million (€215 million at December 31, 2021), 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. (see Note 13) is involved in a lawsuit regarding the deductibility of royalty payments and hydrocarbon shares from the Company's income tax. A judgment has been handed down at first instance, rejecting the company's claim; the lawsuit is currently awaiting a ruling at second instance. The Company believes 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 various tax assessments (IRRF, CIDE and PIS/COFINS)[48] for tax years 2008 to 2013, in connection with payments to foreign companies for charter contracts for exploration platforms and related services used for activities in the blocks.

Repsol Sinopec Brasil, S.A. (RSB, see Note 13) received assessments for the same items and taxes (tax years 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 RSB is the operator.

[48] IRRF: Imposto de Renda Retido na Fonte (Withholding tax), CIDE: Contribuição sobre Intervenção no Domínio Econômico (Contribution on Economic Activities), PIS: Programa de Integração Social (Social Integration Program) and COFINS: Contribuição para o financiamento da seguridade social (Contribution for Social Security Financing).

These lawsuits are currently limited to CIDE and PIS/COFINS and all administrative claims are appealed in administrative or judicial channels (first or second instance), a favorable resolution having been handed down at second administrative instance. The Company considers that its action is in accordance with the Law and conforms to the general practice of the sector.

In 2021 RSB received a proposal to adjust its transfer pricing policy with regard to the methodology for calculating the remuneration for the charter services rendered in 2016 for the drilling and extraction rigs owned by Agri BV and Guara BV. The Company has filed pleadings as it considers that the remuneration calculation methodology applied is correct, obtaining a favorable resolution at first administrative instance. In December 2022, RSB received a document with the same proposal for the year 2017 , which has also been appealed against.

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, Repsol has strengthened cooperative relationships with the CRA, which has allowed it to reach agreements on tax matters. In 2022, the tax authorities closed corporate income tax inspection proceedings for fiscal year 2016 without any significant adjustments made, and initiated inspection proceedings for international transactions carried out over the period 2016 to 2018.

Spain

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

- Financial years 2006 to 2009. In relation to the audit of these years, the matters under dispute relate mainly to (i) transfer pricing, (ii) tax credits for losses incurred on investments abroad, and (iii) tax credits for investment incentives, the majority of them as a result of changes in the criteria maintained by the Administration in previous audits. In relation to the transfer pricing adjustments, the settlements were 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 a mutual agreement with the US and two decisions handed down by the Central Economic Administrative Tribunal; the tax authorities issued new assessments applying the criteria already accepted in subsequent years by the Administration and the taxpayer. In relation to the other matters (tax credits for losses incurred on investments abroad and tax credits for R&D), the Central Economic Administrative Court partially upheld the Company's appeals, and with regard to that not upheld, two appeals for judicial review were filed with the National Court (for 2006 and for 2007-2009). In 2021 the National Court handed down a judgment with regard to the appeal corresponding to 2007-2009, upholding in full that relating to the tax credits for investments (R&D tax incentives), and mostly upholding that relating to the tax credit for losses incurred on investments abroad. With respect to the part of the appeal not upheld, the Company has not filed an appeal with the Supreme Court and the decision therefore acquired force of law. Consequently, more than 90% of that originally demanded by the tax authorities has already been definitively annulled.

- Financial years 2010 to 2013. The audits in relation to these years 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 incurred on business abroad), the administrative decision has been subject to appeal, as the Company considers that it has acted within the law. The Central Economic Administrative Tribunal rejected this claim and an appeal for judicial review was filed with the National Court, which has yet to hand down a decision. Regarding the deductibility of late payment interest, the Supreme Court has already followed case law in the position defended by Repsol.

- 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 derived from foreign investments and interest on late payment. The corresponding claim was filed against the administrative ruling and was partially upheld by the Central Economic-Administrative Court (as regards the deduction of late-payment interest in audit records). Regarding the part of the claim that was rejected, related to the deduction of losses abroad, a contentious-administrative appeal has been filed before the National Court, since the Company considers that its action was in accordance with the Law.

- Financial years 2017 to 2020. In November 2021, the Company was notified that a tax audit would be carried out for these years.

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.

Peru

The Peruvian Tax Authorities (SUNAT) modified the 2014 income tax assessment of RELAPASAA as the transfer prices applied on certain sales and purchases came into question. In 2022, a favorable ruling was received canceling almost the entire amount originally required by SUNAT. The company has appealed the resolution for the part not annulled.

The Supervisory Agency for Investment in Energy and Mining (OSINERGMIN) ordered RELAPASAA to pay the “contribution for regulation of the companies of the hydrocarbon sub-sector” for the sales of aircraft fuel, however, it is the company’s understanding that such sales are not subject to this tax since the use of that product is exempt. An administrative appeal has been filed against this matter.

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.

(23) Earnings per share

The earnings per share at December 31, 2022 and 2021 are detailed below:

Earnings per share (EPS)	**2022**	**2021**
Net income attributed to the parent (€ million)	4,251	2,499
Adjustment to the interest expense on subordinated perpetual bonds (€ million)	(60)	(60)
Weighted average number of shares outstanding (millions of shares)	1,414	1,491
Basic and diluted earnings per share (euros/share)	**2.96**	**1.64**

CASH FLOWS

(24) Cash flows

24.1) Cash flow from operating activities

During 2022 the cash flow from operating activities amounted to €7,832 million compared to €4,677 million in 2021. The increase is mainly due to the increase in income due to higher prices of hydrocarbons and by-products (due to the more favorable economic environment and the impact of the geopolitical crises) and to the greater demand for products (driven by greater activity due to the recovery of mobility); partially offset by higher tax payments and the impact of the higher cost of inventories (due to higher prices and volumes of inventories in industrial and commercial businesses and the purchase of CO_2 allowances).

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

Cash flow from operating activities		€ Million	
	Notes	2022	2021
Net income before tax		**7,180**	**4,329**
Adjusted result:		**4,026**	**2,390**
Amortization of non-current assets	3, 11 and 12	2,339	2,004
Operating provisions and impairment losses	10.3, 12, 13, 15 and 20	3,099	935
Net income from the disposal of assets	19.7	(77)	(10)
Financial result	21	(331)	(271)
Share of results of companies accounted for using the equity method, net of taxes	13	(989)	(301)
Other adjustments (net)		(15)	33
Changes in working capital:		**(1,375)**	**(1,107)**
Increase/Decrease in accounts receivable	17	248	(3,785)
Increase/Decrease in inventories	16	(764)	(1,340)
Increase/Decrease in accounts payable	18	(859)	4,018
Other cash flows from operating activities:		**(1,999)**	**(935)**
Dividends received		753	281
Income tax refunded/(paid) [1]		(2,398)	(920)
Other proceeds from/(payments for) operating activities [2]		(354)	(296)
Cash flows from operating activities		**7,832**	**4,677**

[1] For further information on the Group's tax contribution, see section 6.6 "*Responsible tax policy*" of the 2022 consolidated Management Report and in Appendix V "*Responsible tax policy*".
[2] Includes mainly payments for the application of provisions (see Note 15).

24.2) Cash flows from investing activities

During 2022 the net cash flow from investing activities resulted in a net outflow of €-4,103 million.

"*(Payments for)/proceeds from investments in Group companies and associates*" amounted to €-69 million. This corresponds mainly to the payment for the entry as a shareholder of Enerkem (a leader in the technology of renewable fuels and chemical products), the acquisition of renewable projects in Spain and the United States and receipts from divestments in Malaysia and Russia. For more information, see section 4 and 5 of the 2022 consolidated Management Report.

"*(Payments for)/proceeds from investments in property, plant and equipment, intangible assets and investment property*" amounted to €-3,062million. Their increase with respect to the comparative period, reflects the increase in investments in Upstream – particularly the disbursement for the gas assets in production acquired from Rockdale Marcellus in 2021 and the development of new wells and facilities in the United States (Marcellus, Eagle Ford and the Gulf of Mexico) and progress in the YME strategic project in Norway), and improvements to the refineries and petrochemical plants in the Industrial segment. Additionally, receipts from asset divestments in 2022 (€473 million; mainly assets in Canada) are included..

"*(Payments for)/proceeds from investments in other financial assets*" reflected net disposals of €-1,003 million, which is explained by the placement/settlement of deposits during the period.

24.3) Cash flows from financing activities

In 2022, cash flow from financing activities led to a net payment of €-2,832 million compared to €-529 million in 2021. This is explained by the net amortizations of bond issues and other marketable securities (includes the cancellation of ROGCI bonds) and the early cancellation of Saint-John project finance (see Note 3.5.1), as well as investment in treasury stock (share repurchase programs; see Note 6), higher dividend payments (increase in shareholder remuneration and "*Scrip Dividend*" in January 2021) and cash obtained from the sale of 25% of Repsol Renovables, S.L.U. and 49% of the renewable assets Valdesolar and Kappa (see Note 6.5).

The breakdown of the changes to liabilities linked to financing activities in 2022 is as follows:

Cash flows from financing activities 2022	€ Million					
	2021	**2022**				
			Non-cash changes			
	Opening balance [1]	Cash flows	Exchange rate effect	Changes in FV	Others	Closing balance [1]
Bank borrowings	1,887	(838)	58	—	30	1,137
Bonds and other marketable securities	8,570	(973)	12	—	207	7,816
Derivatives (liabilities)	199	(2,017)	300	1,827	7	316
Loans	1,087	259	116	—	21	1,483
Other financial liabilities	106	(2)	9	—	(113)	—
Lease liabilities	2,948	(613)	122	—	466	2,923
Shareholder remuneration and perpetual bonds	2,739	(1,027)	—	—	1,068	2,780
Treasury shares and own equity instruments	(641)	(1,714)	—	—	2,352	(3)
Changes in investments in companies without loss of control	—	1,155	—	—	(1,155)	—
Total liabilities from financing activities	**16,895**	**(5,770)**	**617**	**1,827**	**2,883**	**16,452**
Derivatives (assets)	(244)	2,557	(41)	(2,867)	95	(500)
Other proceeds from/payments for financing activities	—	381	—	—	(381)	—
Total other assets and liabilities	**(244)**	**2,938**	**(41)**	**(2,867)**	**(286)**	**(500)**
Total	**16,651**	**(2,832)**	**576**	**(1,040)**	**2,597**	**15,952**

[1] Corresponds to the current and non-current balance on the balance sheet.

The breakdown of the changes in liabilities arising from financing activities in 2021 is as follows:

Cash flow from 2021 financing activities	€ Million					
	2020	**2021**				
			Non-cash changes			
	Opening balance [1]	Cash flows	Exchange rate effect	Changes in FV	Other [3]	Closing balance [1]
Bank borrowings	937	588	74	—	288	1,887
Bonds and other marketable securities	7,951	431	29	—	159	8,570
Derivatives (liabilities)	344	(556)	241	161	9	199
Loans [2]	3,680	91	91	—	(2,775)	1,087
Other financial liabilities	99	(7)	4	—	10	106
Lease liabilities	2,991	(537)	156	—	338	2,948
Shareholder remuneration and perpetual bonds	2,039	(285)	—	—	985	2,739
Treasury shares and own equity instruments	(162)	(722)	—	—	243	(641)
Changes in investments in companies without loss of control	**—**	**200**	**—**	**—**	**(200)**	**—**
Total liabilities from financing activities	**17,879**	**(797)**	**595**	**161**	**(943)**	**16,895**
Derivatives (assets)	(240)	653	(17)	(808)	168	(244)
Other proceeds from/payments for financing activities	—	(385)	—	—	385	—
Total other assets and liabilities	**(240)**	**268**	**(17)**	**(808)**	**553**	**(244)**
Total	**17,639**	**(529)**	**578**	**(647)**	**(390)**	**16,651**

[1] Corresponds to the current and non-current balance on the balance sheet.
[2] Includes loans with companies accounted for using the equity method. The variation is mainly explained by the allocation of financial assets of Repsol Sinopec Brasil, B.V. to its shareholders.

Cash and cash equivalents increased by €917 million compared to December 31, 2021, amounting to a total of €6,512 million. Cash and cash equivalents are part of the Group's liquidity (see Note 10).

OTHER DISCLOSURES

(25) Commitments and guarantees

25.1) Contractual commitments

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, using price estimates and other variables that are consistent with those considered for calculating the recoverable amount of the assets (see Notes 3 and 20).

At December 31, 2022, the Group has contractually committed to the following purchases, investment and other expenditures:

€ Million	2023	2024	2025	2026	2027	Subsequent years	Total
Purchase commitments	6,646	2,214	1,969	1,677	1,641	17,818	31,965
Natural gas (1) (2)	2,255	1,802	1,558	1,272	1,238	15,113	23,237
Crude oil and others (2) (3)	4,391	412	411	405	403	2,705	8,726
Investment commitments (4)	1,650	449	136	71	52	16	2,373
Provision of services (5)	343	253	205	166	136	135	1,239
Transport commitments (6)	240	132	112	85	62	305	937
TOTAL	**8,879**	**3,048**	**2,422**	**1,999**	**1,891**	**18,274**	**36,514**

(1) Primarily includes commitments to purchase liquefied natural gas (LNG) in North America (with *"take or pay"* clauses). These contracts are classified for accounting purposes as "own use". Long-term firm commitments for the purchase and sale of gas and crude oil are analyzed to determine whether they correspond to the supply or marketing needs of the Group's normal business activities (own use), or whether, on the contrary, they should be considered a derivative and recognized in accordance with the criteria established in IFRS 9 (see Note 9).
(2) Comprises mainly commitments to purchase products for the operation of the refineries in Spain, and commitments corresponding to crude oil purchase contracts with the Pemex group (maturity 2023), with the Saudi Arabian Oil Company (annual renewal) and with the Repsol Sinopec Brazil Group (maturity 2023).
(3) Committed crude oil and gas volumes are as follows:

Purchase commitments	Unit of measurement	2023	2024	2025	2026	2027	Subsequent years	Total
Crude oil	kbbl	43,242	206	225	214	217	214	44,318
Natural gas								
Natural gas	Tbtu	102	76	39	12	5	5	239
Liquefied natural gas	Tbtu	114	129	166	166	166	2,011	2,752

(3) Comprises mainly investment commitments in the United States, Spain, Portugal, Colombia, Algeria, Chile and Norway amounting to (€661) million, €516 million, €330 million, €288 million, €194 million, €112 million and €111 respectively.
(5) Comprises mainly commitments for future technological developments totaling €566 million and commitments associated with hydrocarbon upstream activities for an amount of €311 million.
(6) Includes, primarily, hydrocarbon transportation commitments in North America and Peru amounting to approximately €834 million.

25.2) Guarantees

In the course of its business activities, Repsol assumes guarantees of various types and content for third parties or companies whose assets, liabilities and earnings are not presented in the consolidated financial statements (joint ventures and associates). 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 likelihood that any non-compliance would give rise to a liability for these commitments to any material extent is remote.

At December 31, 2022, the most significant guarantees for the fulfillment of obligations are:

- For the rental of three floating production platforms for the development of the BMS 9 field in Brazil: (i) a guarantee for $396 million corresponding to 100% of RSB's obligations (see Note 13), for which Repsol holds a counter guarantee from China Petrochemical Corporation in respect of its 40% interest in RSB; and (ii) two additional guarantees of $380 million and $342 million, corresponding to the 60% interest held by the Group in RSB. The guaranteed amounts are reduced annually until 2036, the date on which the contracts are completed.

- For 51% of the guarantees for the decommissioning of RSRUK in the North Sea, for £574 million.

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

Guarantees granted in the ordinary course of business correspond to a limited number of guarantees totaling €133 million. In Venezuela an undetermined guarantee has been granted to Cardón IV to cover the commitment to supply gas to 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.

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

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.

(26) 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. Directors and executives: includes members of the Board of Directors as well as members of the Executive Committee, who are considered "key management personnel" and any persons related thereto for the purpose of this section (see Note 28.4).

b. 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 13).

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

Expenses and revenue *€ Million*	2022 Directors and executives [(1)]	2022 People, companies or entities within the Group	2022 Significant shareholders	2022 Total	2021 Directors and executives [(1)]	2021 companies or entities within the Group	2021 Significant shareholders	2021 Total
Financial expenses	—	31	—	31	—	16	—	16
Leases	—	1	1	2	—	—	2	2
Services received	—	80	4	84	—	55	19	74
Purchase of goods [(2)]	—	2,022	2	2,024	—	1,092	3	1,095
Other expenses [(3)]	—	22	—	22	—	97	—	97
TOTAL EXPENSES	**—**	**2,156**	**7**	**2,163**	**—**	**1,260**	**24**	**1,284**
Financial income	—	98		98	—	67	—	67
Services provided	—	6	—	6	—	4	—	4
Sale of goods [(4)]	—	865	9	874	—	453	16	469
Other revenue	—	122	—	122	—	254	—	254
TOTAL REVENUE	**—**	**1,091**	**9**	**1,100**	**—**	**778**	**16**	**794**

Other transaction *€ Million*	2022 Directors and executives [(1)]	2022 People, companies or entities within the Group	2022 Significant shareholders	2022 Total	2021 Directors and executives [(1)]	2021 companies or entities within the Group	2021 Significant shareholders	2021 Total
Financing agreements: credit and contributions of capital (creditor) [(5)]	—	301	—	301	—	463	—	463
Financing agreements: loans and contributions of capital (borrower)	—	827	—	827	—	338	—	338
Guarantees and sureties given [(6)]	—	546	—	546	—	615	—	615
Guarantees and sureties received	—	3	—	3	—	10	9	19
Commitments assumed [(7)]	—	165	—	165	—	57	2	59
Dividends and other profits distributed [(8)]	1	—	14	15	1	—	65	66
Other operations [(9)]	—	1,482	3	1,485	—	3,738	34	3,772

Closing Balances *€ Million*	2022 Directors and executives [(1)]	2022 People, companies or entities within the Group	2022 Significant shareholders	2022 Total	2021 Directors and executives [(1)]	2021 companies or entities within the Group	2021 Significant shareholders	2021 Total
Customer and trade receivables	—	161	3	164	—	169	2	171
Loans and credits granted	—	1,033	—	1,033	—	845	—	845
Other receivables	—	105	—	105	—	92	—	92
TOTAL RECEIVABLE BALANCES	**—**	**1,299**	**3**	**1,302**	**—**	**1,106**	**2**	**1,108**
Suppliers and trade payables	—	144	2	146	—	238	16	254
Loans and credits received [(10)]	—	1,482	—	1,482	—	1,085	—	1,085
Other payment obligations	—	1	—	1	—	—	—	—
TOTAL PAYABLE BALANCES	**—**	**1,627**	**2**	**1,629**	**—**	**1,323**	**16**	**1,339**

Note: In 2022, the tables for Expenses and Income and Other transactions include transactions with the Sacyr Group up to June.

(1) Includes transactions performed with executives and directors not included in Note 28 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 2022 "*People, companies or entities within the Group*" primarily includes products purchased from Repsol Sinopec Brasil (RSB) and from Repsol Sinopec Resources UK Ltd (RSRUK), for the amount of €1,182 million and €369 million, respectively (€753 million and €127 million in 2021).

(3) Includes mainly supplies and provisions for credit risks of accounts receivable and financial instruments (see Note 10.3 and 20.3).

(4) In 2022 and 2021 *"People, companies or entities of the Group"* includes mainly sales of products to Iberian Lube Base Oil, S.A. (ILBOC) and Dynasol Group for €599 million and €201 million in 2022 and €279 million and €152 million in 2021, respectively.

(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 decommission offshore platforms in the North Sea.

(7) Corresponds to purchase, investment or expense commitments acquired in the period (see Note 25).

(8) In 2022, the amounts recognized as dividends and other income include amounts corresponding to the sale to Repsol, at the guaranteed fixed price, of bonus issue rights as part of the bonus share issue closed in January 2022, as part of the "*Repsol Flexible Dividend*" remuneration program, as well as the cash dividend paid in July (see Note 6.3).

(9) In 2022 and 2021 "*People, companies or entities within the Group*" includes mainly the repayments and/or cancellations of guarantees provided or loans granted to joint ventures in the UK and financing agreements (see the following footnote to the table).

(10) In 2022 includes mainly financial liabilities with Repsol Sinopec Resources UK Ltd (RSRUK) and BPRY Caribbean Ventures, LLC. amounting to €986 million and €335 million (€673 million and €316 million in 2021 in RSRUK and Equion respectively).

(27) Personnel obligations

27.1) Defined contribution pension plans

For certain employees in Spain, Repsol has recognized mixed pension plans in line with the current law. Specifically, these are defined contribution pension plans for the contingency of retirement and defined benefit plans for the contingencies of total or absolute permanent disability, comprehensive disability and death. In the case of total or absolute permanent disability, comprehensive disability and death, the pension plans have taken out insurance policies with an external entity.

The annual cost charged to "*Personnel expenses*" in the income statement in relation to the defined contribution pension plans detailed above amounted to €46 million and €47 million in 2022 and 2021, respectively.

The Group's executives in Spain are beneficiaries of an executive pension plan that complements the standard pension plan known as "*Plan de previsión de Directivos*" (Executive welfare plan), which covers the participant's retirement, their full or total 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 insurance policies underwritten by an insurance company that finances and outsources the commitments in respect of contributions and the fixed return mentioned above.

The cost of this plan recognized under "*Personnel expenses*" in the income statement in 2022 and 2021 amounted to €15 million and €16 million, respectively.

27.2) Defined benefit pension plans

Certain groups of employees have pension plans for the contingencies of full or total permanent disability, comprehensive disability and death, the insurance policies of which are taken out with an external entity. The total amount charged to the Group's income statement in 2022 and 2021 was income of €4 million and expense of €10 million, respectively, while the provisions recognized on the balance sheet at year-end 2022 and 2021 stood at €62 million and €80 million, respectively (see Note 15).

No significant impacts are expected on the Group's financial statements, given the valuation of the provisions recognized for the pension plans as a consequence of the assumptions used (inflation rate, interest and exchange rates, etc.) in the new macroeconomic scenario impacted by Russia's invasion of Ukraine.

27.3) Long-term variable remuneration

A loyalty building plan aimed at executives and other persons occupying positions of responsibility consisting of long-term incentives as part of their benefit package. The purpose of this program is to strengthen the link with shareholders' interests, based on the sustainability of medium and long-term results 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 2019-2022, 2020-2023, 2021-2024 and 2022-2025 plans were in force. The 2018-2021 plan was closed and its beneficiaries received their bonuses in 2022.

The four plans are independent of each other and fulfillment of the objectives tied to each plan allows its beneficiaries to receive an incentive in the first four months of the year following the last year of the plan. However, receipt is tied to the beneficiary remaining in the Group 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.

The 2019-2022 plan do not involve the delivery of shares or options, with the exception of the Chief Executive Officer, who is partially paid in shares. In this regard, the amount of the 2019-2022 Long-Term Incentive will be paid to the Chief Executive Officer in a proportion of 70% in cash and 30% in shares, so that he will receive €809,712 in cash and 10,845 Company shares equal to €160,010.

