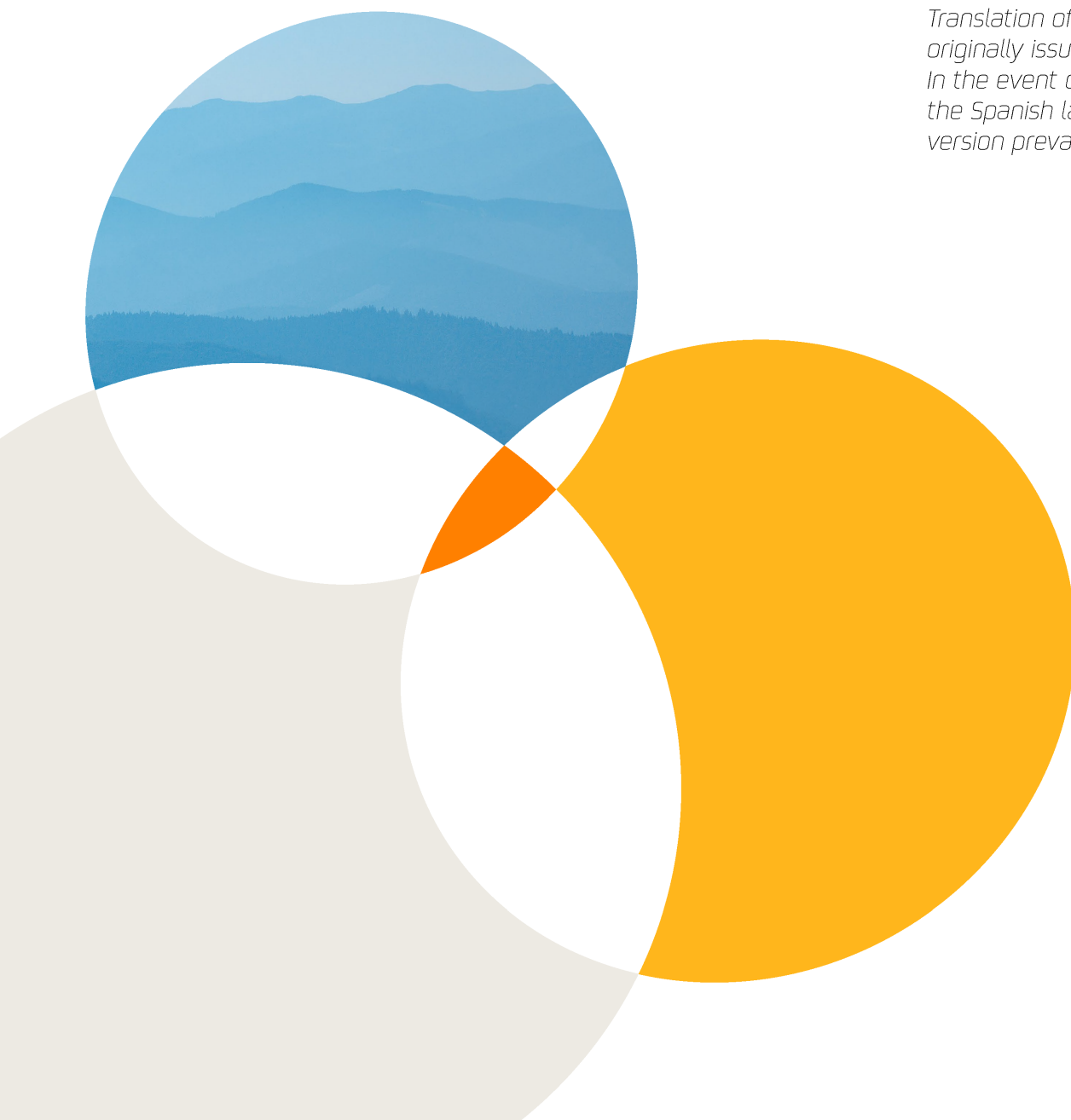


2023

REPSOL Group

Information
on oil and gas
exploration
and production
activities

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



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About this report

This document contains information on the Repsol Group's oil and gas exploration and production activities. This unaudited information is published on an annual basis and is prepared in accordance with the criteria contained in Topic 932 of the "Financial Accounting Standards Boards" (FASB), that are generally applied in the oil and gas industry.

This information includes, in relation to the Repsol Group's oil and gas exploration and production activities:

- Information on acreage.
- Exploration and development activities.
- Production of oil and gas.
- Net proved reserves, which represent the estimate volume of proved developed and undeveloped reserves of oil and gas.
- Future net cash flows, which represents an estimate of standardized measure of discounted future net cash flows relating to proved oil and gas reserves, as well as the changes with respect to those presented for the previous year.
- Results of oil and gas exploration and production activities, including revenue and expenses directly associated to the oil and gas exploration and production activities.
- Investments in oil and gas exploration and production activities, both accumulated, which shows capitalized historical costs (capitalized cost), and for the period, which represent the amounts capitalized during the year, including the dismantling obligations (cost incurred).