In accordance with the provisions of the current Directors Remuneration Policy, the final number of shares to be delivered to the Chief Executive Officer is calculated based on: (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 weighted average 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 incentive of each of the Plans for the Chief Executive Officer.

Accordingly, the 2020-2023, 2021-2024 and 2022-2025 plans differ from the previous plans in that beneficiaries are entitled to receive a "cash incentive" and a certain number of "*Performance Shares*", which will entitle them to receive Repsol, S.A. shares at the end of the Plan's vesting period, subject to the performance of certain metrics.

To reflect these commitments assumed, expenses of €25 million and €21 million were recognized in 2022 and 2021, respectively, with the accumulated outstanding payment obligation amounting to €53 million and €49 million at December 31, 2022 and 2021, respectively.

27.4) 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 investments in shares of up to 50% of the gross amount of the Long-term Incentive 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 shares for three years from the initial investment and the remaining conditions of the Plan are met, the Company will give the employee one additional share for every three initially acquired.

In the case of Senior Management, (the Chief Executive Officer and other Executive Committee members), they are subject to an additional performance requirement in order to receive these additional shares, namely overall fulfillment of at least 75% of the targets set in the Long-Term Incentive Plan closed in the year preceding that of delivery of the shares.

The following cycles of this Plan are currently in force:

Plan purchase plan of long-term incentive	No. of shares	Total initial investment (no. of shares)	Average price (Eur/Share)	Maximum commitment for delivery of shares
Tenth cycle (2020-2023) [(1)]	238	340,537	8.4935	113,512
Eleventh cycle (2021-2024) [(2)]	180	200,997	11.0414	66,999
Twelfth cycle (2022-2025) [(3)]	214	134,064	15.1098	44,652

[(1)] Includes 14,743 shares delivered to the Chief Executive Officer as a partial payment of the 2016-2019 Long-Term Incentive Plan. In accordance with the provisions of the Directors Remuneration Policy, the shares 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.
[(2)] Includes 19,337 shares delivered to the Chief Executive Officer as a partial payment for the 2017-2020 Long-Term Incentive Plan.
[(3)] Includes 13,184 shares delivered to the Chief Executive Officer as a partial payment for the 2018-2021 Long-Term Incentive Plan.

During this twelfth cycle, the current members of the Executive Committee, including the Chief Executive Officer, have acquired a total of 48,756 shares.

As a result of this Plan, at December 31, 2022 and 2021, the Group had recognized an expense under "*Personnel expenses*" with a balancing entry under "*Other equity instruments*" in equity of €0.44 million.

In addition, the ninth cycle of the Plan (2019-2022) vested on June 3, 2021. As a result, the rights of 166 beneficiaries vested 60,793 shares (44,653 shares net of payment on account of the personal income tax). Specifically, the rights of the members of the Executive Committee and the Chief Executive Officer to 26,915 shares also vested (18,416 shares net of payment on account).

ii.) "*Share Acquisition Plans*"

The Company has been implementing, on an annual basis, a share acquisition plan aimed at all Group employees in Spain since 2011. These Plans enable those so wishing to receive a portion of their remuneration in shares up to an annual limit of €12,000. The shares to be delivered are valued at the closing share price on the continuous Spanish stock market on each date of delivery.

In 2022 the Group purchased 761,246 shares of Repsol, S.A. (1.032.481 shares in 2021) amounting to €9.8 million (€11 million in 2021) for delivery to employees (see Note 6).

The members of the Executive Committee acquired 7,052 shares in accordance with the plan terms and conditions in 2022.

iii.) "*Global Employee Share Purchase Plan: YOUR REPSOL*"

In 2020 the YOUR REPSOL Plan was launched, which enabled all employees to allocate a certain amount of their remuneration to purchase 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.

Under the YOUR REPSOL Plan for 2020, the members of the Executive Committee acquired a total of 1,232 shares which, in accordance with the terms and conditions of the Plan, will entitle them to receive a total of 616 shares in February 2023.

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.

(28) Remuneration of the members of the Board of Directors and key management personnel

28.1) 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 Directors 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 Directors Remuneration Policy approved at the Annual General Meeting held on March 26, 2021 is €8,5 million.

The remuneration accrued in 2022 for membership of the Board of Directors and with a charge to bylaw-stipulated emoluments amounted to €6.931 million, the detail being as follows:

	Remuneration of Board members relating to their position (euros)							
Board of Directors	Board	Delegate C.	Independent Lead Director	Audit C.	Appoints C.	Remun. C.	Sustain. C.	Total
Antonio Brufau Niubó (1)	2,500,000	—	—	—	—	—	—	2,500,000
Josu Jon Imaz	176,594	176,594	—	—	—	—	—	353,188
Arantza Estefanía Larrañaga	176,594	—	—	—	—	22,074	44,149	242,817
María Teresa García-Milá Lloveras	176,594	—	—	88,297	22,074	—	—	286,965
Henri Philippe Reichstul	176,594	176,594	—	—	—	—	—	353,188
Mª del Carmen Ganyet i Cirera (2)	176,594	117,729	—	29,432	8,278	7,358	—	339,391
Ignacio Martín San Vicente (3)	176,594	176,594	—	—	—	—	—	353,188
Manuel Manrique Cecilia (4)(5)	176,594	176,594	—	—	—	—	—	353,188
Mariano Marzo Carpio	176,594	—	22,074	58,865	8,278	7,358	44,149	317,318
Isabel Torremocha Ferrezuelo	176,594	—	—	88,297	—	—	44,149	309,040
Emiliano López Achurra (7) (8)	176,594	—	—	—	22,074	14,716	44,149	257,533
Aurora Catá (9)	176,594	—	—	88,297	22,074	22,074	—	309,039
J. Robinson West	176,594	176,594	—	—	—	—	—	353,188
Iván Martén Uliarte (10)	132,446	117,729	—	—	—	—	—	250,175
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 in 2022 came to: (i) €176,594 for membership of the Board of Directors; (ii) €176,594 for membership of the Delegate Committee; (iii) €88,297 for membership of the Audit and Control Committee; (iv) €44,149 for membership of the Sustainability Committee; (v) €22,074 for membership of the Appointments Committee; and (vi) €22,074for membership of the Remuneration Committee; and (vii) €22,074 for the position of Independent Lead Director.

(1) The remuneration conditions of Mr. Brufau, as Non-Executive Chair of the Board of Directors, consist of a fixed remuneration of €2,500 thousand gross per year. Additionally, remuneration in kind and payments on account/withholdings linked to remuneration in kind amounted to a total of €0.311 million.
(2) On May 6, 2022, the Annual General Meeting approved the re-election of Ms. Ganyet i Cirera as Director..
(3) On May 6, 2022, the Annual General Meeting approved the re-election of Mr. Martín San Vicente as Director.
(4) On June 29, 2022, the Board of Directors approved the re-election of Mr. Manrique Cecilia as Independent Director.
(5) On May 6, 2022, the Annual General Meeting approved the re-election of Mr. López Achurra as Director.
(6) On May 6, 2022, the Annual General Meeting approved the re-election of Mr. Martén Uliarte as Director.

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 associate 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 Chief Executive Officer, whose remuneration is subject to the commitments set forth in his contract for services, as described further on.

b) Due to the holding of executive positions and performing executive duties

In 2022, compensation to Directors for the performance of executive duties was as follows:

€ Million	Josu Jon Imaz
Fixed monetary remuneration	1.200
Variable remuneration and in kind [1]	2.574

[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 ninth cycle of the Share Purchase Plan for the Beneficiaries of the Long-Term Incentive Plans, as detailed in Note 27.3.

The above amounts do not include the amounts detailed in section d) below.

c) Due to membership of the Boards of Directors of investees

The remuneration earned in 2022 by members of the Board of Directors of the parent company for membership on the managing bodies of other Group companies, joint arrangements or associates amounts to €0.649million, and is detailed as follows:

	€ Million
Arantza Estefanía Larrañaga	0.030
Emiliano López Achurra	0.619

d) Due to contributions to pension plans and welfare plans

The cost in 2022 of the contributions made to pension plans and welfare plans for the Chief Executive Officer discharging executive duties in the Group amounted to:

	€ Million
Josu Jon Imaz	0.254

e) Share Purchase Plan for Beneficiaries of the Long-Term Incentive Plans

On June 3, 2022, the vesting period concluded for the eighth cycle of the share purchase plan for beneficiaries of long-term incentive plans (see Note 27.4). Upon vesting, Josu Jon Imaz became entitled to receive a total of 14,969 shares, valued at a price of €15.95 per share.

28.2) Indemnity payments to Board members

In 2022, no Director received any indemnity payments from Repsol.

28.3) Other transactions with directors

In 2022, Repsol's Directors did not conclude any material transaction with the Parent or any of the Group companies outside the ordinary course of business or under any conditions other than the standard customer or normal market conditions.

The Chief Executive Officer signed up for the , 2020-2023, 2021-2024 and 2022-2025 cycles of the Share Purchase Plan for Beneficiaries of the Long-Term Incentive Plans, as detailed in Note 27.

In 2022, 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, the resolutions of the Board and of the Appointments Committee during the year regarding related-party transactions, ratification, re-election and continuity of Directors and on appointment to positions on the Board and its committees were passed in the absence of the Director affected by the relevant proposed resolution.

In addition, the Chief Executive Officer did not participate in the approval of the Board of Directors resolutions regarding his compensation for the performance of executive duties at the Company.

28.4) Remuneration of key management personnel

a) Scope

Repsol considers "key management personnel" to be the members of the Executive Committee. In 2022, a total of 12 persons formed the Executive Committee. The term "key management personnel" 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 2022 by the people who, at some juncture during the period and during the time they occupied such positions, were members of the Executive Committee. 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. (information included in Note 28.1).

b) Wages and salaries, executive welfare plan, pension fund and insurance premiums.

The total remuneration earned in 2022 is as follows:

	€ Million
Wages	5.122
Allowances	0.068
Variable remuneration [1]	6.457
Remuneration in kind [2]	0.580
Executive welfare plan	1.054

[1] This consists of an annual bonus, and a multi-annual bonus, calculated as a given percentage of the fixed remuneration earned on the basis of the degree to which certain targets are met.
[2] Includes vested rights to 11,949 additional gross shares for the ninth cycle of the Share Purchase Plan for Beneficiaries of the Long-Term Incentive Plans, valued at €15.95 per share, equivalent to a gross amount of €190,581. It also includes contributions to pension plans for executives (see Note 27), and the premiums paid for life and disability insurance, amounting to €0.137 million.

a. Advances and loans granted

At December 31, 2022, Repsol, S.A. had granted loans to key management personnel amounting to €0.111 million, having accrued an average interest rate of 2.0% during the current financial year.

28.5) Indemnity payments to key management personnel

Key management personnel are entitled to severance pay if their employment is terminated for any reason other than a breach of executive duties, retirement, disability or their own free will without reference to any of the grounds for compensation specified in their contracts.

The Group has arranged a group insurance policy to assure such benefits for Executive Committee members with the title General Manager, and for Directors that have performed executive duties.

In 2022, none of the Company's key management personnel had received severance pay for the termination of their contract.

28.6) Other transactions with key management personnel

In 2022, Executive Committee members did not conclude any material transaction with the parent 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, the Executive Committee members signed up for the 2020-2023 2021-2024 and 2022-2025 cycles of the Share Purchase Plan for Beneficiaries of the Long-term Incentive Plans, as detailed in Note 27.3.

28.7) Civil liability insurance

In 2022, the Group took out a civil liability policy for Board members, the key management personnel referred to in Note 28.4 a), and the other executives and people executing such functions, for a total premium of €4.4 million. The policy also covers different Group companies under certain circumstances and conditions.

29) Further breakdowns

29.1) Environmental investment, expenses and provisions[49]

Environmental investments in 2022[50] amounted to €115 million (€51 million classified as "*work in progress*" at December 31). These investments most notably include those aimed at fulfilling the obligations assumed by the Company with regard to the energy transition (energy savings, energy efficiency or use of waste as raw material), management and optimization of water consumption, reduction of atmospheric emissions and soil remediation[51]. Environmental expenses, which are recognized under "*Procurements*" and "*Other operating expenses*", excluding the expenses for the allowances necessary to cover CO2 emissions (see Note 15), amounted to €82 million and €76 million in 2022 and 2021, respectively. In 2022, of note are the actions carried out for the protection of the atmosphere in the industrial facilities (€19 million in 2021); water management for an amount of €17 million(€17 million in 2021); and waste management for an amounting of €15 million (€16 million in 2021).

Provisions for environmental[52] actions at December 31, 2022 amount to €141 million, which includes the estimated payments associated with the oil spill that occurred at the Pampilla, S.A.A. refinery for containment, cleanup, and remediation activities (see next section). Additionally, the Group has registered provisions for the dismantling of its field assets and industrial complexes (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.

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[49] Items identified as being of an environmental nature, understood as those that have the purpose of minimizing environmental impact and protecting and improving the environment. The criteria for their valuation are in accordance with the Group's technical criteria based on the guidelines issued by the American Petroleum Institute (API).
[50] For additional information on the Group's investments in low-carbon generation businesses, see sections 5.3 and 6. of the 2022 consolidated Management Report. Regarding investments in Group activities that contribute to climate change mitigation and adaptation objectives, in accordance with the Taxonomy of Sustainable Finance of the European Union, see Appendix V.e) of the same report.
[51] In 2022 most notable are: those carried out in industrial complexes; in Chemicals, the adaptation of the discharge of OPSM to the BREF and the progress of engineering in the adaptation project for 80,000 tons of pyrolysis oil in Tarragona, which will allow the generation of plastics with a circular life cycle; and in Refining, motorization of compressors previously driven by steam in the Cartagena platform unit, the Puertollano coke unit and Bilbao HD3, and the reduction of flare emissions by installing a recovery system for the gases discharged to the flare and the reduction of water consumption.
[52] Repsol reserves the necessary amounts to prevent and repair effects on the environment, which are estimated based on technical and economic criteria. These amounts are shown under the "Current and non-current provisions" of the balance sheet and in the "Other provisions" column of the movement of provisions table in Note 15.

Environmental risk - spill in Peru

On January 15, 2022, an oil spill occurred at the Multiboyas Terminal No. 2 facilities in the Pampilla, S.A.A. refinery while crude oil was being unloaded from the vessel *Mare Doricum*, due to an abnormal movement of the vessel.

The spill has impacted populations and the natural environment, as well as marine species on the Peruvian coasts, To date, the first clean-up operation in the affected areas has been completed. According to the Agency for Environmental Evaluation and Control (OEFA), of the 97 impacted coastal areas, 26 are considered clean while 71 require a rehabilitation plan, which is being worked on and must be submitted within a maximum period of 1 year. However, Repsol has presented various internal and external studies that show that the cleaning has been effective, except in inaccessible sites such as Pasamayo where other cleaning techniques are applied according to the geography. The technical evidence prepared by the company and presented to the authority concludes that the presence of hydrocarbons is below the limit set by environmental quality standards, above which there would be a risk to health and the environment. This indicates that fishing could be resumed, as well as the recreational and commercial activities on accessible beaches. Currently, the authorities are carrying out further monitoring to confirm the situation and determine whether activities can resume.

Regarding local communities, it should be noted that to date more than 9,800 people, out of a total of 10,300 beneficiaries included in the list agreed upon with the Presidency of the Council of Ministers, have received compensation advances. Total compensation agreements have been reached with 7,000 people on this register.

The expenses recognized in the income statement to cover the damage caused by the incident, such as containment activities, cleanup, remediation, compensation to affected parties and other related costs, are estimated to exceed $300 million. At December 31, costs pending payment amounted to $178 million (see Note 15). These payments may vary due to various circumstances inherent in the progress of the planned activities, as well as developments in the administrative sanctioning procedures, the outcome of which will depend on the conclusions of investigations still in progress.

Repsol has insurance policies with coverage related to the consequences of this event, and is currently coordinating the actions to be followed with the experts' office (adjusters) appointed by the insurance companies. As of December, $34 million had been received from the insurance companies in advances of the compensation associated with the incident.

Notwithstanding the initiatives that could be taken against the party responsible for the spill, Refinería La Pampilla, S.A.A. ratifies its commitment to continue mitigating and remedying its effects, as well as to work with the authorities and affected communities and to respond to citizens in the most effective way and with total transparency. The company has also stated its intention to develop sustainable social projects to contribute to economic recovery in the affected areas. Social aid projects are being implemented in these areas.

Corporate insurance policies, subject to their terms and conditions, cover civil liabilities for pollution on land and sea and, for some countries and activities, certain administrative liabilities for pollution on land under the Environmental Responsibility Law, all resulting from accidental, sudden and identifiable events, in line with usual industry practices and enforceable legislation.

For more information on ongoing litigation arising from the spill, see Note 15.2. Regarding the environmental impacts of the spill and the actions to mitigate them, see sections 6.4.3 Respect for human rights and relations with communities and 6.5.3 Spill management of the 2022 consolidated Management Report.

29.2) Staff[53]

The Repsol Group employed a total of 23,770 people at December 31, 2022, geographically distributed as follows: Spain (17,283), South America (3,437), North America (1,143), Europe, Africa and Brazil (1,795), and Asia (112). Average headcount in 2022 was 23,866 employees (23,931 employees in 2021).

[53] For more information on the workforce and employee management policies, see section 6.4 of the 2022 consolidated Management Report.

Below is a breakdown of the Group's total staff[54] distributed by professional category and gender at year-end 2022 and 2021:

Job categories by gender	**2022**		**2021**	
	Men	Women	Men	Women
Executives	176	45	184	46
Technical Managers	1,507	750	1,540	733
Technicians	6,386	3,602	6,681	3,612
Manual workers and junior personnel	6,367	4,937	6,419	4,685
Total	**14,436**	**9,334**	**14,824**	**9,076**

The Repsol Group employed a total of 486 differently-abled people at December 31, 2022 (2.04% of its workforce).

In Spain, in 2022, using the computation criteria stipulated in the Spanish law on the rights of Disabled Persons and their Social Inclusion (LGD), the Group surpassed the legally required percentage threshold: its differently-abled workforce accounted for 2.16% of its workforce, namely 375 direct hires.

29.3) Fees paid to auditors

The fees for audit services and other services provided during the year to Repsol Group companies by PricewaterhouseCoopers Auditores, S.L. and the companies in its network (PwC), as well as the fees for those provided by other audit firms, are shown below:

Audit fees (main auditor)	€ Million	
€ Million	**2022**	**2021**
Audit services	7.1	6.0
Other services	1.6	1.4
Audit Related	1.6	1.4
Tax	—	—
Others	—	—
Total (1)	**8.7**	**7.4**

(1) The fees approved in 2022 for PricewaterhouseCoopers Auditores, S.L. (not including companies that are part of its network) for audit services and other services amounted to €5.4 million and €1.4 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.

"Other services" includes professional services related to the audit, mainly comprising the review of the Internal Control over Financial Reporting System, a limited review of the interim condensed consolidated financial statements, 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 2022 consolidated Management Report. No tax services have been provided - nor any different types of services other than those related to the audit.

29.4) Interest rate reform

In relation to the process of transition to new reference interest rates currently underway in different jurisdictions worldwide, the Group has carried out a review of the contracts arranged in accordance with the calendar foreseen for the reform, mainly affecting loans and credit facilities.

In relation to the transition process, the new contracts incorporate the reference to risk free rates, except where the rates so allow (renewals of contracts entered into prior to January 1, 2022 referenced to USD LIBOR), and in any case, specific clauses are included to regulate the event of permanent discontinuation. In relation to previously existing contracts referenced to USD LIBOR, which will remain in effect after the final discontinuation date (June 30, 2023), the transition to the new rates is proceeding in accordance with the company's rolling plan for their completion within the required timeframe. All contracts with a termination date of December 31, 2022 that were referenced to GBP Libor have now been transitioned to the new corresponding rate (SONIA).

This reform has not led a change in the Group's interest rate financial risk management policy.

[54] In accordance with the provisions of Organic Law 3/2007, of March 22, for the effective equality of men and women, published in the Official State Journal of March 23, 2007.

The main financial assets and liabilities pegged to LIBOR rates as at December 31, 2022, in which the rate is a main element of the contract, are itemized below:

Financial assets and liabilities at LIBOR rates € Million	12/31/2022 Amount/Notional
Financial assets [(1)]**:**	
USD LIBOR	898
Financial liabilities [(2)]**:**	
USD LIBOR	489

NOTE: Does not include assets and liabilities of a commercial nature.
[(1)] Includes mainly current accounts, deposits and loans, net of impairment, tied to financing in Venezuela (see Note 8).
[(2)] Includes mainly loans

29.5) Other annual information

Along with these consolidated Financial Statements, Repsol publishes annual information that is available on the Repsol website (www.repsol.com):

- Consolidated Management Report, which includes the Statement of Non-Financial Information, the Annual Corporate Governance Report and the Annual Report on Directors' Remuneration.
- Alternative Performance Measures (APMs).
- Information on oil and gas upstream activities.
- Report on payments to governments on oil and gas upstream activities.

(30) Subsequent events

In 2023, prior to publication of this report, the following events stand out:

- On January 20, 2023, Repsol International Finance B.V. (RIF) announced a partial cash repurchase offer for a bond issued in March 2015 for €1,000 million, maturing in March 2075 and with an annual coupon of 4.5% (see Note 7.2, ISIN of the bond XS1207058733). The price of the repurchase offer has been 98.7% of the face value plus the current coupon. Holders of bonds for a nominal amount of €229 million participated in the offer, resulting in the acquisition by RIF and subsequent amortization of 22.9% of the issue. On January 30, 2023, RIF paid the acceptors of the repurchase offer a total of €235 million in cash, the repurchased and canceled bonds being derecognized on the balance sheet.

- In the proceedings pending before the Central Court of Instruction No. 6 of the Audiencia Nacional in relation to the retention of the company Centro Exclusivo de Negocios y Transacciones, S.L. (Cenyt), by two judicial decrees on January 30, 2023 the Criminal Chamber of the Audiencia Nacional has confirmed dismissal and filing of the proceeding with respect to Repsol, S.A., its Chairman, the Director Secretary and two other former executives of the company. These judgments, as indicated, are final and are not subject to appeal.

  The Criminal Chamber concludes that there has been no illicitness or irregularity in the behavior of the aforementioned individuals and recognizes, with respect to Repsol, the profound culture of regulatory compliance that prevailed in the company and that, even before the introduction of specific mandatory legal provisions, Repsol had implemented a code of ethics and conduct as well as specific internal rules of due control for all its employees, managers and collaborators, in line with the most advanced and demanding international standards.

- On February 15, 2023, the Board of Directors of Repsol, S.A. agreed to implement a program to repurchase treasury stock for a maximum of 35 million shares and to propose to the next Annual General Meeting a capital reduction through the redemption of 50 million treasury shares. For more information on shareholder remuneration in 2023, see Note 6.3.

(31) 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: Segment reporting and reconciliation with EU-IFRS financial statements[55]

Income statement figures

The reconciliation between adjusted net income and EU-IFRS net income at December 31, 2022 and 2021, is as follows:

Results	€ Million											
	ADJUSTMENTS											
	Adjusted net income		**Reclassifications of joint ventures**		**Special items**		**Inventory effect[(2)]**		**Total adjustments**		**Net income under EU-IFRS**	
Results	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Operating income	10,648 [(1)]	4,372 [(1)]	(1,819)	(541)	(3,072)	(1,173)	103	1,099	(4,788)	(615)	5,860	3,757
Financial result	86	(315)	178	137	67	449	—	—	245	586	331	271
for using the equity method - net of taxes	(22)	(3)	1,030	314	(19)	(10)	—	—	1,011	304	989	301
Income before tax	**10,712**	**4,054**	**(611)**	**(90)**	**(3,024)**	**(734)**	**103**	**1,099**	**(3,532)**	**275**	**7,180**	**4,329**
Income tax	(3,938)	(1,590)	611	90	517	(22)	(25)	(279)	1,103	(211)	(2,835)	(1,801)
Net income	**6,774**	**2,464**	**—**	**—**	**(2,507)**	**(756)**	**78**	**820**	**(2,429)**	**64**	**4,345**	**2,528**
Profit attributable to non-controlling interests	(113)	(10)	—	—	22	4	(3)	(23)	19	(19)	(94)	(29)
Net income attributable to the parent	**6,661**	**2,454**	**—**	**—**	**(2,485)**	**(752)**	**75**	**797**	**(2,410)**	**45**	**4,251**	**2,499**

(1) Profit from continuing operations at current cost of supply (CCS).
(2) The inventory effect represents an adjustment to "*Procurement*" and "*Changes in inventory of finished goods*" on the IFRS-EU income statement.

Revenue from ordinary activities by segments between customer and inter-segment revenue is displayed below:

Income by segment	€ Million											
	Income from ordinary activities [(3)]		**Net income from operations**		**Provisions for amortization of fixed assets [(2)]**		**Impairment income / (expenses)**		**Net income from entities valued using the equity method**		**Income tax**	
Segments	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Upstream	10,712	6,809	5,705	3,027	(1,655)	(1,319)	(773)	(1,028)	28	9	(2,703)	(1,348)
Industrial	61,848	39,956	4,315	792	(827)	(824)	(2,070)	11	(3)	3	(1,071)	(197)
Commercial and Renewables	34,185	21,891	809	761	(417)	(353)	(159)	5	(42)	(12)	(203)	(188)
Corporate	(28,021)	(16,526)	(181)	(208)	(36)	(66)	(3)	(24)	(5)	(3)	39	143
Adjusted figures [(1)]	**78,724**	**52,130**	**10,648**	**4,372**	**(2,935)**	**(2,562)**	**(3,005)**	**(1,036)**	**(22)**	**(3)**	**(3,938)**	**(1,590)**
Adjustments:												
Upstream	(3,763)	(1,800)	(2,236)	(1,330)	573	536	320	373	987	268	510	330
Industrial	(432)	(374)	(2,327)	877	13	12	—	—	24	31	455	(441)
Commercial and Renewables	(290)	(211)	(168)	72	10	10	12	—	—	5	20	(38)
Corporate	914	—	(57)	(234)	—	—	—	—	—	—	118	(62)
EU-IFRS FIGURES	**75,153**	**49,745**	**5,860**	**3,757**	**(2,339)**	**(2,004)**	**(2,673)**	**(663)**	**989**	**301**	**(2,835)**	**(1,801)**

(1) Figures drawn up according to the Group's reporting model described in Note 4.
(2) Including depreciation of failed exploratory drilling. For more information, see Note 20.
(3) Corresponds to the sum of "*Sales*" and "*Services rendered and other income*" (see Note 19.1). The itemization by provenance (customers or inter-segment transactions) is as follows:

Revenue from ordinary activities by segment	€ Million					
	Customers		**Inter-segment**		**Total**	
	2022	**2021**	**2022**	**2021**	**2022**	**2021**
Upstream	7,484	4,924	3,228	1,885	10,712	6,809
Industrial	37,315	25,502	24,533	14,454	61,848	39,956
Commercial and Renewables	33,925	21,703	260	188	34,185	21,891
Corporate	—	1	8	2	8	3
(-) Adjustments and eliminations of operating income between segments	—	—	(28,029)	(16,529)	(28,029)	(16,529)
TOTAL	**78,724**	**52,130**	**—**	**—**	**78,724**	**52,130**

[55] Some of these metrics presented in this Appendix are Alternative Performance Measures (APMs) in accordance with European Securities Markets Authority (ESMA) guidelines. For further information, see Appendix II of the 2022 consolidated Management Report.

Balance Sheet Figures	€ Million							
	Non-current assets		**Net operating investments** (2)		**Capital employed** (3)		**Investments accounted for using the equity method**	
Segments	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Upstream	16,891	16,746	2,127	1,223	12,282	12,348	188	146
Industrial	7,274	8,674	1,025	859	11,108	11,163	73	9
Commercial and Renewables	5,205	4,727	925	829	4,667	4,451	370	376
Corporate	660	608	105	83	172	594	51	39
ADJUSTED FIGURES (1)	**30,030**	**30,755**	**4.182**	**2,994**	**28,229**	**28,556**	**682**	**570**
Adjustments:								
Upstream	(4,581)	(4,653)	(236)	(493)	518	(127)	3,197	2,591
Industrial	(185)	(168)	(26)	(33)	(25)	(22)	259	234
Commercial and Renewables	(115)	(117)	(108)	19	3	4	164	159
Corporate	—	—	1	—	(1)	—	—	—
EU-IFRS FIGURES	**25,149**	**25,817**	**3,813**	**2,487**	**28,724**	**28,411**	**4,302**	**3,554**

(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, 2022 and 2021 is as follows:

Cash Flow Figures	At December 31					
	Free cash flow		**Reclassification of joint ventures and others**		**EU-IFRS statement of cash flow**	
	2022	**2021**	**2022**	**2021**	**2022**	**2021**
I. Cash flows from / (used in) operating activities (cash flow from operations)	8,923	5,453	(1,091)	(776)	7,832	4,677
II. Cash flows from / (used in) investing activities	(3,712)	(2,614)	(391)	(319)	(4,103)	(2,933)
Free cash flow (I+II)	**5,211**	**2,839**	**(1,482)**	**(1,095)**	**3,729**	**1,744**

Net debt

The reconciliation of net debt to the IFRS-EU balance sheet as at December 31, 2022 and 2021 is as follows:

Net Debt	**Net debt**	**Reclassification of joint ventures**	**IFRS-EU balance sheet**
€ Million	**2022**	**2022**	**2022**
Non-current assets			
Non-current financial instruments(1) (2)	688	667	1,355
Current assets			
Other current financial assets (2)	3,148	(91)	3,058
Cash and cash equivalents	6,945	(433)	6,512
Non-current liabilities			
Non-current financial liabilities (2)	(9,540)	(590)	(10,130)
Current liabilities			
Current financial liabilities (2)	(3,497)	(48)	(3,546)
NET DEBT(3)	**(2,256)**	**(495)**	**(2,751)**

(1) Amounts included under "Non-current financial assets" in the balance sheet.
(2) Includes net non-current and current leases amounting to €-3043 and €-643 million, respectively, according to the Reporting model and €-2395 and €-511 million, respectively, according to the IFRS-EU balance sheet.
(3) The reconciliations in previous period are available at www.repsol.com.

Appendix II: Group's corporate structure
Appendix IIA: Companies comprising the Repsol Group

Name	Parent company	Country	Corporate purpose	Method of conso. (1)	December 2022 % Total Group Interest	% Control Int. (2)	€ Million Equity (3)	€ Million Share Capital (3)
UPSTREAM								
504744 Alberta, Ltd.	Repsol Canada Energy Partnership	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	113	307
8441251 Canada, Ltd.	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	18	16
8787352 Canada, Ltd.	Repsol Industrial Transformation, S.L (23)	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	(1)	2
Agri Development, B.V. (15)	Repsol Sinopec Brasil, B.V.	Netherlands	Platform for production of crude oil and natural gas	E.M.(J.V.)	6.00	10.00	—	—
Akakus Oil Operations, B.V.	Repsol Exploración Murzuq, S.A.	Netherlands	Oil and gas exploration and production	E.M.	49.00	49.00	—	—
BP Trinidad & Tobago, Llc. (15)	BPRY Caribbean Ventures, Llc.	United States	Oil and gas exploration and production	E.M.(J.V.)	30.00	100.00	—	—
BPRY Caribbean Ventures, Llc. (14)	Repsol Exploración, S.A.	United States	Oil and gas exploration and production	E.M.(J.V.)	30.00	30.00	1,117	2,924
Cardón IV, S.A. (14)	Repsol Exploración, S.A.	Venezuela	Oil and gas exploration and production	E.M.(J.V.)	50.00	50.00	316	4
Edwards Gas Services, Llc.	Repsol Oil & Gas USA, LLC	United States	Portfolio company	F.C.	100.00	100.00	79	124
Equion Energía, Ltd. (14)	Repsol, S.A. (31)	United Kingdom	Oil and gas exploration and production	E.M.(J.V.)	49.00	49.00	316	—
Fortuna International (Barbados), Inc. (12)	Talisman International (Luxembourg), S.a.r.l.	Barbados	Portfolio company	F.C.	100.00	100.00	45	72
Fortuna Resources (Sunda), Ltd. (9)	Talisman UK (South East Sumatra), Ltd.	Indonesia	Oil and gas exploration and production (11)	F.C.	100.00	100.00	29	—
Guará, B.V. (15)	Repsol Sinopec Brasil, B.V.	Netherlands	Platform for oil and natural gas production	E.M.	15.00	25.00	(8)	—
Lapa Oil & Gas, B.V. (15)	Repsol Sinopec Brasil, B.V.	Netherlands	Platform for oil and natural gas production	E.M.	15.00	25.00	2	—
Oleoducto de Crudos Pesados, Ltd.	Repsol OCP de Ecuador, S.A.	Cayman Islands	Portfolio company	E.M.	29.66	29.66	50	94
Paladin Resources, Ltd.	FEHI Holding, S.a.r.l.	United Kingdom	Portfolio company	F.C.	100.00	100.00	29	314
Petrocarabobo, S.A.	Repsol Exploración, S.A.	Venezuela	Oil and gas exploration and production	E.M.(J.V.)	11.00	11.00	—	581
Petroquiriqué, S.A. - Empresa Mixta (14)	Repsol Exploración, S.A.	Venezuela	Oil and gas exploration and production	E.M.(J.V.)	40.00	40.00	(1,252)	244
Quiriquiré Gas, S.A.	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	147	1,590
Repsol Andaman B.V.	Talisman International Holdings, B.V.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	48	—
Repsol Angostura, Ltd. (6)	Repsol Exploración, S.A.	Trinidad and Tobago	Oil and gas exploration and production (11)	F.C.	100.00	100.00	—	40
Repsol Bolivia, S.A.	Repsol Upstream Inversiones, S.A.	Bolivia	Provision of services	F.C.	100.00	100.00	314	15
Repsol Bulgaria Khan Kubrat, S.A.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production (11)	F.C.	100.00	100.00	15	—
Repsol Canada Energy Partnership	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	922	1,433
Repsol Colombia Oil & Gas Limited	Repsol Exploración, S.A.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	726	832
Repsol Corridor, S.A.	Fortuna International (Barbados), Inc.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	396	44
Repsol Ductos Colombia, S.A.S.	Talisman Colombia Holdco, Ltd.	Colombia	Oil and gas exploration and production	F.C.	100.00	100.00	50	3
Repsol E&P Bolivia, S.A.	Repsol Bolivia, S.A.	Bolivia	Oil and gas exploration and production	F.C.	100.00	100.00	307	2
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	2,053	1,773

					December 2022			
					%		€ Million	
Name	Parent company	Country	Corporate purpose	Method of conso. (1)	Total Group Interest	Control Int. (2)	Equity (3)	Share Capital (3)
Repsol E&P USA, Llc.	Repsol USA Holdings LLC	United States	Oil and gas exploration and production	F.C.	100.00	100.00	2,838	2,623
Repsol Exploração Brasil, Ltda.	Repsol, S.A.	Brazil	Oil and gas exploration and production	F.C.	100.00	100.00	1,009	1,038
Repsol Exploración 405A, S.A.	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	108	—
Repsol Exploración Aitoloakarnania, S.A.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	6	—
Repsol Exploración Argelia, S.A.	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	474	5
Repsol Exploración Aru, S.L	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	2	—
Repsol Exploración Atlas, S.A.	Repsol E&P Bolivia, S.A.	Bolivia	Oil and gas exploration and production	F.C.	100.00	100.00	(3)	2
Repsol Exploración Colombia, S.A.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production (11)	F.C.	100.00	100.00	(34)	3
Repsol Exploración Gharb, S.A.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production (11)	F.C.	100.00	100.00	5	—
Repsol Exploración Guinea, S.A.	Repsol Greece Ionian, S.L. (22)	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 (11)	F.C.	100.00	100.00	76	—
Repsol Exploración Ioannina, S.A.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production (11)	F.C.	100.00	100.00	23	—
Repsol Exploración Irlanda, S.A.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production (11)	F.C.	100.00	100.00	15	—
Repsol Exploración Karabashsky, B.V.	Repsol Greece Ionian, S.L. (22)	Netherlands	Oil and gas exploration and production (11)	F.C.	100.00	100.00	28	138
Repsol Exploración México, S.A. de C.V.	Repsol Exploración, S.A.	Mexico	Oil and gas exploration and production	F.C.	100.00	100.00	128	284
Repsol Exploración Murzuq, S.A.	Repsol Upstream Inversiones, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	170	10
Repsol Exploración Perú, S.A.	Repsol Upstream Inversiones, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	326	12
Repsol Exploracion South East Jambi B.V.	Repsol Exploración, S.A.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	7	—
Repsol Exploración South Sakakemang, S.L.	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	3	—
Repsol Exploración Tanfit, S.L.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production (11)	F.C.	100.00	100.00	11	3
Repsol Exploración Tobago, S.A.	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	13	—
Repsol Exploración West Papúa IV, S.L.	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	3	—
Repsol Exploración, S.A.	Repsol Lux E&P S.a.r.l. (29)	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	5,093	28
Repsol Finance Brasil B.V.	Repsol Exploração Brasil Ltda.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	2	4
Repsol Greece Ionian, S.L.	Repsol, S.A. (22)	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	187	—
Repsol Investigaciones Petrolíferas, S.A.	Repsol Exploración, S.A.	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	328	223
Repsol Lux E&P S.a.r.l. (5)	Repsol Upstream B.V. (29)	Luxembourg	Financing and holding of shares	F.C.	100.00	100.00	13,495	2
Repsol Norge, AS	Repsol Exploración, S.A.	Norway	Oil and gas exploration and production	F.C.	100.00	100.00	(566)	—
Repsol OCP de Ecuador, S.A.	Repsol Exploración, S.A. (20)	Spain	Oil and gas exploration and production	F.C.	100.00	100.00	52	—
Repsol Offshore E&P USA, Inc.	Repsol USA Holdings LLC	United States	Oil and gas exploration and production (11)	F.C.	100.00	100.00	13	31
Repsol Oil & Gas Australasia Pty, Ltd.	Talisman International Holdings, B.V.	Australia	Shared services company	F.C.	100.00	100.00	—	71
Repsol Oil & Gas Australia (JPDA 06-105) Pty Ltd.	Paladin Resources, Ltd.	Australia	Operation of a pipeline for oil and gas transport	F.C.	100.00	100.00	18	153
Repsol Oil & Gas Canada, Inc.	Repsol Exploración, S.A.	Canada	Oil and gas exploration and production	F.C.	100.00	100.00	350	7,144

Name	Parent company	Country	Corporate purpose	Method of conso. (1)	December 2022 % Total Group Interest	Control Int. (2)	€ Million Equity (3)	Share Capital (3)
Repsol Oil & Gas Gulf of Mexico, LLC	Repsol E&P USA Holdings Inc.	United States	Oil and gas exploration and production	F.C.	100.00	100.00	634	456
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	7,651	1,791
Repsol Oil & Gas RTS Sdn, Bhd.	Repsol Greece Ionian, S.L. (22)	Malaysia	Shared services company (11)	F.C.	100.00	100.00	2	20
Repsol Oil & Gas USA, LLC.	Repsol USA Holdings LLC	United States	Oil and gas exploration and production	F.C.	100.00	100.00	3,504	1,896
Repsol Oil &Gas Vietnam 07/03 Pty Ltd.	Repsol Greece Ionian, S.L. (22)	Australia	Oil and gas exploration and production (11)	F.C.	100.00	100.00	1	—
Repsol Oriente Medio, S.A.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production (11)	F.C.	100.00	100.00	42	—
Repsol Perpetual Norge, A.S.	Talisman Perpetual (Norway), Ltd.	Norway	Oil and gas exploration and production (11)	F.C.	100.00	100.00	—	1
Repsol Sakakemang, B.V.	Talisman International Holdings, B.V.	Netherlands	Oil and gas exploration and production	F.C.	100.00	100.00	139	—
Repsol Salamanca Midstream, LLC (5)	Repsol Oil & Gas Gulf of Mexico, LLC	United States	Oil and gas exploration and production	F.C.	100.00	100.00	38	38
Repsol Services Company	Repsol USA Holdings LLC	United States	Provision of services	F.C.	100.00	100.00	54	41
Repsol Servicios Colombia, S.A.	Repsol Greece Ionian, S.L. (22)	Spain	Oil and gas exploration and production (11)	F.C.	100.00	100.00	3	—
Repsol Shale Oil & Gas LLC. (5)	Repsol E&P USA Holdings Inc	United States	Oil and gas exploration and production (11)	F.C.	100.00	100.00	11	—
Repsol Sinopec Brasil, S.A. (14)	Repsol Lux E&P S.a.r.l. (32)	Brazil	Oil and gas exploration and production	E.M.(J.V.)	60.01	60.01	2,360	2,107
Repsol Sinopec Brasil, B.V. (15)	Repsol Lux E&P S.a.r.l. (21)	Brazil	Portfolio company	E.M.(J.V.)	60.00	60.00	17	14
Repsol Sinopec Resources UK, Ltd. (14)	Talisman Colombia Holdco, Ltd.	United Kingdom	Oil and gas exploration and production	E.M.(J.V.)	51.00	51.00	1,841	4,624
Repsol Transgasindo S.à r.l.	Fortuna International (Barbados), Inc.	Luxembourg	Portfolio company	F.C.	100.00	100.00	2	27
Repsol U.K., Ltd.	Repsol Exploración, S.A.	United Kingdom	Oil and gas exploration and production	F.C.	100.00	100.00	3	15
Repsol Upstream B.V.	Repsol, S.A.	Netherlands	Portfolio company	F.C.	100.00	100.00	8,363	3
Repsol Upstream Inversiones, S.A.	Repsol Lux E&P S.a.r.l. (32)	Spain	Portfolio company	F.C.	100.00	100.00	1,406	—
Repsol USA Holdings LLC.	Repsol Oil & Gas Holdings USA, Inc.	United States	Oil and gas exploration and production	F.C.	100.00	100.00	3,391	4,809
Repsol Venezuela, S.A.	Repsol Exploración, S.A.	Venezuela	Oil and gas exploration and production	F.C.	100.00	100.00	133	751
Salamanca Infrastructure, LLC (5)	Repsol Salamanca Midstream, LLC	United States	Oil and gas exploration and production	E.M.	22.50	22.50	204	204
Sierracol Energy Arauca, LLC	Repsol Lux E&P S.a.r.l. (24)	Colombia	Portfolio company	E.M.(J.V.)	25.00	25.00	113	99
Talisman (Asia), Ltd.	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production (11)	F.C.	100.00	100.00	—	—
Talisman (Block K 39), B.V.	Repsol Exploración, S.A.	Netherlands	Oil and gas exploration and production (11)	F.C.	100.00	100.00	(4)	—
Talisman (Jambi Merang), Ltd.	Talisman International Holdings, B.V.	Indonesia	Oil and gas exploration and production (11)	F.C.	100.00	100.00	(1)	76
Talisman (Sageri), Ltd.	Repsol Oil & Gas Canada, Inc.	Indonesia	Oil and gas exploration and production (11)	F.C.	100.00	100.00	(90)	—
Talisman (Vietnam 133 & 134), Ltd.	Repsol Greece Ionian, S.L. (22)	Vietnam	Oil and gas exploration and production (11)	F.C.	100.00	100.00	1	34
Talisman Colombia Holdco, Ltd.	Repsol Exploración, S.A.	United Kingdom	Portfolio company	F.C.	100.00	100.00	702	1,524
Talisman East Jabung, B.V.	Talisman International Holdings, B.V.	Netherlands	Oil and gas exploration and production (11)	F.C.	100.00	100.00	3	—
Talisman Perpetual (Norway), Ltd.	FEHI Holding, S.a.r.l.	United Kingdom	Portfolio company (11)	F.C.	100.00	100.00	—	1
Talisman Resources (Bahamas), Ltd. (8)	Paladin Resources, Ltd.	Bahamas	Oil and gas exploration and production (11)	F.C.	100.00	100.00	1	—
Talisman Resources (North West Java), Ltd.	Talisman UK (South East Sumatra), Ltd.	Indonesia	Oil and gas exploration and production (11)	F.C.	100.00	100.00	37	—
Talisman South Sageri, B.V.	Talisman International Holdings, B.V.	Netherlands	Oil and gas exploration and production (11)	F.C.	100.00	100.00	—	—

					December 2022			
					%		€ Million	
Name	Parent company	Country	Corporate purpose	Method of conso. (1)	Total Group Interest	Control Int. (2)	Equity (3)	Share Capital (3)
Talisman UK (South East Sumatra), Ltd.	Paladin Resources, Ltd.	United Kingdom	Oil and gas exploration and production (11)	F.C.	100.00	100.00	38	—
Talisman Vietnam 07/03-CRD Corporation, Llc.	Talisman International Holdings, B.V.	Vietnam	Oil and gas exploration and production (11)	F.C.	100.00	100.00	11	—
Talisman Vietnam 146-147, B.V.	Repsol Greece Ionian, S.L. (22)	Vietnam	Oil and gas exploration and production (11)	F.C.	100.00	100.00	8	10
Transasia Pipeline Company Pvt. Ltd.	Repsol Transgasindo S.à r.l	Republic of Mauritius	Portfolio company	E.M.	15.00	15.00	78	(1)
Transportadora Sulbrasileira del Gas, S.A.	Repsol Exploração Brasil Ltda	Brazil	Gas pipeline construction and operation	E.M.(J.V.)	25.00	25.00	(1)	11
Transworld Petroleum (U.K.) Ltd.	Repsol Sinopec North Sea, Ltd.	United Kingdom	Oil and gas exploration and production	E.M.(J.V.)	51.00	100.00	—	—
Triad Oil Manitoba, Ltd.	Repsol Oil & Gas Canada, Inc.	Canada	Oil and gas exploration and production (11)	F.C.	100.00	100.00	6	—
Vung May 156 - 159 Vietnam, B.V.	Repsol Greece Ionian, S.L. (22)	Netherlands	Oil and gas exploration and production (11)	F.C.	100.00	100.00	—	4
YPFB Andina, S.A. (14)	Repsol Bolivia, S.A.	Bolivia	Oil and gas exploration and production	E.M.(J.V.)	48.33	48.33	480	166
YPFB Transierra, S.A. (15)	YPFB Andina, S.A.	Bolivia	Transport of oil and gas by pipeline	E.M.	21.51	44.50	174	75
INDUSTRIAL								
Acteco Productos y Servicios, S.L. (5)	Repsol Química, S.A.	Spain	Waste management and mechanical recycling of plastics	E.M.(J.V.)	27.00	27.00	9	3
Alba Emission Free Energy, S.A.	Petróleos del Norte, S.A.	Spain	Decarbonization activities	F.C.	85.98	100.00	1	—
Asfaltos Españoles, S.A.	Repsol Petróleo, S.A.	Spain	Asphalts	P.I.	49.99	50.00	34	9
Basque Hydrogen, S.L (5)	Alba Emission free Energy, SA	Spain	Decarbonization activities	E.M.(J.V.)	43.85	51.00	—	—
Bay of Biscay Hydrogen, S.L. (5)	Alba Emission free Energy, SA	Spain	Decarbonization activities	F.C.	85.98	100.00	—	—
Cartagena Hydrogen Network, S.L. (5)	Repsol Industrial Transformation, S.L	Spain	Development of production processes, storage, transport, use, consumption and transformation of hydrogen	F.C.	100.00	100.00	—	—
Tarragona Hydrogen Network, S.L. (5)	Repsol Industrial Transformation, S.L	Spain	Development of production processes, storage, transport, use, consumption and transformation of hydrogen	F.C.	100.00	100.00	—	—
Cogeneración Gequisa, S.A. (13)	General Química, S.A.U.	Spain	Production of electricity and steam	E.M.	19.50	39.00	8	2
Compañía Auxiliar de Remolcadores y Buques Especiales, S.A.	Repsol Petróleo, S.A.	Spain	Provision of maritime services	F.C.	99.24	100.00	9	—
Dynasol China, S.A. de C.V. (13)	Dynasol Gestión México, S.A.P.I. de C.V.	Mexico	Provision of services	E.M.(J.V.)	50.00	100.00	21	22
Dynasol Elastómeros, S.A. de C.V. (13)	Dynasol Gestión México, S.A.P.I. de C.V.	Mexico	Production and sale of chemical products	E.M.(J.V.)	50.00	99.99	117	32
Dynasol Elastómeros, S.A.U. (13)	Dynasol Gestión, S.L.	Spain	Production and sale of chemical products	E.M.(J.V.)	50.00	100.00	112	17
Dynasol Gestión México, S.A.P.I. de C.V. (13)	Repsol Química, S.A.	Mexico	Portfolio and shared services company	E.M.	50.00	50.00	305	231
Dynasol Gestión, S.L.	Repsol Química, S.A.	Spain	Portfolio and shared services company	E.M.	50.00	50.00	238	42
Dynasol, Llc. (13)	Dynasol Gestión, S.L.	United States	Sale of petrochemical products	E.M.(J.V.)	50.00	100.00	17	11
Ecoplanta Molecular Recycling Solutions, SL	Repsol Industrial Transformation, S.L	Spain	Promotion, design, construction and operation of molecular recycling facilities	F.C.	81.12	100.00	29	4
Energía Distribuida del Norte, S.A.	Alba Emission Free Energy, S.A. (30)	Spain	Construction and operation of an oil refinery	F.C.	85.98	100.00	2	1
Enerkem Inc. (5)	Repsol Química, S.A.	Canada	Production of renewable syngas (methanol) from urban waste	E.M.	14.20	14.20	434	550
General Química, S.A.U. (13)	Dynasol Gestión, S.L.	Spain	Manufacture and sale of petrochemical products	E.M.(J.V.)	50.00	100.00	51	6
Grupo Repsol del Perú, S.A.C.	Repsol Perú, B.V.	Peru	Shared services company	F.C.	100.00	100.00	(1)	—

Name	Parent company	Country	Corporate purpose	Method of conso. (1)	December 2022 % Total Group Interest	Control Int. (2)	€ Million Equity (3)	Share Capital (3)
Iberian Lube Base Oils Company, S.A.	Repsol Petróleo, S.A.	Spain	Develop and production of lubricants	P.I.	29.99	30.00	259	180
Industrias Negromex, S.A. de C.V. (13)	Dynasol Gestión México, S.A.P.I. de C.V.	Mexico	Manufacture of synthetic oil cloths	E.M.	50.00	99.99	118	57
Insa Gpro (Nanjing), Synthetic Rubber Co. Ltd. (13)	Dynasol China, S.A. de C.V.	China	Manufacture, development, sale of synthetic rubber	E.M.(J.V.)	25.00	50.00	33	38
Liaoning North Dynasol Synthetic Rubber Co. Ltd. (13)	Dynasol Gestión, S.L.	China	Manufacture, development, sale of synthetic rubber	E.M.(J.V.)	25.00	50.00	3	104
Petróleos del Norte, S.A.	Repsol Industrial Transformation, S.L	Spain	Construction and operation of an oil refinery	F.C.	85.98	85.98	1,757	121
Petronor Innovación, S.L.	Petróleos del Norte, S.A.	Spain	Research activities	F.C.	85.98	100.00	1	—
Polidux, S.A.	Repsol Química, S.A.	Spain	Manufacture and sale of petrochemical products	F.C.	100.00	100.00	18	17
Refinería La Pampilla, S.A.A.	Repsol Perú, B.V.	Peru	Refining and sale of oil and gas	F.C.	99.20	99.20	507	696
Relkia Distribuidora de Electricidad, S.L	Repsol Petróleo, S.A.	Spain	Distribution of electricity	F.C.	99.97	100.00	11	—
Remolcadores Portuarios de Tarragona, S.L. (5)	Compañía Auxiliar de Remolcadores y Buques Especiales, S.A.	Spain	Activities related to maritime transport and inland waterways	P.I.	37.71	38.00	1	—
Repsol Canadá, Ltd.	Repsol Industrial Transformation, S.L (22)	Canada	Regasification of LNG	F.C.	100.00	100.00	(1)	2
Repsol Chemie Deutschland, GmbH	Repsol Química, S.A.	Germany	Sale of chemical products	F.C.	100.00	100.00	3	—
Repsol Comercial, S.A.C.	Refinería La Pampilla, S.A.A.	Peru	Sale of fuel	F.C.	99.20	100.00	71	79
Repsol Energy North América Canada Partnership (26)	St. John LNG Development Company (23)	Canada	Production and exploration of hydrogen	F.C.	100.00	100.00	—	—
Repsol Energy North América Corporation	Repsol Industrial Transformation, S.L (25)	United States	Sale of LNG	F.C.	100.00	100.00	(183)	1,140
Repsol Energy Perú, S.A.C.	Repsol Comercial, S.A.C.	Peru	Sale of solid, liquid and gaseous fuels and related products (11)	F.C.	99.20	100.00	3	—
Repsol Industrial Transformation, S.L	Repsol, S.A.	Spain	Portfolio company	F.C.	100.00	100.00	6,082	—
Repsol LNG Holding, S.A.	Repsol Industrial Transformation, S.L	Spain	Sale of fuel	F.C.	100.00	100.00	182	2
Repsol Marketing, S.A.C.	Repsol Customer Centric, S.L.	Peru	Sale of fuel and special products	F.C.	97.79	100.00	(1)	3
Repsol Perú, B.V.	Repsol, S.A.	Netherlands	Portfolio company	F.C.	100.00	100.00	351	363
Repsol Petróleo, S.A.	Repsol Industrial Transformation, S.L	Spain	Import of products and operation of refineries	F.C.	99.97	99.97	1,415	218
Repsol Polímeros, Unipessoal, Lda.	Repsol Química, S.A.	Portugal	Manufacture and sale of petrochemical products	F.C.	100.00	100.00	260	62
Repsol Química, S.A.	Repsol Industrial Transformation, S.L	Spain	Manufacture and sale of petrochemical products	F.C.	100.00	100.00	1,171	60
Repsol Renewable and Circular Solutions, S.A (28)	Repsol Industrial Transformation, S.L (25)	Spain	Production, storage, consumption and transformation of hydrogen	F.C.	100.00	100.00	(2)	—
Repsol St. John LNG, S.L	Repsol LNG Holding, S.A.	Spain	Sector studies (11)	F.C.	100.00	100.00	(1)	—
Repsol Trading Perú, S.A.C.	Repsol Trading, S.A.	Peru	Storage, sale, trading and transport	F.C.	100.00	100.00	4	9
Repsol Trading Singapore Pte, Ltd.	Repsol Trading, S.A.	Singapore	Storage, sale, trading and transport	F.C.	100.00	100.00	(70)	—
Repsol Trading USA LLC. (19)	Repsol Energy North América Corporation (25)	United States	Storage, sale, trading and transport	F.C.	100.00	100.00	118	296
Repsol Trading, S.A.	Repsol Industrial Transformation, S.L	Spain	Storage, sale, trading and transport	F.C.	100.00	100.00	345	—
Saint John LNG Development Company Ltd. (10)	Repsol Industrial Transformation, S.L. (27)	Canada	Liquefaction plant investment project in Canada	F.C.	100.00	100.00	—	4
Saint John LNG Limited Partnership	St. John LNG Development Company (23)	Canada	Provision of services in Liquefaction plant in Canada	F.C.	100.00	100.00	59	—
Servicios de Seguridad Mancomunados, S.A.	Repsol Petróleo, S.A.	Spain	Safety	F.C.	99.95	100.00	1	—

					December 2022			
					%		€ Million	
Name	**Parent company**	**Country**	**Corporate purpose**	**Method of conso.** (1)	**Total Group Interest**	**Control Int.** (2)	**Equity** (3)	**Share Capital** (3)
Tucan LNG S.à r.l. (5)	Repsol Industrial Transformation, S.L	Luxembourg		F.C.	100.00	100.00	—	—
COMMERCIAL AND RENEWABLES								
Abastecimentos e Serviços de Aviaçao, Lda.	Repsol Portuguesa, Lda	Portugal	Sale of oil products	F.C.	48.89	50.00	—	—
Air Miles España, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Travel Club Program. Loyalty services	F.C.	26.03	26.67	14	—
Alectoris Energía Sostenible 1, S.L.	Repsol Renovables, S.A.U.	Spain	Wind power project	E.M.	38.25	51.00	52	—
Alectoris Energía Sostenible 3, S.L.	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	38.25	51.00	47	—
Ampere Power Energy, S.L.	Repsol Energy Ventures, S.A.	Spain	Manufacture and sale of energy accumulators	F.C.	7.33	7.33	22	1
Aragonesa de Infraestructuras Energéticas Renovables, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	(5)	—
Arco Energía 1, S.L.U.	Repsol Renovables, S.A.U.	Spain	Sun power project	F.C.	75.00	100.00	(9)	—
Arco Energía 2, S.L.U.	Repsol Renovables, S.A.U.	Spain	Sun power project	F.C.	75.00	100.00	(9)	—
Arco Energía 3, S.L.U.	Repsol Renovables, S.A.U.	Spain	Sun power project	F.C.	75.00	100.00	(9)	—
Arco Energía 4, S.L.U.	Repsol Renovables, S.A.U.	Spain	Sun power project	F.C.	75.00	100.00	(6)	—
Arco Energía 5, S.L.U.	Repsol Renovables, S.A.U.	Spain	Sun power project	F.C.	75.00	100.00	(6)	—
Arcos 400 Renovables, A.I.E. (5)	Arco Energía 1, S.L.U.	Spain	Sun power project	E.M.	36.79	49.05	15	11
Arteche y García, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	F.C.	97.60	100.00	—	—
Autoservicio Sargento, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Installation and operation of service stations	E.M.(J.V.)	48.89	50.00	1	—
Bardahl de México, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	E.M.(J.V.)	39.12	40.00	174	—
Begas Motor, S.L.	Repsol Energy Ventures, S.A.	Spain	Manufacture, transformation and sale of motor vehicles; manufacture of electrical equipment, parts and accessories.	E.M.	17.12	17.12	9	1
Belmont Technology Inc.	Repsol Energy Ventures, S.A.	United States	Software platform and virtual assistance in geoscience and reservoir engineering based on artificial intelligence.	E.M.	12.90	12.90	12	14
Benzirep - Vall, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	F.C.	97.60	100.00	4	—
Boalar Energías, S.L.U	Repsol Renovables, S.A.U.	Spain	Sun power project	F.C.	75.00	100.00	(5)	—
Campsa Estaciones de Servicio, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Operation and management of service stations	F.C.	97.60	100.00	98	8
Carburants i Derivats, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Andorra	Distribution of oil by-products	E.M.	32.45	33.25	3	—
CI Repsol Aviación Colombia, S.A.S.	Repsol Downstream Internacional, S.A.	Colombia	Distribution and sale of oil products	F.C.	97.79	100.00	—	—
Combustibles Sureños, S.A. de C.V.	Repsol Downstream Internacional, S.A.	México	Production and distribution of lubricants	E.M.(J.V.)	48.89	50.00	1	—
Compañía Anónima de Revisiones y Servicios, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Operation and management of service stations	F.C.	92.72	95.00	3	1
Desarrollo Eólico Las Majas VII, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	38.25	51.00	46	—
Desarrollo Eólico Las Majas VIII, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	2	—
Desarrollo Eólico Las Majas XIV, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	2	—
Desarrollo Eólico Las Majas XV, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	3	—
Desarrollo Eólico Las Majas XXVII, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	3	—
Desarrollo Eólico Las Majas XXXI, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	1	—
Desarrollos Eólicos El Saladar, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	2	—
Distribuidora Andalucía Oriental, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Sale of fuel	E.M.(J.V.)	48.80	50.00	2	1

Name	Parent company	Country	Corporate purpose	Method of conso. (1)	December 2022 % Total Group Interest	Control Int. (2)	€ Million Equity (3)	Share Capital (3)
Distribuidora de Petróleos, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Sale of fuel	F.C.	82.96	85.00	—	—
Ekiola Construcción, M&O, S.L.	Repsol Customer Centric, S.L.	Spain	Sale of electricity from renewable or conventional sources	E.M.	47.92	49.00	—	—
Ekiola Energía Comercializadora, S.L.	Repsol Customer Centric, S.L.	Spain	Sale of electricity from renewable or conventional sources	E.M.	49.87	51.00	(1)	—
Ekiola Promoción, SL	Repsol Customer Centric, S.L.	Spain	Administrative development of plants producing electricity from renewable sources	E.M.	47.92	49.00	(2)	—
Endomexicana Renta y Servicios, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	E.M.(J.V.)	39.12	40.00	1	—
Energías Renovables de Cilene, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	2	—
Energías Renovables de Dione, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	(15)	—
Energías Renovables de Gladiateur 18, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	—	—
Energías Renovables de Hidra, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	1	—
Energías Renovables de Kore, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	2	—
Energías Renovables de Lisitea, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	(12)	—
Energías Renovables de Polux, S.L.U,	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	1	—
Energy Express, S.L.	Societat Catalana de Petrolis, S.A.	Spain	Operation and management of service stations	F.C.	92.66	100.00	—	—
Eólica del Taltal, SpA	Repsol Chile, SpA	Chile	Wind power project	E.M.	11.25	15.00	16	15,000,000.0
ERNC LOA, SpA	Repsol Ibereólica Renovables Chile SpA	Chile	Wind power project	E.M.	37.50	100.00	21	—
Estación de Servicio Bahía Asunción, S.A. de C.V.	Repsol Downstream Internacional, S.A.	México	Production and distribution of lubricants	E.M.(J.V.)	48.89	50.00	2	—
Estación de Servicio Barajas, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	F.C.	93.70	96.00	3	1,000,000.0C
Estación de Servicio Montsia, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Installation and operation of service stations	E.M.(J.V.)	48.80	50.00	—	—
Ezzing Renewable Energies S.L.	Repsol Energy Ventures, S.A.	Spain	Development of solar power projects	E.M.	24.03	24.03	9	—
Finboot Ltd.	Repsol Energy Ventures, S.A.	Spain	Blockchain technology for energy, retail and automotive sectors	E.M.	8.54	8.54	7	—
Fuerzas Energéticas del Sur de Europa V, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	38.25	51.00	41	—
Fuerzas Energéticas del Sur de Europa VI, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	38.25	51.00	16	—
Fuerzas Energéticas del Sur de Europa XI, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	38.25	51.00	42	—
Fuerzas Energéticas del Sur de Europa XII, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	38.25	51.00	42	—
Fuerzas Energéticas del Sur de Europa XIII, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	(10)	—
Fuerzas Energéticas del Sur de Europa XIV, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	(7)	—
Fuerzas Energéticas del Sur de Europa XVIII, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	1	—
Fuerzas Energéticas del Sur de Europa XX, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	2	—
Gaolania Servicios, S.L.	Repsol Customer Centric, S.L.	Spain	Sale of electricity	E.M.	68.45	70.00	14	—
Generación Eólica El Vedado, S.L.	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	38.25	51.00	19	—
Generación y Suministro de Energía, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	(9)	—
Gestao e Administraçao de Postos de Abastecimiento Unipessoal, Lda.	Repsol Portuguesa, Lda	Portugal	Sale of oil products	F.C.	97.79	100.00	2	2
Gestión de Puntos de Venta, Gespevesa, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Service stations management	E.M.(J.V.)	48.80	50.00	38	40
Gutsa Servicios, S.A. de C.V.	Repsol Downstream Internacional, S.A.	México	Operation and management of service stations	E.M.(J.V.)	48.89	50.00	—	—

				December 2022				
				%			€ Million	
Name	**Parent company**	**Country**	**Corporate purpose**	**Method of conso. (1)**	**Total Group Interest**	**Control Int. (2)**	**Equity (3)**	**Share Capital (3)**
Hecate Energy Frye Solar LLC (5)	Repsol Renewables Development Company LLC	United States	Development of photovoltaic and battery energy storage projects	F.C.	75.00	100.00	(40)	—
Hecate Energy Group, LLC	Repsol Renewables North America, Inc	United States	Development of photovoltaic and battery energy storage projects	E.M.	30.00	40.00	538	207
Hecate Energy Longhorn Solar LLC (5)	Repsol Renewables Development Company LLC	United States	Development of photovoltaic and battery energy storage projects	F.C.	75.00	100.00	5	5
Hecate Energy Outpost Solar LLC (5)	Repsol Renewables Development Company LLC	United States	Development of photovoltaic and battery energy storage projects	F.C.	75.00	100.00	6	6
Hispánica de Desarrollos Energéticos Sostenibles, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	6	—
Iberen Renovables, S.A.	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	12	4
Ibil, Gestor de Carga de Vehículo Eléctrico, S.A.	Repsol Customer Centric, S.L.	Spain	Electricity power transmission grid	F.C.	48.89	50.00	2	7
Jicarilla Solar 2 LLC	Repsol Renewables Development Holdings Corp	Spain	Electricity power transmission grid	E.M.(J.V.)	75.00	100.00	54	—
Jicarilla Solar 2 Bond Purchaser LLC	Jicarilla Solar 2 LLC	United States	Development of new energy projects	F.C.	75.00	100.00	—	—
Jicarilla Solar 2 Holdings LLC (5)	Jicarilla Solar 2 Class B LLC	United States	Development of new energy projects	F.C.	75.00	100.00	37	35
Jicarilla Solar 2 Class B LLC (5)	Repsol Renewables North America, Inc	United States	Development of new energy projects	F.C.	75.00	100.00	41	41
Jicarilla Solar 1 LLC (5)	Repsol Renewables Development Company LLC	United States	Development of new energy projects	F.C.	75.00	100.00	14	—
Jicarilla Storage 1 LLC (5)	Repsol Renewables Development Company LLC	United States	Development of new energy projects	F.C.	75.00	100.00	7	—
Jicarilla Solar 1 Bond Purchaser LLC (5)	Jicarilla Solar 1 LLC	United States	Development of new energy projects	F.C.	75.00	100.00	—	—
Jicarilla Storage Bond Purchaser LLC (5)	Jicarilla Storage 1 LLC	United States	Development of new energy projects	F.C.	75.00	100.00	—	—
Klikin Deals Spain, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Customer and oil product marketing management	F.C.	97.60	100.00	17	1
LGA Logística Global de Aviação, Lda.	Repsol Portuguesa, Lda	Portugal	Transport of aviation oil products	E.M.	19.56	20.00	—	1
Medusa Alternativas Suministro Eléctrico, S.L. (5)	Repsol Customer Centric, S.L.	Spain	Offer a recharging solution that provides economic savings per power term compared to a conventional installation connected to the distribution network	E.M.	32.60	33.33	—	—
Nanogap Sub n-m Powder, S.A.	Repsol Energy Ventures, S.A.	Spain	Development of nanoparticles and nanofibers for application in materials, energy and biomedicine	E.M.	8.99	8.99	21	—
Natural Power Development, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	2	—
Nesa Vento Galego 1, S.L. (5)	Repsol Renovables, S.A.U.	Spain	Development of 6 wind farms in Pontevedra	F.C.	75.00	100.00	—	—
Nesa Vento Galego 2, S.L. (5)	Repsol Renovables, S.A.U.	Spain	Development of 6 wind farms in Pontevedra	F.C.	75.00	100.00	—	—
Nesa Vento Galego 3, S.L. (5)	Repsol Renovables, S.A.U.	Spain	Development of 6 wind farms in Pontevedra	F.C.	75.00	100.00	—	—
Net Zero Ventures, S.L. (5)	Repsol Energy Ventures, S.A.	Spain	Investment advice to the manager of the two Venture Capital Entities	E.M.	50.00	50.00	1	—
Nudo Manzanares 220 KV, A.I.E.	Tramperase, S.L.	Spain	Electricity evacuation network	E.M.	10.56	27.60	46,000,00	—
OGCI Climate Investments LLP	Repsol Energy Ventures, S.A.	United Kingdom	Technology development	E.M.	9.09	9.09	389,000,00	507,000,000
Palmira Market, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Grocery stores and shops	E.M.(J.V.)	48.89	50.00	1,000,000.	—
Parque Eólico Antofagasta, SpA	Eólica del Taltal, SpA	Chile	Wind power project	E.M.	11.25	100.00	85	—
Parque Eólico Atacama SPA	Repsol Ibereólica Renovables Chile SpA	Chile	Wind power project	E.M.	37.50	100.00	96	58
PE Cabo Leones III SpA	Repsol Ibereólica Renovables Chile SpA	Chile	Wind power project	E.M.	37.50	100.00	64	10

Name	Parent company	Country	Corporate purpose	Method of conso. (1)	December 2022 % Total Group Interest	Control Int. (2)	€ Million Equity (3)	Share Capital (3)
Perseo Biotechnology S.L.U.	Repsol Energy Ventures, S.A.	Spain	Manufacture, distribution and sale of biofuels	E.M.	24.99	24.99	5	7
PT Pacific Lubritama Indonesia	United Oil Company Pte Ltd	Indonesia	Production and sale of lubricants	E.M.	37.16	95.00	25	8
Recreus Industries, S.L.	Repsol Energy Ventures, S.A.	Spain	Distribution and sale of oil products	E.M.	16.67	16.67	4	—
Régsiti Comercializadora Regulada, S.L.U.	Repsol Comercializadora de Electricidad y Gas, S.L.U.	Spain	Sale of electricity	F.C.	97.79	100.00	9	1
Renovacyl, S.A.	Iberen Renovables, S.A.	Spain	Wind power project	F.C.	75.00	100.00	4	1
Repsol Butano, S.A.	Repsol Customer Centric, S.L.	Spain	Sale of LGP	F.C.	97.79	100.00	903	59
Repsol Chile SpA	Repsol Renovables, S.A.U.	Chile	Portfolio company	F.C.	75.00	100.00	92	94
Repsol Comercial de Productos Petrolíferos, S.A.	Repsol Customer Centric, S.L.	Spain	Sale of oil products	F.C.	97.60	99.79	2,890	335
Repsol Comercializadora de Electricidad y Gas, S.L.U.	Repsol Customer Centric, S.L.	Spain	Sale of electricity	F.C.	97.79	100.00	204	1
Repsol Customer Centric, S.L. (17)	Repsol, S.A.	Spain	Portfolio company	F.C.	97.79	100.00	3,639	—
Repsol Directo, Lda.	Repsol Portuguesa, Lda	Portugal	Distribution and sale of oil products	F.C.	97.79	100.00	2	2
Repsol Directo, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Distribution and sale of oil products	F.C.	97.60	100.00	(1)	—
Repsol Downstream Internacional, S.A.	Repsol Customer Centric, S.L.	Spain	Portfolio company	F.C.	97.79	100.00	413	—
Repsol Downstream México, S.A. de C.V	Repsol Downstream Internacional, S.A.	Mexico	Production and distribution of lubricants	F.C.	97.79	100.00	15	121
Repsol Energy Ventures, S.A.	Repsol Technology and Ventures, S.L.U	Spain	Development of new energy projects	F.C.	100.00	100.00	26	3
Repsol Financiera Renovables, S.A. (5)	Repsol Renovables, S.A.U.	Spain	Finance company for the Renewables and GBC perimeter	F.C.	75.00	100.00	14	15
Repsol Gas Portugal, Unipessoal, Lda.	Repsol Butano, S.A.	Portugal	Sale of LGP	F.C.	97.79	100.00	139	3
Repsol Generación de Ciclos Combinados, S.L.U.	Repsol, S.A.	Spain	Generation and commercialization of electrical energy	F.C.	100.00	100.00	139	8
Repsol Generación Eléctrica, S.A.	Repsol Renovables, S.A.U.	Spain	Generation and commercialization of electrical energy	F.C.	75.00	100.00	749	468
Repsol Ibereólica Renovables Chile SpA	Repsol Chile, SpA	Chile	Wind power project	E.M.	37.50	50.00	234	230
Repsol Lubricantes y Especialidades, S.A.	Repsol Customer Centric, S.L.	Spain	Distribution and sale of oil products	F.C.	97.79	100.00	754	5
Repsol Lubrificantes e Especialidades Brasil Participaçoes, Ltda.	Repsol Downstream Internacional, S.A.	Brazil	Production and sale of lubricants	F.C.	97.79	100.00	4	8
Repsol Mar de Cortés Estaciones de Servicio, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Production and sale of lubricants	E.M.(J.V.)	48.89	50.00	(1)	—
Repsol Mar de Cortés, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Production and sale of lubricants	E.M.(J.V.)	48.89	50.00	19	1
Repsol Marketing France, S.A.S.U.	Repsol Downstream Internacional, S.A.	France	Sale of oil products	F.C.	97.79	100.00	—	—
Repsol Nughedu S.R.L. (5)	Repsol Renovables, S.A.U.	Italy	Wind power project	F.C.	75.00	100.00	1	1
Repsol Portuguesa, Lda.	Repsol Downstream Internacional, S.A.	Portugal	Distribution and sale of oil products	F.C.	97.79	100.00	288	68
Repsol Renewables Development Company LLC	Repsol Renewables North America, Inc	United States	Development of new energy projects	F.C.	75.00	100.00	5	5
Repsol Renewables Development Holdings Corp	Repsol Renewables North America, Inc	United States	Development of new energy projects	F.C.	75.00	100.00	—	—
Repsol Renewables Italia S.R.L. (5)	Repsol Renovables, S.A.U.	Italy	Analysis and search for opportunities in, as well as initial development of, greenfield projects	F.C.	75.00	100.00	4	4
Repsol Renewables North America, Inc	Repsol Renovables, S.A.U.	United States	Development of new energy projects	F.C.	75.00	100.00	482	—
Repsol Renovables, S.A.U. (16)	Repsol, S.A.	Spain	Development of new energy projects	F.C.	75.00	75.00	964	200
Repsol San Mauro S.R.L. (5)	Repsol Renovables, S.A.U.	Italy	Wind power project	F.C.	75.00	100.00	—	—

					December 2022			
					%		€ Million	
Name	Parent company	Country	Corporate purpose	Method of conso. [1]	Total Group Interest	Control Int. [2]	Equity [3]	Share Capital [3]
Repsol Services México, S.A. de C.V.	Repsol Downstream Internacional, S.A.	Mexico	Hydrocarbon exploration and production	F.C.	97.79	100.00	4	2
Repsol Servicios Renovables, S.A.	Repsol Renovables, S.A.U.	Spain	Development of new energy projects	F.C.	75.00	100.00	22	2
Repsol Uta S.R.L. [5]	Repsol Renovables, S.A.U.	Italy	Sun power project	F.C.	75.00	100.00	1	1
Repsol Venosa S.R.L. [5]	Repsol Renovables, S.A.U.	Italy	Wind power project	F.C.	75.00	100.00	1	1
Rocsole OY	Repsol Energy Ventures, S.A.	Finland	Technology development	E.M.	15.34	15.34	9	—
Servicios Logísticos de Combustibles de Aviación, S.L	Repsol Lubricantes y Especialidades, S.A.	Spain	Transport of aviation oil products	E.M.(J.V.)	48.85	50.00	12	4
Smarkia Energy, S.L. [5]	Repsol Energy Ventures, S.A.	Spain	Provision of energy efficiency services on a Cloud platform	E.M.	33.51	33.51	5	—
Sociedade Abastecedora de Aeronaves, Ltda.	Repsol Portuguesa, Lda	Portugal	Sale of oil products	E.M.	24.45	25.00	—	—
Societat Catalana de Petrolis, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Sale and distribution of oil products	F.C.	92.66	94.94	5	6
Solar Antofagasta SpA	Repsol Ibereólica Renovables Chile SpA	Chile	Wind power project	E.M.	37.50	100.00	55	—
Solar Elena SpA	Repsol Ibereólica Renovables Chile SpA	Chile	Wind power project		37.50	100.00	58	—
Solar Fotovoltaica Villena, S.L.	Repsol Renovables, S.A.U.	Spain	Photovoltaic project development	F.C.	75.00	100.00	1	—
Solar 360 de Repsol y Movistar, S.L. [5]	Repsol Customer Centric, S.L.	Spain	Development and marketing of photovoltaic self-consumption products and/or services	E.M.(J.V.)	48.89	50.00	(2)	—
Solar 360 Soluciones de Instalación y Mantenimiento, S.L. [5]	Repsol Customer Centric, S.L.	Spain	Marketing, management and provision of services related to photovoltaic self-consumption equipment	E.M.	47.92	49.00	2	—
Solgas Distribuidora de Gas, S.L.	Repsol Butano, S.A.	Spain	Sale of LGP	F.C.	97.79	100.00	1	1
Solred, S.A.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Management of means of payment at gas stations	F.C.	97.60	100.00	66	26
Soluciones Tecnológicas de Energías Verdes, S.L.U	Repsol Renovables, S.A.U.	Spain	Wind power project	F.C.	75.00	100.00	3	—
Terminales Canarios, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Storage and distribution of oil products	E.M.(J.V.)	48.80	50.00	23	20
Tramperase, S.L.	Repsol Renovables, S.A.U.	Spain	Photovoltaic project development	F.C.	38.25	51.00	17	—
United Oil Company Pte Ltd	Repsol Downstream Internacional, S.A.	Singapore	Production and distribution of lubricants	E.M.	39.12	40.00	105	10
Valdesolar Hive, S.L.	Repsol Renovables, S.A.U.	Spain	Development of 6 wind farms in Pontevedra	F.C.	38.25	51.00	55	—
Vento Continuo Galego, S.L.U. [5]	Repsol Renovables, S.A.U.	Spain	Development of 6 wind farms in Pontevedra	F.C.	75.00	100.00	—	—
WIB Advance Mobility, S.L.	Repsol Comercial de Productos Petrolíferos, S.A.	Spain	Shared vehicle rental in the city	E.M.(J.V.)	48.80	50.00	3	—
CORPORATION								
Albatros, S.A.R.L.	Repsol, S.A.	Luxembourg	Portfolio company	E.M.	100.00	100.00	6,949	—
FEHI Holding, S.a.r.l.	Repsol Exploración, S.A.	Luxembourg	Portfolio company	E.M.	100.00	100.00	3,521	209
Gaviota RE, S.A. [7]	Albatros, S.À.R.L.	Luxembourg	Insurance and reinsurance.	E.M.	100.00	100.00	480	1
Greenstone Assurance, Ltd.	Gaviota RE, S.A.	Bermudas	Insurance and reinsurance [11]	E.M.	100.00	100.00	2	34
Repsol Exploration Advanced Services, A.G.	Repsol Exploración, S.A.	Switzerland	Company providing human resources services	E.M.	100.00	100.00	1	1
Repsol Europe Finance S.A.R.L.	Albatros, S.À.R.L.	Luxembourg	Financial services and holding company	E.M.	100.00	100.00	6,722	4,346
Repsol Finance Brasil S.A.R.L.	Repsol Exploração Brasil Ltda.	Luxembourg	Financial services and holding company	E.M.	100.00	100.00	1,062	—
Repsol Gestión de Divisa, S.L.	Repsol, S.A.	Spain	Financial services	E.M.	99.98	100.00	116	—

					December 2022			
					%		€ Million	
Name	Parent company	Country	Corporate purpose	Method of conso. [1]	Total Group Interest	Control Int. [2]	Equity [3]	Share Capital [3]
Repsol International Finance, B.V.	Repsol, S.A.	Netherlands	Financial and holding of shares	E.M.	100.00	100.00	2,867	301
Repsol Technology and Ventures, S.L.U	Repsol, S.A.	Spain	Shared services company	F.C.	100.00	100.00	31	—
Repsol Tesorería y Gestión Financiera, S.A.	Repsol, S.A.	Spain	Financial services	F.C.	100.00	100.00	273	—
Sunrgyze, S.L. [18]	Repsol Energy Ventures, S.A.	Spain	Development and scale-up of artificial photosynthesis technology for hydrogen production	E.M.	50.00	50.00	2	—
Talisman International (Luxembourg), S.a.r.l.	Repsol Oil & Gas Canada, Inc.	Luxembourg	Portfolio company	F.C.	100.00	100.00	501	72
Talisman International Holdings, B.V.	Repsol Exploración, S.A.	Netherlands	Portfolio company	F.C.	100.00	100.00	283	685
Trovant Technology S.L. [5]	Repsol Energy Ventures, S.A.	Spain	Consulting, advice and training in the field of biotechnology with environmental applications. Research and development activities related to the application and scaling of environmental biotechnology.	E.M.	9.81	9.81	—	—

(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, prior to the adjustments related thereto. 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 euros has been rounded down to zero).
(4) Interests in joint operations (see Appendix IIB) 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 2022 (see Appendix IIC).
(6) Company in the process of liquidation.
(7) This company holds a non-controlling interest in Oil Insurance, Ltd (5.17%), domiciled in Bermudas.
(8) This company, legally incorporated in the Bahamas, is registered for tax purposes in the United Kingdom.
(9) This company, legally incorporated in the British Virgin Islands, is registered for tax purposes in the United Kingdom.
(10) This company is the parent company for Repsol Groundbirch Partnership, registered in the United States.
(11) Inactive company.
(12) This company, legally incorporated in Barbados, is registered for tax purposes in the Netherlands.
(13) The figures on Share Capital and Equity relate to 2021.
(14) The equity corresponds to the value of the consolidated subgroup.
(15) Equity value included in its parent company.
(16) This company, formerly known as Repsol Renovables, S.L.U., changed its company name in February 2022.
(17) This company, formerly known as Repsol Customer Centric, S.L.U., changed its company name in February 2022.
(18) This company, formerly known as SUN2HY, S.L., changed its company name in August 2022.
(19) This company, formerly known as Repsol Trading USA Corporation, changed its company name in September 2022.
(20) The parent company of this company, formerly known as Repsol Ecuador, S.A., changed its company name in January 2022.
(21) The parent company of this company, formerly known as Repsol Exploraçao Brasil Ltda., changed its company name in July 2022.
(22) The parent company of this company was formerly Repsol Exploración, S.A.
(23) The parent company of this company, formerly known as Repsol Oil & Gas Canada, Inc., changed its company name in October 2022.
(24) The parent company of this company was formerly Repsol International Finance B.V.
(25) The parent company of this company, formerly known as Repsol USA Holdings LLC., changed its company name in October 2022.
(26) This company, formerly known as Repsol Groundbirch Partnership., changed its company name in October 2022.
(27) The parent company of this company, formerly known as Repsol Saint John LNG, S.L., changed its company name in October 2022.
(28) This company, formerly known as Repsol Hidrógeno, S.A.., changed its company name in December 2022.
(29) The parent company of this company, formerly known as Repsol, S.A., changed its company name in December 2022.
(30) The parent company of this company, formerly known as Petróleos del Norte, S.A., changed its company name in December 2022.
(31) The parent company of this company, formerly known as Talisman Colombia Holdco Ltd., changed its company name in December 2022.
(32) The parent company of this company was previously Repsol Upstream B.V., changed its company name in December 2022.

Appendix IIB: Joint operations of the Repsol Group at December 31, 2022

The Repsol Group's main Joint Operations (see Note 3.4) are shown below (including those in which the Group is involved through a joint arrangement)[56]:

Name	Interest (1)	Operator	Activity
UPSTREAM			
Algeria			
Bloque 405a	35.00%	Pertamina	Development/Production
Reggane Nord	29.25%	Groupement Reggane Nord	Development/Production
Australia			
JPDA 06-105 PSC	25.00%	ENI	Development/Production
Bolivia			
Arroyo Negro	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 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
La Peña-Tundy	48.33%	YPF B Andina, S.A	Development/Production
Los Penocos	48.33%	YPF B Andina, S.A	Development/Production
Los Sauces	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
Patuju	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
Sirari	48.33%	YPF B Andina, S.A	Development/Production
Vibora	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 (2)	Development/Production
BM-C-33 (C-M-539)	21.00%	Equinor	Development/Production
BM-S-50 (S-M-623) Sagitario	12.00%	Petrobras	Exploration
BM-S-9 Concesion 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	50.00%	Repsol	Exploration
C-M-823	50.00%	Repsol	Exploration
C-M-825	60.00%	Repsol	Exploration
C-M-845	50.00%	Chevron	Exploration
S-M-764	50.00%	Chevron	Exploration
S-M-766	50.00%	Chevron	Exploration
Canada (3)			
Edson	77.94%	Repsol	Development/Production
Groundbirch No Montney Rights	35.19%	Others	Development/Production
Misc. Alberta	54.51%	Repsol	Exploration
Misc. British Columbia	75.00%	Repsol	Exploration
Misc. Saskatchewan	86.84%	Repsol	Exploration
Northwest Territories	4.24%	Others	Exploration

[56] Joint operations in the Upstream segment include the blocks of joint operations where the Group holds acreage for exploration,and production of oil and gas.

Name	Interest [1]	Operator	Activity
Nunavut	1.91%	Others	Exploration
Wild River Region	52.06%	Repsol	Development/Production
Yukon	1.05%	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%	Ecopetrol	Exploration
Chipirón	8.75%	SierraCol	Development/Production
COL-4	50.01%	Repsol	Exploration
CPE-8	50.00%	Repsol	Exploration
CPO-9 - Exploration Area	45.00%	Ecopetrol	Exploration
Cravo Norte	5.63%	SierraCol	Development/Production
Mundo Nuevo	30.00%	Equion	Exploration
Cosecha	17.50%	SierraCol	Development/Production
Rondón	6.25%	SierraCol	Development/Production
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
Barracuda	60.21%	Repsol	Development/Production
United States [2]			
<u>*Alaska*</u>			
Horseshoe Unit	49.00%	Santos	Exploration
Pikka Unit	49.00%	Santos	Development/Production
Quokka	49.00%	Santos	Exploration
Alignment Agreement Area	49.00%	Santos	Exploration
<u>*Golfo de México*</u>			
Blacktip North	25.00%	Shell	Exploration
Blacktip North - AC 335	25.00%	Shell	Exploration
Abilene	20.00%	Shell	Exploration
Stingray	20.00%	Shell	Exploration
Blacktip	25.00%	Shell	Exploration
Bobcat	25.00%	Shell	Exploration
Lucille	25.00%	Shell	Exploration
Shenzy Unit	28.00%	Woodside	Development/Production
Leon Unit	50.00%	Llog	Development/Production
Buckskin Unit	22.50%	Llog	Development/Production
Buckskin North	22.50%	Llog	Exploration
Moccasin North	50.00%	Llog	Exploration
Noel	50.00%	Llog	Exploration
Buckshot	50.00%	Llog	Exploration
Castile	35.63%	Llog	Development/Production
Monument	20.00%	Equinor	Exploration
Mollerusa	20.00%	Equinor	Exploration
Green Canyon 608	28.00%	BHP	Development/Production
<u>*Eagle Ford*</u>			
Eagle Ford Texas	91.77%	Repsol	Development/Production
<u>*Marcellus*</u>			
Marcellus New York (*) Exploración Unconventional	99.71%	Repsol	Exploration
Marcellus New York	86.19%	Repsol	Development/Production
Marcellus Pennsylvania	84.71%	Repsol	Development/Production

Name	Interest (1)	Operator	Activity
Guyana			
Kanuku	37.50%	Repsol	Exploration
Indonesia			
Andaman III	51.00%	Repsol	Exploration
Corridor PSC	36.00%	Conoco	Development/Production
Aru	60.00%	Repsol	Exploration
South Sakakemang	80.00%	Repsol	Exploration
Sakakemang	45.00%	Repsol	Exploration
South East Jambi	40.00%	Repsol	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
Mexico			
Bloque 10	40.00%	Repsol	Exploration
Bloque 14	50.00%	Repsol	Exploration
Bloque 29	30.00%	Repsol	Exploration
Norway			
PL 019 G	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 092	7.65%	Equinor	Development/Production
PL 120	11.00%	Equinor	Development/Production
PL 120 CS	11.00%	Equinor	Development/Production
PL 121	7.65%	Equinor	Development/Production
PL 187	15.00%	Equinor	Development/Production
PL 316	55.00%	Repsol	Development/Production
PL 316B	55.00%	Repsol	Development/Production
PL 976	30.00%	Aker BP	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
Reino Unido			
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
P073 (30/18_W)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P079 (30/13a - Contract Area C East)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P101 (13/24a Blake)	34.53%	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 inc. Fulmar field)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P185 (30/11b)	30.60%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P185 (30/12b inc. Halley field)	30.60%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P201 (16/21a)	7.65%	Premier	Development/Production
P201 (16/21d)	7.65%	Premier	Development/Production
P219 (16/13a)	19.47%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P220 (15/17n-F2- Piper+ rest of Block)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production

Name	Interest [1]	Operator	Activity
P225 (16/27a- Contract Area 3 Andrew Field Area)	5.03%	BP	Development/Production
P225 (16/27a- Contract Area 3)	13.50%	JX Nippon	Exploration
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- Cretaceus 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)	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 (14/19a)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P250 (14/19s- F1)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P250 (14/19s- Rest of Block)_Develop	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P255 (30/14 Flyndre Area)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P256 (30/16s)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P263 (14/18a) Scapa Field Area	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P263 (14/18a) Rest of Block	51.00%	Repsol Sinopec Resources UK, Ltd.	Exploration
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 Auk field area)	51.00%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P297 (13/28a Ross)	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P297 (13/28a)	33.02%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P307 (13/29a Ross)	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P307 (13/29a)	36.55%	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)	51.00%	Repsol Sinopec Resources UK, Ltd.	Exploration
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 (16/21b_F1*-Balmoral Field Area)	8.06%	Premier	Development/Production
P344 (16/21c*- Rest of block excluding Stirling)	30.60%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P344 (16/21c_f1*)	7.81%	Premier	Development/Production
P344 (16/21c_f1*-Balmoral)	8.06%	Premier	Development/Production
P534 (98/06a-Wareham)	2.55%	Perenco	Development/Production
P534 (98/06a-Wych Farm UOA)	2.53%	Perenco	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
P729 (13/29b - Ross Field Area)	40.80%	Repsol Sinopec Resources UK, Ltd.	Exploration
P810 (13/24b Blake Area)	34.53%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P810 (13/24b North)	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P973 (13/28c)	35.28%	Repsol Sinopec Resources UK, Ltd.	Development/Production
P983 (13/23b)	25.50%	Repsol Sinopec Resources UK, Ltd.	Exploration
PL089 (SZ/8, SY/88b, SY/98a)	2.55%	Perenco	Development/Production
Trinidad y Tobago			
5B Manakin	30.00%	BP	Development/Production
East Block	30.00%	BP	Development/Production
S.E.C.C. Ibis	10.80%	EOG	Development/Production
West Block	30.00%	BP	Development/Production
Venezuela			
Barua Motatán	40.00%	Petroquiriquire	Development/Production
Carabobo	11.00%	Petrocarabobo	Development/Production

Name	Interest [1]	Operator	Activity
Cardón IV	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%	Ypergas	Development/Production
Yucal Placer Sur	15.00%	Ypergas	Development/Production
DOWNSTREAM			
Spain			
Asfaltos Españoles, S.A.	50.00%	Repsol	Asphalts
Iberian Lube Base Oils Company, S.A.	30.00%	SK Lubricants	Lubricants and specialized products
Remolcadores Portuarios de Tarragona, S.L.	38.00%	Remolques y Navegación, S.A.	Maritime services

(1) Corresponds to the Group company's interest in the joint arrangement.
(2) On January 26, 2023, the PetroRio company bought the Petrobras stake, replacing it as operator of Albacora Leste.
(3) 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.

Appendix IIC: Main changes in the perimeter of the Group in 2022

For the year ended December 31, 2022

a) Business combinations, other acquisitions and acquisitions of interest in subsidiaries, joint ventures and/or associates:

Name	Country	Parent company	Item	Date	Method of consolidation [1]	% voting rights acquired	% total voting rights in entity following acquisition [2]
Repsol Shale Oil & Gas LLC	United States	Repsol E&P USA Holdings Inc	Incorporation	January 2022	F.C.	100.00 %	100.00 %
Jicarilla Solar 2 Holdings LLC	United States	Jicarilla Solar 2 Class B LLC	Incorporation	February 2022	F.C.	100.00 %	100.00 %
Jicarilla Solar 2 Class B LLC	United States	Repsol Renewables North America, Inc	Incorporation	February 2022	F.C.	100.00 %	100.00 %
Medusa Alternativas Suministro Eléctrico, S.L.	Spain	Repsol Customer Centric, S.L. [3]	Acquisition	February 2022	E.M.	33.00 %	33.00 %
Jicarilla Solar 1 LLC	United States	Repsol Renewables Development Company LLC	Acquisition	March 2022	F.C.	100.00 %	100.00 %
Jicarilla Storage 1 LLC	United States	Repsol Renewables Development Company LLC	Acquisition	March 2022	F.C.	100.00 %	100.00 %
Jicarilla Solar 1 Bond Purchaser LLC	United States	Jicarilla Solar 1 LLC	Acquisition	March 2022	F.C.	100.00 %	100.00 %
Jicarilla Storage Bond Purchaser LLC	United States	Jicarilla Storage 1 LLC	Acquisition	March 2022	F.C.	100.00 %	100.00 %
Enerkem Inc.	Canada	Repsol Química, S.A.	Acquisition	March 2022	E.M.	14.21 %	14.21 %
Hecate Energy Frye Solar LLC	United States	Repsol Renewables Development Company LLC	Acquisition	April 2022	F.C.	100.00 %	100.00 %
Repsol Renewables Italia S.R.L.	Italy	Repsol Renovables, S.A.U. [4]	Incorporation	May 2022	F.C.	100.00 %	100.00 %
Repsol Nughedu S.R.L.	Italy	Repsol Renovables, S.A.U. [4]	Incorporation	May 2022	F.C.	100.00 %	100.00 %
Repsol Uta S.R.L.	Italy	Repsol Renovables, S.A.U. [4]	Incorporation	May 2022	F.C.	100.00 %	100.00 %
Repsol Venosa S.R.L.	Italy	Repsol Renovables, S.A.U. [4]	Incorporation	May 2022	F.C.	100.00 %	100.00 %
Repsol San Mauro S.R.L.	Italy	Repsol Renovables, S.A.U. [4]	Incorporation	May 2022	F.C.	100.00 %	100.00 %
Repsol Salamanca Midstream, LLC	United States	Repsol Oil & Gas Gulf of México, LLC	Incorporation	May 2022	F.C.	100.00 %	100.00 %
Salamanca Infrastructure, LLC	United States	Repsol Salamanca Midstream, LLC	Incorporation	May 2022	E.M.	22.50 %	22.50 %
Basque Hydrogen, S.L	Spain	Alba Emission free Energy, SA	Incorporation	May 2022	F.C.	100.00 %	100.00 %
Repsol Financiera Renovables, S.A	Spain	Repsol Renovables, S.A.U. [4]	Incorporation	May 2022	F.C.	100.00 %	100.00 %
Ampere Power Energy S.L.	Spain	Repsol Energy Ventures, S.A.	Shareholding increase	May 2022	E.M.	0.46 %	7.10 %
Arcos 400 Renovables, A.I.E.	Spain	Arco Energía 1, S.L.U.	Acquisition	June 2022	E.M.	49.05 %	49.05 %
Nesa Vento Galego 1, S.L.	Spain	Repsol Renovables, S.A.U. [4]	Acquisition	June 2022	F.C.	100.00 %	100.00 %
Nesa Vento Galego 2, S.L.	Spain	Repsol Renovables, S.A.U. [4]	Acquisition	June 2022	F.C.	100.00 %	100.00 %
Nesa Vento Galego 3, S.L.	Spain	Repsol Renovables, S.A.U. [4]	Acquisition	June 2022	F.C.	100.00 %	100.00 %
Solar 360 de Repsol y Movistar, S.L.	Spain	Repsol Customer Centric, S.L. [3]	Acquisition	June 2022	E.M. (J.V.)	50.00 %	50.00 %
Solar 360 Soluciones de Instalación y Mantenimiento, S.L.	Spain	Repsol Customer Centric, S.L. [3]	Acquisition	June 2022	E.M.	49.00 %	49.00 %
Vento Continuo Galego, S.L.U.	Spain	Repsol Renovables, S.A.U. [4]	Acquisition	June 2022	F.C.	100.00 %	100.00 %
Cartagena Hydrogen Network, S.L.	Spain	Repsol Industrial Transformation, S.L	Incorporation	June 2022	F.C.	100.00 %	100.00 %
Tarragona Hydrogen Network, S.L.	Spain	Repsol Industrial Transformation, S.L	Incorporation	June 2022	F.C.	100.00 %	100.00 %
Net Zero Ventures, S.L.	Spain	Repsol Energy Ventures, S.A.	Incorporation	August 2022	F.C.	100.00 %	100.00 %
Repsol Lux E&P S.a.r.l.	Luxembourg	Repsol, S.A.	Incorporation	August 2022	F.C.	100.00 %	100.00 %
Smarkia Energy, S.L.	Spain	Repsol Energy Ventures, S.A.	Incorporation	August 2022	E.M.	33.51 %	33.51 %
Bay of Biscay Hydrogen, S.L.	Spain	Alba Emission free Energy, SA	Incorporation	September 2022	F.C.	100.00 %	100.00 %

Name	Country	Parent company	Item	Date	Method of consolidation (1)	% voting rights acquired	% total voting rights in entity following acquisition (2)
Acteco Productos y Servicios, S.L.	Spain	Repsol Química, S.A.	Acquisition	October 2022	E.M. (J.V.)	27.00 %	27.00 %
Hecate Energy Longhorn Solar LLC	United States	Repsol Renewables Development Company LLC	Acquisition	October 2022	F.C.	100.00 %	100.00 %
Hecate Energy Outpost Solar LLC	United States	Repsol Renewables Development Company LLC	Acquisition	October 2022	F.C.	100.00 %	100.00 %
Remolcadores Portuarios de Tarragona, S.L.	Spain	Compañía Auxiliar de Remolcadores y Buques Especiales, S.A.	Acquisition	October 2022	P.I.	38.00 %	38.00 %
Hecate Energy Longhorn Solar LLC	United States	Repsol Renewables Development Company LLC	Acquisition	November 2022	F.C.	100.00 %	100.00 %
Nanogap Sub n-m Powder, S.A.	Spain	Repsol Energy Ventures, S.A.	Shareholding increase	November 2022	E.M.	4.00 %	899.00 %
Ampere Power Energy, S.L.	Spain	Repsol Energy Ventures, S.A.	Shareholding increase	November 2022	E.M.	75.00 %	733.00 %
Ecoplanta Molecular Recycling Solutions, SL	Spain	Repsol Industrial Transformation, S.L	Shareholding increase	November 2022	F.C.	39.00 %	78.00 %
Trovant Technology S.L.	Spain	Repsol Energy Ventures, S.A.	Acquisition	December 2022	E.M.	9.81 %	9.81 %
Tucan LNG S.à r.l.	Italy	Repsol Industrial Transformation, S.L	Incorporation	December 2022	F.C.	100.00 %	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.

b) Reduction in interest in subsidiaries, joint ventures, and/or associates and other similar transactions:

					2022		
Name	**Country**	**Parent company**	**Item**	**Date**	**Method of consolidation** [(1)]	**% voting rights disposed or derecognized**	**% total voting rights in entity following disposal**
Nanogap Sub N-M Powder	Spain	Repsol Energy Ventures S.A.	Shareholding reduction	January 2022	E.M.	2.67 %	9.85 %
Repsol Oil & Gas Malaysia (PM3), Ltd.	Barbados	Fortuna International Petroleum Corporation	Disposal	January 2022	F.C.	100.00 %	— %
Repsol Oil & Gas Malaysia, Ltd.	Barbados	Fortuna International Petroleum Corporation	Disposal	January 2022	F.C.	100.00 %	— %
Fortuna International Petroleum Corporation	Barbados	Repsol Exploración, S.A.	Disposal	January 2022	F.C.	100.00 %	— %
Talisman Vietnam, Ltd.	Barbados	Fortuna International Petroleum Corporation	Disposal	January 2022	F.C.	100.00 %	— %
Repsol Ecuador, S.A.	Spain	Repsol Exploración, S.A.	Disposal	January 2022	F.C.	98.36 %	— %
JSC Eurotek - Yugra	Russia	Repsol Exploración Karabashsky, B.V.	Disposal	January 2022	E.M. (J.V.)	67.40 %	— %
ASB GEO	Russia	Repsol Exploración, S.A.	Disposal	February 2022	E.M. (J.V.)	50.01 %	— %
Valdesolar Hive, S.L.	Spain	Repsol Renovables, S.A.U.	Shareholding reduction	March 2022	F.C.	49.00 %	51.00 %
Nanogap Therapeutics, S.L.U.	Spain	Nanogap Sub n-m Powder, S.A.	Shareholding reduction	May 2022	E.M.	36.77 %	63.23 %
Sorbwater Technology A.S	Norway	Repsol Energy Ventures, S.A.	Disposal	May 2022	E.M.	30.78 %	— %
Talisman (Sumatra), Ltd.	Canada	Repsol Oil & Gas Canada, Inc.	Winding-up	May 2022	F.C.	100.00 %	— %
Begas Motor, S.L.	Spain	Repsol Energy Ventures S.A.	Shareholding reduction	June 2022	E.M.	1.79 %	17.12 %
Gestión Activa de Pedidos S.L.	Spain	Repsol Comercial de Productos Petrolíferos, S.A.	Disposal	July 2022	F.C.	100.00 %	— %
Ezzing Renewable Energies S.L.	Spain	Repsol Energy Ventures, S.A.	Shareholding reduction	August 2022	E.M.	0.29 %	24.03 %
Basque Hydrogen, S.L	Spain	Alba Emission free Energy, SA	Shareholding reduction	August 2022	E.M. (J.V.) [(2)]	49.00 %	51.00 %
Nanogap Sub n-m Powder, S.A.	Spain	Repsol Energy Ventures, S.A.	Shareholding reduction	August 2022	E.M.	0.90 %	8.95 %
Tramperase, S.L.	Spain	Repsol Renovables, S.A.U.	Shareholding reduction	August 2022	F.C.	49.00 %	51.00 %
Net Zero Ventures, S.L.	Spain	Repsol Energy Ventures, S.A.	Shareholding reduction	September 2022	E.M. [(2)]	50.00 %	50.00 %
Repsol Renovables, S.A.U	Spain	Repsol, S.A.	Shareholding reduction	September 2022	F.C.	25.00 %	75.00 %
Enerkem Inc.	Canada	Repsol Química, S.A.	Shareholding reduction	November 2022	E.M.	0.01 %	14.20 %
Caiageste - Gestão de Areas de Serviço, Ltda.	Portugal	GESPOST	Winding-up	December 2022	E.M.	50 %	— %
Talisman Vietnam 07/03, B.V.	Netherlands	Repsol Greece Ionian, S.L.	Winding-up	December 2022	F.C.	100 %	— %
Talisman Vietnam 135-136, B.V.	Vietnam	Repsol Greece Ionian, S.L.	Winding-up	December 2022	F.C.	100 %	— %

[(1)] Method of consolidation:
F.C.: Full consolidation
E.M.: Equity method. Joint Ventures are identified as "JV".
[(2)] This company consolidated by global integration prior to the decrease in ownership.

For the year ended December 31, 2021

a) Business combinations, other acquisitions and acquisitions of interest in subsidiaries, joint ventures and/or associates:

Name	Country	Parent company	Item	Date	2021 Method of consolidation [1]	2021 % voting rights acquired	2021 % total voting rights in entity following acquisition [2]
Finboot Ltd.	United States	Repsol Energy Ventures, S.A.	Shareholding increase	February 2021	E.M.	0.28 %	8.69 %
Ekiola Promoción, SL	United States	Repsol Customer Centric, S.L.U	Acquisition	March 2021	E.M.	49.00 %	49.00 %
Ekiola Construcción, M&O, S.L.	United States	Repsol Customer Centric, S.L.U	Acquisition	March 2021	E.M.	49.00 %	49.00 %
Ekiola Energía Comercializadora, S.L.	España	Repsol Customer Centric, S.L.U	Acquisition	March 2021	E.M.	51.00 %	51.00 %
Gaolania Servicios, S.L.	United States	Repsol Customer Centric, S.L.U	Acquisition	March 2021	E.M.	70.00 %	70.00 %
SUN2HY , S.L.	United States	Repsol Energy Ventures S.A.	Acquisition	April 2021	E.M.	50.00 %	50.00 %
Rocsole OY	United States	Repsol Energy Ventures S.A.	Shareholding increase	May 2021	E.M.	2.70 %	16.70 %
Repsol Renewables North America, Inc	United States	Repsol Renovables, S.L.U	Incorporation	May 2021	F.C.	100.00 %	100.00 %
Repsol Finance Brasil B.V.	Canadá	Repsol Exploração Brasil Ltda.	Incorporation	June 2021	F.C.	100.00 %	100.00 %
Hecate Energy Group, LLC	United States	Repsol Renewables North America, Inc	Acquisition	June 2021	E.M.	40.00 %	40.00 %
Repsol Generación de Ciclos Combinados, S.L.U.	Italia	Repsol Renovables, S.L.U	Incorporation	July 2021	F.C.	100.00 %	100.00 %
Ecoplanta Molecular Recycling Solutions, SL	Italia	Repsol Industrial Transformation, S.L.	Acquisition	July 2021	E.M.	39.00 %	39,0%
Belmont Technology Inc., S.L.	Italia	Repsol Energy Ventures, S.A.	Shareholding increase	July 2021	E.M.	3.03 %	12,90%
Alba Emission Free Energy S.L	Italia	Petróleos del Norte, S.A.	Acquisition	September 2021	F.C.	100.00 %	100.00 %
Repsol Finance Brasil S.A.R.L.	Italia	Repsol Exploração Brasil Ltda.	Incorporation	September 2021	F.C.	100.00 %	100.00 %
Ezzing Renewable Energies S.L.	United States	Repsol Energy Ventures S.A.	Shareholding increase	September 2021	E.M.	2.10 %	24.30 %
Refinería La Pampilla, S.A.A.	United States	Repsol Perú, B.V.	Shareholding increase	October 2021	F.C.	6.80 %	99.20 %
Ampere Power Energy, S.L.	España	Repsol Energy Ventures, S.A.	Shareholding increase	October 2021	E.M.	0.01 %	6.64 %
Saint John LNG, Limited Partnership	España	Repsol Oil & Gas Canada, Inc.	Shareholding increase	November 2021	F.C.	25,00%	100,00%
Begas Motor, S.L.	España	Repsol Energy Ventures, S.A.	Shareholding increase	December 2021	E.M.	0,02%	18,91%
Repsol Renewables Development Company LLC	España	Repsol Renewables North America, Inc	Acquisition	December 2021	F.C.	100,00%	100,00%
Repsol Renewables Development Holdings Corp	España	Repsol Renewables North America, Inc	Acquisition	December 2021	F.C.	100,00%	100,00%
Jicarilla Solar 2 LLC	España	Repsol Renewables Development Holdings Corp	Acquisition	December 2021	F.C.	100,00%	100,00%
Jicarilla Solar 2 Bond Purchaser LLC	España	Jicarilla Solar 2 LLC	Acquisition	December 2021	F.C.	100,00%	100,00%
Gestión Activa de Pedidos S.L.	España	Repsol Comercial de Productos Petrolíferos, S.A.	Incorporation	December 2021	F.C.	100,00%	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.

b) Reduction in interest in subsidiaries, joint ventures, and/or associates and other similar transactions:

					2021		
Name	**Country**	**Parent company**	**Item**	**Date**	**Method of consolidation [1]**	**% voting rights disposed or derecognized**	**% total voting rights in entity following disposal**
Ampere Power Energy, S.L.	Spain	Repsol Energy Ventures, S.A.	Shareholding reduction	January 2021	E.M.	0.55 %	6.63 %
Dubai Marine Areas, Ltd.	United Kingdom	Repsol Exploración S.A.	Liquidation	April 2021	E.M.	50.00 %	— %
JSC Eurotek - Yugra	Russia	Repsol Exploración Karabashsky, B.V.	Shareholding reduction	April 2021	E.M.	0.90 %	67.40 %
AR Oil & Gaz, B.V.	Netherlands	Repsol Exploración S.A.	Disposal	May 2021	E.M. (J.V.)	49.00 %	— %
MC Alrep, Llc.	Russia	AR Oil & Gaz, B.V.	Disposal	May 2021	E.M. (J.V.)	49.00 %	— %
Saneco	Russia	AR Oil & Gaz, B.V.	Disposal	May 2021	E.M. (J.V.)	49.00 %	— %
TNO (Tafnefteotdacha)	Russia	AR Oil & Gaz, B.V.	Disposal	May 2021	E.M. (J.V.)	48.79 %	— %
Finboot Ltd.	United Kingdom	Repsol Energy Ventures S.A.	Shareholding reduction	May 2021	E.M.	0.15 %	8.54 %
Nudo Manzanares 220 KV, A.I.E.	Spain	Tramperase, S.L.	Shareholding reduction	May 2021	E.M.	9.66 %	27.60 %
Dynasol Altamira, S.A. de C.V.	Mexico	Dynasol Elastómeros, S.A. de C.V.	Absorption	June 2021	E.M.	49.99 %	— %
Oleum Insurance Company Ltd.	Barbados	Repsol Oil & Gas Canada, Inc.	Disposal	September 2021	F.C.	100.00 %	— %
Repsol Electricidad y Gas, S.A.	Spain	Repsol S.A.	Absorption	September 2021	F.C.	100.00 %	— %
Repsol Italia, SpA	Italy	Repsol S.A.	Disposal	September 2021	F.C.	100.00 %	— %
Repsol E&P Eurasia, LLC	Russia	Repsol Exploración, S.A.	Liquidation	October 2021	F.C.	100.00 %	— %
Repsol Baicoi, S.R.L.	Romania	Repsol Exploración, S.A.	Liquidation	November 2021	F.C.	100.00 %	— %
Repsol Targoviste, S.R.L.	Romania	Repsol Exploración, S.A.	Liquidation	November 2021	F.C.	100.00 %	— %
Repsol Libreville, S.A. avec A.G.	Gabon	Repsol Exploración, S.A.	Liquidation	November 2021	F.C.	100.00 %	— %
Alectoris Energía Sostenible 1, S.L.	Spain	Repsol Renovables, S.L.U	Shareholding reduction	November 2021	F.C.	49.00 %	51.00 %
Alectoris Energía Sostenible 3, S.L.	Spain	Repsol Renovables, S.L.U	Shareholding reduction	November 2021	F.C.	49.00 %	51.00 %
Desarrollo Eólico Las Majas VII, S.L.U	Spain	Repsol Renovables, S.L.U	Shareholding reduction	November 2021	F.C.	49.00 %	51.00 %
Fuerzas Energéticas del Sur de Europa V, S.L.U	Spain	Repsol Renovables, S.L.U	Shareholding reduction	November 2021	F.C.	49.00 %	51.00 %
Fuerzas Energéticas del Sur de Europa VI, S.L.U	Spain	Repsol Renovables, S.L.U	Shareholding reduction	November 2021	F.C.	49.00 %	51.00 %
Fuerzas Energéticas del Sur de Europa XI, S.L.U	Spain	Repsol Renovables, S.L.U	Shareholding reduction	November 2021	F.C.	49.00 %	51.00 %
Fuerzas Energéticas del Sur de Europa XII, S.L.U	Spain	Repsol Renovables, S.L.U	Shareholding reduction	November 2021	F.C.	49.00 %	51.00 %
Generación Eólica El Vedado, S.L.	Spain	Repsol Renovables, S.L.U	Shareholding reduction	November 2021	F.C.	49.00 %	51.00 %
Agrícola Comercial del Valle de Santo Domingo, S.A.	Mexico	Repsol Downstream Internacional, S.A.	Disposal	November 2021	E.M.	20,00%	20,00%
Repsol Pitesti, S.R.L.	Romania	Repsol Exploración, S.A.	Liquidation	December 2021	F.C.	100.00 %	— %
Talisman (Vietnam 15-2/01), Ltd.	Canada	Repsol Exploración, S.A.	Disposal	December 2021	F.C.	100.00 %	— %
Repsol Oil & Gas Sea Pte., Ltd.	Singapore	Repsol Exploración, S.A.	Disposal	December 2021	F.C.	100.00 %	— %
Repsol Targu Jiu, S.R.L.	Romania	Repsol Exploración, S.A.	Liquidation	December 2021	F.C.	100.00 %	— %
Rocsole OY	Finland	Repsol Energy Ventures S.A.	Shareholding reduction	December 2021	E.M.	1,33%	15,34%

[1] Method of consolidation:
F.C.: Full consolidation
E.M.: Equity method. Joint Ventures are identified as "JV".

Appendix III: Regulatory framework

The activities of Repsol, S.A. and its subsidiaries are subject to extensive regulation, the key aspects of which are in this note. Of special note is the regulation related to climate change and decarbonization of the economy, for which the general framework is described below and the impacts on business activity are described in the Appendix by geographical region.

Climate change

Following the Paris Agreement, the commitments assumed by the signatories under their respective National Determined Contributions had a significant impact on the development of new climate policies and on the approval of new regulations.

European Union
The European Union (EU), 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 2021: (i) European Climate Law (that entered into force on July 29, 2021), which includes a legally binding target of net zero greenhouse gas emissions by 2050; and (ii) the “Fit for 55” package of proposals presented in July 2021 to reduce greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels.

On March 8, 2022, the RePowerEU communication (joint European action for more affordable, safe and sustainable energy) was published, and on May 18, 2022, the RePowerEU Plan. The plan seeks to reduce dependence on Russian fossil fuels and to raise the ambition for the green transition by 2030. The plan focuses on diversifying energy sources, accelerating the green transition and renewable energy, encouraging energy saving, and also establishes protection measures. and investments in addition to those foreseen in Fit for 55. These proposals are interconnected and stretch across a variety of policy areas and economic sectors.

Spain
In Spain, the “Strategic Framework for Energy and Climate” includes the following fundamental pillars: (i) the National Integrated Energy and Climate Plan; (ii) the Strategy for a Just Transition; and (iii) Law 7/2021, of May 20, on climate change and the energy transition (published in May 2021), which establishes, at the country level, minimum targets for reducing greenhouse gas emissions, the penetration of renewable energies and improving energy efficiency by 2030 with a commitment to achieve climate neutrality by 2050 or in the shortest possible time frame.

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 Commission.

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 to 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.

This control, in addition to the electricity and gas sectors, 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 upstream

From the entry into force of Law 7/2021 on climate change and the energy transition, on May 22, 2021, no new exploration authorizations, hydrocarbon research permits or hydrocarbon exploitation concessions will be granted in Spain, including the territorial sea, the exclusive economic zone and the continental shelf, as regulated under Law 34/1998, of October 7, on the hydrocarbons sector, and Royal Decree Law 16/2017, of November 17, establishing safety provisions for hydrocarbon research and operation in the marine environment, or for any activity for hydrocarbon operations in which the use of high-volume hydraulic fracturing is envisaged.

Five years prior to the end of the term of an operating concession, and without prejudice to the requirements established in the Royal Decree granting the concession, the person or entity holding the concession must submit a report to the Ministry for Ecological Transition and the Demographic Challenge that reflects the potential for reconverting their facilities or their location for other uses of the subsoil, including geothermal energy, or for other economic activities, in particular, the establishment of renewable energies, and that must include the levels for maintaining research permits and concessions for operating the hydrocarbon fields already in force that are located in the territorial sea, the exclusive economic zone and the continental shelf, as they may not, under any circumstances, be extended beyond December 31, 2042.

Research permits and concessions for operating hydrocarbon fields already in force that are located in the territorial sea, the exclusive economic zone and the continental shelf may not, under any circumstances, be extended beyond December 31, 2042.

For those concessions currently in force, Royal Decree Law 16/2017 should be taken into account, which establishes safety provisions for hydrocarbon research and operation in the marine environment, implemented by Royal Decree 1339/2018, of October 29, transposing 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 the abandonment and decommissioning of facilities, in order to prevent serious accidents and limit their consequences.

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. Likewise, exclusive supply contracts are prohibited from containing exclusivity clauses with regard to the provision of charging services to electric vehicles.

There are 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.

In order to mitigate the impact on companies and families of the rise in fuel prices caused by the military aggression against Ukraine, Royal Decree-Law 6/2022, of March 29, created an extraordinary temporary bonus of €0.20 cents per liter/kilogram on the price of certain energy products applicable from April 1, 2022 to June 30, 2022 and subsequently extended to December 31, 2022 by Royal Decree-Law 11/2022, of 25 of June. In order to contribute to the previous measure, a non-tax public equity benefit provision was also created and imposed on wholesale operators of oil products with refining capacity in Spain and with an annual turnover of more than €750 million. Such operators, including Repsol, could be exempted from this provision if they unequivocally undertook to make a discount of a minimum amount equivalent to €0.05 cents per liter/kilogram on sales to final consumers of the energy products covered by the bonus. This commitment was assumed by Repsol and renewed prior to July 1, 2022. The National Commission for Markets and Competition is the body in charge of verifying effective compliance with the discount commitment. Royal Decree-Law 20/2022, of December 27, replaces the general bonus of 20 cents per liter on certain fuels with more specific measures aimed at promoting the use of public transport and aid for sectors that are most dependent on the use of fuel and so have greater exposure to price fluctuations, such as transportation, agriculture and fishing. Notwithstanding the foregoing, Repsol will maintain its discount of €0.10 cents per liter of fuel for Waylet users from January 1 to March 31, 2023.

Minimum stocks

Law 34/1998 of October 7 on the Hydrocarbons Sector (LSH), establishes obligations to maintain minimum security stocks that affect oil products and natural gas, given their special importance for the development of economic life.

Regarding petroleum products, Royal Decree-Law 15/2013, of December 13, introduced a modification to the LSH, which indicates that the administrative procedures and obligations necessary to guarantee permanently a level of minimum security stocks equivalent to, at least, the greater of the following two quantities: the equivalent of 90 days of average daily net imports or of 61 days of average daily domestic consumption in the reference year, in oil equivalent.

Royal Decree 1716/2004, in the wording given by 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.

For oil products, the minimum stocks obligation has been reduced as a consequence of the invasion of Ukraine by Russia.

The last modification took place through Order TED/725/2022, of July 27, completing the release of minimum security stocks of oil products within the framework of the second coordinated action of the International Energy Agency in response to the war in Ukraine. It establishes a transitory reduction from 86.4 days to 84.2 days, until, in the terms provided in the third section of the Agreement of the Council of Ministers dated May 17, it is decided to restore the obligation to the level determined.

Regarding natural gas, Royal Decree-Law 6/2022 has modified the obligations of security reserves provided for in Royal Decree 1716/2004 by expanding the obligation to maintain minimum stocks of entities involved in the natural gas sector from 20 days to 27.5 days of their firm sales or consumption in the previous calendar year.

Of these, the minimum security stocks of a strategic nature equivalent to 10 days of firm sales or consumption in the previous calendar year will be kept in underground storage of the basic network. In addition to strategic stocks, all entities obliged to maintain minimum security stocks of natural gas must have operational stocks in underground storage: at all times for a volume of gas equivalent to 10 days of firm sales or consumption in the previous calendar year, to which is added, at least, on November 1, a volume of gas equivalent to 7.5 days of its firm sales or consumption in the previous calendar year.

Mobility and alternative fuels:

In relation to mobility, the Law on Climate Change and Energy Transition establishes:

- Annual targets for the integration of renewable energies and the supply of sustainable alternative fuels in transport, with a special emphasis on advanced biofuels and other renewable fuels of non-biological origin.
- The obligation of public authorities to adopt the necessary measures, in accordance with that established in EU regulations, in order to: (i) ensure that passenger cars and light commercial vehicles do not have direct CO_2 emissions by 2050, and (ii) gradually reduce the emissions of new passenger cars and light commercial vehicles, excluding those registered as historic vehicles, not intended for commercial uses, so that these vehicles have emissions of 0 g CO_2/km no later than 2040.
- The obligation for owners of vehicle fuel and fuel supply facilities to install an infrastructure for alternative fuels (for more information see the following section "Alternative Fuels").
- The following are also noteworthy: (i) the Hydrogen Roadmap (published in October 2020), which focuses on the development of renewable hydrogen, with the aim of positioning Spain as a technological benchmark in the production and use of renewable hydrogen, while at the same time contributing to achieving objectives such as reaching climate neutrality, the use of surplus renewable energy or the decarbonization of sectors where electrification is not viable or profitable; and (ii) the 2050 Long Term Decarbonization Strategy (published on November 3, 2020), to move towards climate neutrality by 2050, with milestones in 2030 and 2040

Royal Decree-Law 6/2022 transposes into our internal legal system article 7 bis of Directive 98/70/CE, of the European Parliament and of the Council, of October 13, 1998, relating to the quality of gasoline and diesel and by which Directive 93/12/EEC of the Council (FQD Directive) is modified, establishing a new obligatory target of reducing the intensity of greenhouse gas emissions by 6% in the transport life cycle per unit of fuel and energy supplied in transport. This measure applies to (i) wholesale operators and retail distributors of oil products, (ii) consumers of oil products in the part of consumption not covered by the above, (iii) wholesale operators and

LPG retail sellers, (iv) LPG consumers in the part of consumption not covered by the above (v) natural gas sellers, and (vi) direct consumers in the market in the part of consumption not covered by the above.

Directive 2018/2001, on the promotion of the use of energy from renewable sources, provides that, in order to integrate the use of renewable energy in the transport sector, each Member State will impose an obligation on fuel suppliers to ensure that the quota of renewable energy in final energy consumption in the transport sector is at least 14% by 2030, at the latest. This Directive is partially incorporated into our legal system through Royal Decree 376/2022, of May 17, which regulates the criteria for sustainability and reduction of greenhouse gas emissions from biofuels, bioliquids and biomass fuels, as well as the system of guarantees of the origin of renewable gases (modifying Royal Decree 1085/2015 of December 4 on the promotion of biofuels). It establishes minimum obligatory targets for the sale or consumption of biofuels for the years 2023, 2024 , 2025 and 2026 of 10.5%, 11%, 11.5% and 12%, in energy content, respectively. The target for biofuels and biogas for transport purposes for the year 2026 will be applied in successive years for as long as new targets are not regulated.

Royal Decree 639/2016 of December 9 established a framework of measures for the implementation of an infrastructure for alternative fuels, including charging points for electric vehicles and natural gas and hydrogen refueling points. The Law on Climate Change and Energy Transition, in order to guarantee the existence of sufficient electrical charging facilities, introduces obligations to install electrical charging infrastructures at gas stations with annual sales of gasoline and diesel of more than 5 million liters. This charging infrastructure must have a power equal to or greater than 150 kW or 50 kW in direct current depending on the volume of sales (greater than 10 or 5 million liters sold in 2019). For new facilities from 2021 or any undertakings to renovate installations that require a review of their official certification , the minimum power will be 50 kW in direct current. Finally, note should be taken of Decree 184/2022, of March 8, which regulates the activity of providing energy recharging services for electric vehicles.

Liquefied petroleum gas

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.

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.

Finally, Royal Decree-Law 20/2022 of December 27 establishes that the corresponding revisions of the maximum sale price, before tax, of liquefied petroleum gases that are approved following the entry into force of this Royal Decree-Law until June 30, 2023, and of bottled liquefied petroleum gases resulting from the application of the system established in Order IET/389/2015, may not exceed the maximum, price before tax, established by the Resolution of May 12 of 2022 of the General Directorate of Energy Policy and Mines, which publishes the new maximum sales prices, before tax, of bottled liquefied petroleum gases, in containers of load equal to or greater than 8 kg, and less than 20 kg, excluding mixing containers for the use of liquefied petroleum gases as fuel.

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 sale 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.

Under the scope of the redistribution of competences regulated by Royal Decree Law 1/2019, the CNMC approved Circular 6/2020, of July 22, establishing the methodology for calculating transmission, local network and natural gas regasification fees. In particular, the methodology for determining access fees to regasification facilities, with the exception of the fee for other regasification costs, entered into force on October 1, 2020. The methodologies for the remaining fees will take effect as of October 1, 2021, and until this date the current fee structure and billing rules will continue to apply. By Resolution of May 27, 2021 of the CNMC, the tolls for access to the transmission networks, local networks and regasification were established for the gas year 2022. For its part, MITECO approved Royal Decree 1184/2020, of December 29, which establishes the methodologies for calculating the gas system charges, the regulated remuneration of basic underground storage and the fees applied for their use. The first application of this occurred in 2022 through the publication of Order TED/929/2022, of September 27, which establishes the charges for the gas system and the remuneration and fees for basic underground storage for gas year 2023.

On December 16, 2021, the CNMC approved the resolution establishing the list of dominant operators in the energy sectors, including the Repsol Group among the dominant operators in the natural gas market. Subsequently, the Resolution of the Council of Ministers dated February 2, 2021 established Repsol's obligation to act as a market maker in the Spanish Organized Gas Market. The conditions for the participation of the Repsol Group were established in the Resolution dated July 9, 2021 of the Secretary of State for Energy, which establishes the terms and conditions governing the service making it mandatory for dominant operators to act as market makers in the natural gas market.

Through Resolutions of December 16, 2021 and November 24, 2022, the CNMC updated the information on the dominant operators in the energy sectors, with the Repsol Group appearing in both cases as the dominant operator of the aforementioned market.

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.

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 Law 23/2020, of June 23, entrusts the government with the regulatory development of a remuneration framework for renewable generation, based on the long-term recognition of a fixed price for energy. For such purpose, it provides for the holding of competitive tender procedures, which may be differentiated by technology, technical characteristics, size, location, manageability and other criteria, in which the product to be auctioned is energy, installed capacity or a combination of both. In this regard, Royal Decree 960/2020, of November 3, has been approved, which regulates the aforementioned remuneration framework for renewable generation, to be granted through auctions, while at the same time creating the electronic register of the economic regime for renewable energies.

The head of the Ministry for Ecological Transition and the Demographic Challenge is responsible for regulating the auction mechanism, by means of a Ministerial Order, while the head of the Secretary of State for Energy is responsible for calling the auctions by means of a Resolution. In this regard, Ministerial Order TED/1161/2020, of December 4, regulates the first auction mechanism for granting the repeated economic regime for renewable energies and establishes the indicative timetable for the 2020-2025 period.

The first auction for the concession of said economic regime was called by the Resolution of December 10, 2020, of the Secretary of State for Energy, with a product quota of 3,000 MW of installed power. In 2021, a second auction was called by the Resolution of September 8, of the General Directorate of Energy Policy and Mines, for which a product is established aimed at electricity generation facilities from renewable energy sources comprising one or more of the photovoltaic and wind technologies located on land, and a product quota of 3,300 MW to be auctioned. Specifically, in this call, four minimum reserves were established to be awarded to various technologies or categories of different special characteristics. These included an accelerated availability reserve aimed at facilities in an advanced stage of processing and another reserve for local distributed generation photovoltaic facilities. The subsidiary REPSOL RENOVABLES S.L.U. was awarded a total of 3 installations and 138 MW. In 2022, two more auctions, the third and fourth, have been called by Resolutions of July 18 and August 2, respectively, for a total of 3,820 MW.

Returning to Royal Decree Law 23/2020, it also contains provisions relating to access and connection to the networks, stipulating deadlines and administrative milestones for processing existing projects and allowing the extension of permits to seven years. It also streamlines the processing of modifications to existing facilities, regulates figures such as the renewable energy community or the independent aggregator and incorporates provisions relating to hybridization and high-power charging infrastructures.

Royal Decree 413/2014 regulates the legal and economic regime for the activity of producing electricity from renewable energy sources, cogeneration and waste, applicable to the Repsol Group's cogeneration facilities, members of the extinct special regime and assimilated ordinary regime. Order IET/1045/2014, of June 16, approves the remuneration parameters for standard facilities applicable to certain facilities producing electrical energy from renewable energy sources, cogeneration and waste.

Royal Decree 900/2015, of October 9, regulates the administrative, technical and economic conditions of the modalities of electricity supply and production with self-consumption. This Royal Decree was substantially modified by Royal Decree-Law 15/2018, and later, by Royal Decree 244/2019, of April 5, which regulates the administrative, technical and economic conditions of self-consumption in Spain. This regulation supplements the regulatory framework promoted by Royal Decree-Law 15/2018, the main measure of which was the repeal of what is commonly called the "sun tax", and represents a new energy panorama that is committed to a model based on distributed generation and renewable energy. Among its numerous innovations, it is worth noting:

- Self-consumed energy of renewable origin, cogeneration or waste, will be exempt from all types of charges and tolls.
- Recognition of shared self-consumption, which makes it possible for several users to benefit from the same generating facility..
- Simplification of procedures and bureaucratic deadlines for the legalization of the facilities.
- Introduction of simplified compensation for surplus generation.

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.

Royal Decree-Law 17/2019, of November 22, which adopts urgent measures for the necessary adaptation of remuneration parameters that affect the electrical system and which responds to the process of cessation of activity of thermal power plants, updates the value of reasonable profitability to be applied during the second regulatory period to facilities producing electricity from renewable energy sources, cogeneration and waste, while granting certain facilities the possibility of opting for the value on which the reasonable return is based for the first regulatory period to stay fixed for the following two regulatory periods.

The first regulatory period having finished, Order TED/171/2020, of February 24, has established the remuneration parameters for the second regulatory period, between January 1, 2020 and December 31, 2025, as well as the value of remuneration for the operation, in the first half of 2020, of standard facilities with operating costs that essentially depend on the price of fuel. The review made by this Order refers to all approved standard facilities, and provides a global vision of the remuneration parameters applicable to them.

Royal Decree-Law 6/2022, of March 29, which adopts urgent measures in the framework of the National Response Plan to the economic and social consequences of the war in Ukraine, established an update of the remuneration parameters of the remuneration scheme specific to 2022.

Royal Decree-Law 10/2022, of May 13, temporarily establishing a production cost adjustment mechanism to reduce the price of electricity in the wholesale market, has incorporated annual, quarterly and monthly references to forward market products into the adjustment mechanism for deviations in the market price that will be applied to the RECORE energy generated in 2023 and subsequent years.

Finally, through Order TED/1232/2022, of December 2, which updates the remuneration parameters of standard facilities applicable to certain facilities producing electrical energy from renewable energy sources, cogeneration and waste, for the purposes of its application to the year 2022, the remuneration parameters are established for 2022, without prejudice to the reviews provided for in each regulatory half period and to the reviews of the remuneration for the operation of standard facilities with operating costs that depend essentially on the price of the fuel. This Order establishes the remuneration for the investment in, and where appropriate, the remuneration for the operation, for 2022. For standard facilities with operating costs that depend essentially on the price of fuel, the value of the remuneration for the operation is established for the first half of 2022.

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. The new wording of Law 24/2013, in line with Royal Decree-Law 6/2022 and Royal Decree 897/2017, is the current reference framework for everything related to the rate subsidy and vulnerable consumers.

Royal Decree Law 17/2021, of September 14, on urgent measures to mitigate the impact of rising natural gas prices on the retail gas and electricity markets, passed extraordinary measures in view of the high electricity prices and their effects on consumers during the autumn and winter months, which included fiscal measures eliminating the tax on the value of electricity production in the fourth quarter of 2021 and reducing the special tax on electricity; established a mechanism to reduce the excess remuneration that certain facilities receive as a result of the marginal operation of the market until March 2022; and created a minimum vital supply to combat energy poverty, among other measures. Royal Decree Law 23/2021, of 26 October, on urgent energy measures to protect consumers and ensure transparency in the wholesale and retail electricity and natural gas markets, introduces a clarification with regard to Royal Decree Law 17/2021 regarding the mechanism for reducing the excess remuneration of the electricity market caused by the quoted price of natural gas, indicating that it will not apply to energy produced by electricity generation facilities that is covered by a forward contracting instrument, when the hedging price is fixed, and provided that the forward contracting instrument was entered into prior to the entry into force of the Royal Decree Law or when, having been entered into after the entry into force of the Royal Decree Law, its hedging period is longer than one year. Royal Decree-Law 18/2022 extends until December 31, 2023 the reduction mechanism established in Royal Decree-Law 17/2021.

Royal Decree-Law 23/2021 and its subsequent updates have extended the electricity subsidy rate discounts to December 31, 2023

Royal Decree-Law 6/2022, of March 29, adopting urgent measures in the framework of the national response plan to the economic and social consequences of the war in Ukraine, makes both families and people living in the same home beneficiaries of the subsidy rate, by extending its application to all recipients of minimum living income who have a supply contract - taking the co-living unit for reference instead of the family unit. In addition, it applies a support mechanism to electro-intensive industries consisting of an 80% reduction in the cost in the electricity bill that corresponds to access tolls for electricity transmission and distribution networks, in force from January 1 to December 31, 2022.

Ministerial Order TED/517/2022, of June 8, setting the date of entry into operation of the production cost adjustment mechanism to reduce the wholesale market electricity price regulated in Royal Decree-Law 10/2022, of May 13, disseminates the decision of the European Commission that authorizes this mechanism. According to this Order, the adjustment mechanism provided for in Royal Decree-Law 10/2022, affecting the wholesale electricity market's clearing price, becomes applicable on June 14. The purpose of the aforementioned Royal Decree-law is to reduce the margin price of electricity in the wholesale markets of the Iberian Peninsula (Spain and Portugal) and, ultimately, to promote a reduction in the retail prices paid by all final consumers of electricity. The measure will be applicable until May 31, 2023.

The measure uses a mathematical formula to limit the price of gas passed on by thermal power plants in the offers that set the price of the wholesale electricity market. The gas reference price established in the mechanism is variable, starting at a value of €40/MWh for the first six months and increasing in successive monthly steps of €5/MWh. Royal Decree-Law 17/2022, of September 20, adopting urgent measures in the energy field, in the application of the remuneration regime to cogeneration facilities and temporarily reduces the Value Added Tax rate applicable to intra-community deliveries, imports and acquisitions of certain fuels. It regulates a new type of voluntary waiver of the specific remuneration regime for cogeneration and treatment facilities for olive oil slurry and sludge, so that facilities that renounce use of the specific remuneration scheme may request inclusion in the adjustment mechanism regulated in Royal Decree-Law 10/2022, of May 13, provided that this adjustment mechanism is in force.

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 are allocated an annual energy saving target at the national level called savings obligations, which is quantified in financial terms.

Royal Decree Law 23/2020, of June 23, extended the Spanish energy efficiency obligation scheme until December 31, 2030, thus complying with Directive (EU) 2018/2002 of the European Parliament and of the Council of December 11, which requires Member States to achieve new annual savings of 0.8% of annual final energy consumption from January 1, 2021 to December 31, 2030.

Intervention in the energy market

On October 7, 2022, Regulation (EU) 2022/1854 came into force regarding an emergency intervention to provide a coordinated response, at European Union level, to the high energy prices, through which several temporary measures were established: (i) a joint ceiling of €180 per MWh on income from electricity generation applied to certain electricity producers designated in the Regulation; (ii) a temporary solidarity contribution from companies and permanent establishments of the European Union operating in the crude oil, natural gas, coal, and refining sectors from profits earned in the 2022 and/or 2023 tax years that are above a 20% increase in average taxable profits generated in the four tax years beginning on or after January 1, 2018, and; (iii) measures to reduce demand through a binding target to reduce gross monthly energy consumption by 10% compared to the average gross electricity consumption in the corresponding months of the reference period (from November 1 to March 31 in each of the five consecutive years prior to the effective date of regulation 2022/1854, starting from the period between November 1, 2017 and March 31, 2018) and a reduction in gross electricity consumption during peak hours.

In Spain, on December 28, 2022, Law 38/2022 was published, which provides that the main operators in the energy sector must pay a levy (non-tax public levy) on a temporary basis. For more information, see Note 22.

Bolivia

The 2009 Bolivian Constitution establishes that the National Oil company Yacimientos Petrolíferos Fiscales Bolivianos (YPFB) is authorized to enter into service agreements with public or private companies 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 enacted, 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 upstream in Bolivia.

Operating Contracts and Oil Service Contracts

According to the Hydrocarbons Law, any individual or group, national or foreign, public or private person may enter into one or more production sharing, operating or association contracts with YPFB to carry out exploration and operation activities, for a period not to exceed forty (40) years. Article 362 of the Bolivian Constitution (CPE) and Law 767 limit the type of contract to oil service contracts, which have similar characteristics as the operating contracts of Law 3058.
An operating contract and an oil service contract are those contracts by which the titleholder will execute, by 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 titleholder 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 titleholder’s remuneration. This payment will cover all operating and utility costs. YPFB must pay the royalties. Once production has started in an oil service contract, the titleholder is required to deliver all oil and gas produced to YPFB. The titleholder will be entitled to remuneration under the operating contract and/or the oil service contract, 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 CPE (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 titleholder were entered into on May 8, 2009.

Canada

Regulation of upstream activities

In the Canadian provinces of British Columbia, Alberta and Saskatchewan where the majority of the Company’s upstream 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 with 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, water usage, exploration, development, production, refining, transport and sales, 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, suspension of work, lawsuits or other sanctions.

In addition to the regulation and control of upstream activities, the provincial and Canadian federal governments have also enacted various forms of emissions regulations. Specifically for the province of Alberta, where most of the Company’s activities are carried out, the Technology Innovation and Emissions Reduction Implementation Act (TIER) establishes a price of 50 Canadian dollars per ton of carbon emissions.

The TIER regulations are intended to meet federally mandated carbon 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.

In addition to the provincial regulations, the Canadian federal government has announced, within the Canadian Clean Growth and Climate Change Framework, the possibility for provinces to apply carbon price increases of up to CAD 50 per ton by 2022.

United States of America

Offshore Upstream

The two government agencies responsible for offshore upstream on the Outer Continental Shelf 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 review 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 upstream

With regard to US onshore upstream 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 Alaska and Texas, upstream 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 Upstream activities.

Federal authorities do have 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.

Biden Administration Orders

On January 27, 2021, President Biden issued an Executive Order titled, "Tackling the Climate Crisis at Home and Abroad." This Executive Order provides, among other things, "To the extent consistent with applicable law, the Secretary of the Interior shall pause new oil and natural gas leases on public lands or in offshore waters pending completion of a comprehensive review and reconsideration of Federal oil and gas permitting and leasing practices in light of the Secretary of the Interior's broad stewardship responsibilities over the public lands and in offshore waters, including potential climate and other impacts associated with oil and gas activities on public lands or in offshore waters. The Secretary of the Interior shall complete that review in consultation with the Secretary of Agriculture, the Secretary of Commerce, through the National Oceanic and Atmospheric Administration, and the Secretary of Energy. In conducting this analysis, and to the extent consistent with applicable law, the Secretary of the Interior shall consider whether to adjust royalties associated with coal, oil, and gas resources extracted from public lands and offshore waters, or take other appropriate action, to account for corresponding climate costs." The Executive Order does not specify a duration for the directed pause in new oil and gas leasing.

On June 15, 2021, a US District Judge in Louisiana issued a preliminary injunction, with nationwide reach, challenging the pause on new oil and natural gas leasing on public lands and in offshore waters found in Section 208 of this Executive Order. On August 17, 2022, the U.S. Court of Appeals for the Fifth Circuit vacated this preliminary nationwide injunction, but the US District Judge subsequently issued a permanent injunction on August 18th against said Order, limited in scope to the thirteen plaintiff states of Louisiana, Alabama, Alaska, Arkansas, Georgia, Mississippi, Missouri, Montana, Nebraska, Oklahoma, Texas, Utah, and West Virginia.

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.

Upstream

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. However, Emergency Decree 010-2004 created the Fund for the Stabilization of Petroleum Derived Fuel Prices (FEPC) as an intangible fund to prevent the high volatility of oil prices and its derivatives from being passed on to consumers. The FEPC's operating mechanism established by Emergency Decree 010-2004 and its Regulations indicates that when the import or export parity price, as the case may be, is higher than the upper limit of the corresponding price band, the producers and importers could apply a discount in the prices of the products for the same value defined by the compensation factor approved by the General Directorate of Hydrocarbons of the Ministry of Energy and Mines, whereby the FEPC would have a debt with these producers and importers for the amount of the applied compensations. Conversely, when the import or export parity price, as the case may be, is lower than the lower limit of the corresponding price band, an obligation would be generated for the producers and importers with the FEPC defined by the contribution factor. Article 10 of Emergency Decree 010-2004 establishes that each company will freely determine, in accordance with their commercial policies, the premiums or discounts to be applied for each product and customer over OSINERGMIN's reference prices, while maintaining the freedom to set the sales prices with its customers.

Although the FEPC has been applied for many years, Diesel and LPG were excluded from the FEPC in March 2020. However, in March 2021, the Ministry of Energy and Mines approved Supreme Decree No. 006-2021-EM, extended by Supreme Decree No. 015-2021-EM, which temporarily included diesel for vehicle use in the FEPC (during the period from March 27 to August 27, 2021). The most significant changes to the mechanism include the fact that compensation from the Fund will only be given to companies that maintain their primary sales price stable and without any change with regard to the primary sales price in effect on the date of publication of the aforementioned decree. This provision makes compensation conditional on maintaining fixed prices, which contravenes the freedom of contract, as well as Article 77 of the OHL, which establishes that the prices of crude oil and its derivatives are governed by supply and demand and distorts the FEPC.

Subsequently, Supreme Decree No. 025-2021-EM, of November 9, 2021, included diesel for vehicle use in the FEPC for an indefinite period of time. It also indicated that the primary sale price of such fuel must remain stable, i.e., it must not be above the corresponding target price band (defined by OSINERGMIN), which represents a change in relation to the wording of the supreme decrees of 2021 mentioned above, but it still violates principles such as the freedom of contract and free pricing of crude oil and its derivatives based on supply and demand as established in current regulations, since it establishes a maximum price for its sale, thus violating the freedom of companies to establish their prices in the market. A similar situation is occurring with LPG, which has been included in the FEPC since September 2021.

Portugal

In Portugal, Decree Law No. 31/2006, of February 15, sets out the framework for the National Oil System (SPN) and has been implemented and regulated through extensive administrative regulations.

Sale prices of crude oil and oil products are freely set on the market, without prejudice to the rules on competition and public service obligations, however, prices in the autonomous regions of the Azores and Madeira are administratively set by the regional governments. Pursuant to Law No. 69-A/2021, of October 21, the government has the power to intervene, on an exceptional basis, in setting maximum margins for any of the commercial components of the retail price of simple fuels or bottled LPG. These maximum margins may be established, with a specific duration, for any of the activities in the value chain of simple fuels or bottled LPG, being set by Ministerial Order issued by the members of government responsible for the areas of economy and energy, following the proposal of the Portuguese Energy Services Regulatory Authority (ERSE) and consultation to the Portuguese Competition Authority (AdC), which has not yet been published.

Sales, which include wholesale and retail trade activity, are freely carried out, but depends on obtaining a certificate, in addition to compliance with other obligations, especially with regard to tax and customs matters, regularity of supply, publication of prices and the provision of information to various competent administrative bodies, as well as verification of seller's good standing.

Minimum stocks

Portugal is required to maintain minimum stocks in the crude oil and/or oil products sectors, in accordance with Decree Law No. 165/2013, of December 16, which transposed EU legislation, corresponding to 90 days of average daily net imports of crude oil and oil products into the country over the last year, it being legally possible to hold stocks in another EU Member State, provided that all requirements have been verified and the necessary formalities have been completed.

Liquefied petroleum gas

LPG - piped, bottled and bulk - is regulated by Decree Law No. 57-A/2018, of July 13, and is subject to control by the Portuguese Energy Services Regulatory Authority (ERSE), which assumed the functions of the Portuguese Competition Authority (AdC) in terms of supervision, without prejudice to the powers of the AdC to issue recommendations and codes of conduct, carry out studies and inspections, decide on concentrations, initiate administrative proceedings for infringements of competition law and impose fines, for which it is granted extensive powers of investigation, including the power to carry out domiciliary searches.

Decree Law No. 5/2018, of February 2, establishes the obligation to sell bottled LPG in all of the country's service stations, unless they receive a prior exemption upon a reasoned request of the interested party.

With regard to the sale of LPG, Decree Law No. 31/2006 provides for the sale of bottled, piped and bulk LPG. The supplier of bulk LPG is required to give the customer, or the supplier chosen by the customer, the option of transferring ownership of the facility (storage and piping) upon expiry of the contract. With regard to bottled LPG, a legal obligation has been established to accept containers from other companies, at no cost to the customer, as detailed in Decree Law No. 5/2018, of February 2, which also makes it mandatory to sell bottled LPG at all gas stations in Portugal and determines that the regulations on essential public services apply to bottled LPG and that the "leftover product" in the container delivered by the customer must be deducted from the sale price of the container, under the terms to be defined in regulatory legislation not yet published.

Storage

Storage activities include the operation of (i) storage facilities for direct supply to end customers, (ii) storage facilities for oil products in tare, and (iii) wholesale facilities, and will be licensed by the Minister of Custody, while the licensing of other storage facilities is the responsibility of the competent licensing authorities. The procedure for obtaining licenses to operate oil product storage facilities and the supervision conditions for tax audits are defined in Decree Law No. 267/2002.

The storage of liquid fuels, LPG and other gases derived from oil, solid fuels and other oil products is regulated by Decree Law No. 267/2002, of November 26, and Ministerial Order (Portaria) No. 1188/2003, of October 10.

The regulations establish the right of access for third parties to large storage facilities which are declared to be of public interest, operators of which will be required to grant access to third parties, under non-discriminatory, transparent and objective technical and economic conditions, as well as the right of access to large storage and distribution facilities of piped LPG for sale to end customers.

Gas stations

Gas stations are subject to licensing, in accordance with Decree Law No. 267/2002, of November 26. Law No. 6/2015, of January 16, requires all service station operators to sell fuels without additives, known as simple fuels.

Decree Law No. 170/2005, of October 10, as amended by Decree Law No. 120/2008, of July 10, makes it mandatory to publish fuel sale prices on gas station monoliths and, in the case of service areas located on highways, comparative panels (the prices of the next two service areas are compared) on the highway itself.

Environmental regulation

With regard to environmental prevention, Decree Law No. 151-B/2013, of October 31, indicates that certain facilities (in particular refineries and petrochemical plants, pipelines for the transportation of oil, storage facilities for oil, petrochemical products or chemical products, and surface industrial facilities for oil extraction, among others) are subject to an inspection procedure to assess the significant impacts on the environment and to the imposition of conditioning and/or compensatory measures, while Decree Law No. 152-B/2017 stipulates that climate changes, population, human health and soil should be assessed in future procedures.

Decree Law No. 127/2013, of August 30, establishes the industrial emissions regime, with the aim of preventing and reducing emissions, and is applicable to industrial facilities in this sector, in particular refineries and petrochemical plants, establishing the obligation to obtain an environmental license that sets out a broad set of requirements and conditions that must be met by the beneficiary, in particular emission limits for pollutants and measures for waste management, among others, prior to carrying out the activity.

Decree Law No. 12/2020, of April 6, imposes the obligation on operators producing greenhouse gases to obtain a Greenhouse Gas Emissions Certificate (Título de Emissão de Gases com Efeito de Estufa (TEGEE)) in accordance with EU Directives and the Kyoto Protocol, while Ministerial Order (Portaria) No. 420-B/2015, of December 31, imposes additional taxes on CO_2 emissions on some oil products, based on the prices of the emission license auctions at the CELE.

The legal regime for environmental liability was approved by Decree Law No. 147/2008, of July 29, and defines the objective and subjective scope of the environmental liability of economic operators, imposing the obligation to provide one or more financial guarantees (their own and autonomous, alternative or complementary to each other) to enable operators to assume the environmental liability inherent in their activity, which may be provided through various instruments. This regime is supplemented by the Environmental Administrative Offenses Act (Ley Quadro das Contra-Ordenações Ambientais), published by Law No. 50/2006, of August 29, which sets fines that can reach up to €5 million.

Decree Law No. 75/2015, of May 11, established the Single Environmental Certificate, which contains all the terms and conditions for the construction, exploration and monitoring of an environmental project and all administrative certificates and permits necessary to carry out the activity, the model for which was approved by Ministerial Order (Portaria) No. 137/2017, of April 2.

Decree Law No. 68-A/2015, of April 30, establishes regulations on energy efficiency and cogeneration production, transposing Directive 2012/27/EU of the European Parliament and of the Council of October 25, 2012, applicable to companies other than SMEs (small and medium-sized enterprises), which are required to register with the Directorate General for Energy and Geology (DGEG) and record all information on their energy consumption, in order to monitor the evolution of this consumption, and they must also carry out an independent energy audit every four years.

Climate change and alternative fuels

Council of Ministers Resolution No. 53/2020, of July 10, approved the 2030 PNEC (2030 National Energy and Climate Plan), establishing objectives, among others, to decarbonize the national economy, strengthen the commitment to renewable energies and reduce the country's energy dependence, and Council of Ministers Resolution No. 63/2020, of August 14, approved the National Hydrogen Plan - EN-H2, of exclusively green origin.

The quality levels and characteristics of oil products are provided for in (i) Decree Law No. 89/2008, of May 30 (quality rules for gasoline and diesel fuels), and (ii) Decree Law No. 281/2000, of November 10, which establishes the limits on the sulfur level of certain types of petroleum-derived liquid fuels.

Decree Law No. 117/2010, of October 25, establishes (i) the sustainability criteria for the production and use of biofuels and bioliquids, regardless of their origin, (ii) the mechanisms for promoting biofuels in land transport, and (iii) the limits for the compulsory incorporation of biofuels for the 2011-2020 period, whereby the targets for the 2020-2030 period were updated by Decree Law No. 60/2020, of August 17.

Decree Law No. 60/2017, of June 9, establishes the legal framework for the creation of infrastructure for alternative fuels, defined as: electricity, hydrogen, biofuels, synthetic and paraffinic fuels, natural gas –compressed or liquefied–, and LPG. Council of Ministers Resolution No. 88/2017, of June 26, approved the National Action Framework for the development of the market for alternative fuels in the transportation sector.

The Framework Climate Law (Law No. 98/2021 of December 31) entered into force on February 1, 2022 and establishes the regulatory framework under which Portugal undertakes to achieve carbon neutrality by 2050 through the implementation of energy transition measures and policies. The Law will have to be implemented over the next few years by supplementary legislation that will make changes in the energy sector through the implementation of various energy transition measures and policies: green taxation, carbon taxes on the use of fuel, policies for the use of electric and hybrid vehicles with a view to banning the sale of vehicles powered exclusively by fossil fuels by 2035, restrictive use of fossil fuel natural gas in electricity production, incentives for the use of renewable sources in electricity production, circular economy in industrialization.

Decree-Law No. 30-A/2022, of April 18, approved a set of exceptional measures aimed at guaranteeing the simplification of energy production procedures from renewable sources. These measures will be in force for a period of 2 years.

On October 19, Decree-Law No. 72/2022 was approved, which reinforced the exceptional flexibility measures provided for in Decree-Law 30-A/2022, applicable mainly to installation projects for renewable energy plants (including photovoltaic plants), storage facilities, production units for self-consumption and green hydrogen production units. The innovations are mainly focused on: (i) streamlining the prior control processes for urban operations; (ii) the creation of a new prioritization criterion for access to capacity reservation agreements with network operators, and (iii) the possibility of extending the pre-commercial operational trial period for power plants that obtained public network reception capacity in the 2019, 2020 and 2021 tenders.

Electricity and natural gas sector regulation

In Portugal, Decree-Law No. 15/2022, of January 14, establishes the framework of the National Electricity System and has been implemented and regulated through several administrative regulations.
Decree-Law No. 62/2020, of August 28, establishes the framework of the National Gas System and has been implemented and regulated through extensive administrative regulations.

In the framework of Decree-Law No. 15/2022, Ministerial Order (Portaria) No. 112/2022, of January 14, approves the Electro-Intensive Customer Statute that establishes a set of obligations and incentives intended to guarantee the facilities that benefit from it conditions of greater equality in terms of competition compared to facilities of a similar nature that operate in other Member States of the European Union.

The regime for selling electricity for electric mobility is regulated by Decree Law No. 39/2010, of April 26, which stipulates that the activity may only be carried out by duly licensed operators of charging points.

The prices of electricity and natural gas supplies from market suppliers to their customers are freely agreed between the parties. However, the prices include a portion corresponding to the tariffs established for accessing the networks in accordance with the tariff regulations for the electricity and gas sectors (Regulation No. 785/2021 and Regulation No. 368/2021 of April 28), approved by ERSE.

The electricity tariffs up to December 31, 2022 were approved (under an exceptional approval regime) by Directive No. 17/2022, of July 6. The gas tariffs for the period from October 1, 2022 to September 30, 2023 were approved by Directive No. 15/2022, of June 28.

The sale, which includes wholesale and retail activities, is freely carried out but it is contingent on registration by the Directorate General of Geology and Energy, in addition to compliance with other obligations, supply quality, and the provision of information to various competent administrative bodies, and verification of suppliers' good standing. In order to access the wholesale market scheme, the supplier must have the status of market agent, in accordance with the Regulation on Commercial Relations, and the performance in the wholesale markets is subject to the regime established in Regulation (EU) No. 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency.

Suppliers enter into contracts with the operators of the electricity transmission and distribution networks and with the operators of the transmission networks, storage and natural gas distribution infrastructure to access the networks in accordance with the Regulation on Commercial Relations in the electricity sector and the gas sector (Regulation No. 1129/2020, of December 30), the Regulation on Access to Networks and Interconnections in the electricity sector (Regulation No. 560/2014, of December 22, as amended by Regulation No. 620/2017, of December 18) and the Regulation on Access to Networks and Interconnections in the gas sector (Regulation No. 407/2021, of May 12) approved by ERSE,

The obligation to establish natural gas security reserves is incumbent on market suppliers and suppliers of last resort. The overall minimum security reserves are set by Ministerial Order (Portaria) of the Minister responsible for the energy sector and cannot be less than the quantities necessary to guarantee the consumption of protected customers and to meet the non-interruptible consumption needs of power plants under ordinary regime in the 12 months prior to the assessment month. In accordance with Ministerial Order (Portaria) No. 297/2011, of November 16, the minimum security reserves are: (i) 24 days of average consumption as of December 31, 2015; (ii) 30 days of average consumption as of December 31, 2020; and (iii) 35 days of average consumption as of December 31, 2025.

Decree-Law No. 70/2022, of October 14, establishes the creation of additional strategic reserves of natural gas, belonging to the Portuguese State, and establishes extraordinary and temporary measures for security of the gas supply.

Electricity and natural gas supplies are classified as essential public services and, therefore, subject to the rules on essential public services established in Law No. 23/96, of July 26, which establishes various mechanisms to protect customers, such as the reporting and assistance obligations of suppliers, obligations to give minimum prior notice for supply interruptions, prohibition of minimum consumption and minimum payment periods, and the limitation periods on the right to receive the prices of the services.

The activity of selling electricity and natural gas is subject to compliance with the service quality requirements and standards established in the Regulation on Service Quality approved by ERSE, which establishes the obligation of compensating customers in the event of non-compliance.

The sale of electricity and natural gas is subject to ERSE's regulation and supervision and to the regime of penalties for the energy sector established in Law No. 9/2013, of January 28. As the regulator of the sector, ERSE is the administrative authority with competence regarding supervision and application of penalties as a result of unfair commercial practices, non-compliance in the provision of promotional, informational and support services to consumers and users through call centers, duties related to the complaints book and the rules applicable to guarantees for consumers in supply contracts of essential public services.

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 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 Exception and 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 State of Exception and Emergency was successively extended on several occasions, with the most recent, Presidential Decree No. 4,440 published on February 23, 2021 in Official (Extraordinary) Gazette No. 6,615, for sixty (60) days from its publication. 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.

In Official Gazette No. 41,825, dated February 19, 2020, Presidential Decree No. 4,131 was published, declaring an energy emergency in the hydrocarbon industry, in order to adopt the necessary measures to guarantee national energy security and protect the industry against the multi-faceted aggression, both external and internal, that is being executed to affect the country's oil production and sale. This Decree ordered the creation of the Alí Rodríguez Araque Presidential Commission for the Defense, Restructuring and Reorganization of the National Oil Industry, the purpose of which is the design, supervision, coordination and promotion of all the productive, legal, administrative, labor and marketing processes of the national public oil industry and its related activities, including PDVSA and CVP; this Commission may design and apply a set of special temporary measures aimed at increasing, improving and boosting the productive, administrative, financial and commercial management capacities of the national public oil industry and its related activities.

Subsequently, in Official Gazette No. 42,071, dated February 19, 2021, the President of the Republic, through Decree No. 4,436, extended by twelve (12) months the term established in Decree No. 4,268, dated August 19, 2020, which had declared the energy emergency of the hydrocarbon industry.

In the Official Gazette (Ext.) No. 6,583, dated October 12, 2020, the National Constituent Assembly published the so-called Anti-Blockade Constitutional Law for National Development and the Guarantee of Human Rights ("Anti-Blockade Law"), effective as of the date of its publication. The law aims to establish a regulatory framework that provides public authorities with legal tools to counteract, mitigate and reduce the harmful effects caused by the unilateral coercive measures and other restrictive or punitive measures imposed against Venezuela that were issued or handed down by other States or group of States, by international organizations or other foreign public or private entities, which affect human rights, infringe international law and affect the right to free and sovereign development of the Venezuelan people as enshrined in the Constitution.

The new legislation is public policy and of public interest, so its provisions will be applicable to all branches of government, and to natural and legal persons, public and private, throughout Venezuela.

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 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.
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 Bolivars.

The Central Bank of Venezuela issued a circular on March 13, 2020, allowing authorized banks to sell foreign currency in cash, in accordance with Exchange Agreement No. 1. The circular entered into force on March 13, 2020 and established that universal banks and exchange offices regulated by the Law on Banking Sector Institutions (*Ley de Instituciones del Sector Bancario*) and authorized as specialized intermediaries to carry out retail exchange operations are subject to its application.

The same circular establishes that the above-mentioned subjects must request authorization from the BCV's Foreign Exchange Operations Management to sell foreign currency in cash derived from retail exchange operations. These are operations to sell foreign currency for amounts equal to or less than €8,500, or its equivalent in another currency.

On August 6, 2021, the National Executive Branch issued Decree No. 4,553, published in Official Gazette No. 42,185 of this same date, which established a new monetary expression of the bolivar, effective as of October 1, 2021, meaning that any amount expressed in local currency prior to this date had to be converted to the new unit by dividing the amount by one million (1,000,000).

Subsequently, the Venezuelan Central Bank issued the Rules Governing the New Monetary Expression (Resolution No. 21-08-01), in Official Gazette No. 42,191 of August 16, 2021, to regulate aspects related to the new monetary scale of the bolivar established in Decree No. 4,553 of the National Executive.