The financial information included in this document is consistent with that stated in the Group financial statements and management report (accessible at www.repsol.com), but there might be some differences due to the fact that the information included in the current document is presented in accordance with US GAAP (Topic 932 FASB) and the Group's official financial information is presented accordingly to International Financial Reporting Standards endorsed by the European Union (IFRS-UE).

Repsol Group estimates its proved reserves according to the standards established by the "SPE/WPC/AAPG/SPEE/SEG/SPWLA/EAGE Petroleum Resources Management System", generally referred to by its acronym "SPE-PRMS (SPE-Society of Petroleum Engineers)". The information here contained refers to the last three years (2023, 2022 y 2021).

In the Exploration and Production segment, the agreement with EIG (through its subsidiary Breakwater Energy Holdings, S.À R.L.) was completed in March 2023, for the sale of a 25% stake in Repsol's hydrocarbon Exploration and Production business for a share price of \$3.35 billion. Additionally, in 2023 the sale of Canada was completed, as well as the acquisition of Sinopec's 49% stake in the assets of the United Kingdom, following the agreement reached for the termination of the arbitration initiated by Sinopec.

Information on acreage

The following tables disclose details of Repsol's acreage and exploration and development activities by geographical region:

- Developed and undeveloped acreage: developed acreage consists of surface area that contains productive wells, while undeveloped acreage encompasses surface area that does not contain productive wells or in which these are not capable of producing hydrocarbons.

(km ²)	Developed & undeveloped acreage											
	2023				2022				2021			
	Developed		Undeveloped		Developed		Undeveloped		Developed		Undeveloped	
	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾
North America	1,152	895	8,718	4,098	3,180	2,219	18,415	7,912	3,420	2,414	19,756	8,815
Canada	–	–	–	–	2,070	1,331	4,735	762	2,422	1,604	5,937	1,651
United States	1,152	895	4,902	2,841	1,109	888	4,560	2,628	998	810	4,166	2,322
Rest	–	–	3,816	1,257	–	–	9,120	4,522	–	–	9,653	4,842
Latin America	2,875	648	44,777	20,071	2,915	688	60,064	28,088	2,960	704	62,434	28,500
Brazil	838	80	3,294	1,628	838	80	6,790	3,796	838	80	7,163	3,492
Colombia	268	76	32,184	15,495	268	77	39,470	19,429	268	77	39,470	19,429
Peru	238	48	1,456	245	238	48	1,456	245	238	48	1,456	245
Trinidad & Tobago	152	45	2,794	838	152	45	2,794	838	152	45	2,794	838
Venezuela	806	192	2,190	663	806	192	2,185	661	806	192	2,185	661
Rest	575	207	2,860	1,202	615	247	7,370	3,119	660	263	9,367	3,835
Africa	2,785	938	17,057	4,641	2,777	816	17,065	4,642	2,777	763	17,065	4,696
Europe	1,575	872	1,523	1,123	1,573	489	2,867	1,440	1,588	499	9,535	4,773
Norway	469	73	331	143	469	73	1,594	521	478	80	1,594	521
United Kingdom	1,084	781	410	261	1,082	399	428	138	1,087	402	425	136
Rest	22	17	783	719	22	17	844	780	22	17	7,515	4,116
Asia & Oceania	2,562	728	2,959	1,966	2,562	970	10,531	6,598	3,937	1,553	65,346	52,160
Indonesia	2,555	726	2,506	1,646	2,555	968	10,078	6,278	2,555	968	10,614	6,707
Malaysia	–	–	–	–	–	–	–	–	1,293	526	1,004	351
Russia	–	–	–	–	–	–	–	–	–	–	3,519	1,760
Rest	7	2	453	320	7	2	453	320	89	59	50,208	43,341
Total	10,949	4,081	75,034	31,898	13,006	5,183	108,942	48,680	14,682	5,933	174,135	98,944

(1) Gross acreage is the area in which Repsol owns an interest.

(2) Net acreage is the total of the fractional interest in the gross acreage position.

- Acreege under development/production and exploration: acreage under development consist of surface area occupied by blocks under development and/or production, while acreage under exploration is surface area occupied by assets in the exploration phase.

(km ²)	Acreage in development or Exploration											
	2023				2022				2021			
	Development		Exploration		Development		Exploration		Development		Exploration	
	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾	Gross ⁽¹⁾	Net ⁽²⁾
North America	2,545	1,867	7,324	3,127	5,435	3,749	16,160	6,382	6,471	4,550	16,705	6,679
Canada	–	–	–	–	2,901	1,887	3,904	206	4,439	3,039	3,920	217
United States	2,545	1,867	3,508	1,870	2,534	1,862	3,136	1,654	2,032	1,511	3,131	1,621
Rest	–	–	3,816	1,257	–	–	9,120	4,522	–	–	9,653	4,842
Latin America	13,667	3,646	33,985	17,073	14,062	4,046	48,917	24,731	15,450	4,531	49,944	24,673
Brazil	1,691	250	2,441	1,457	1,691	250	5,937	3,625	1,691	250	6,310	3,321
Colombia	1,432	209	31,019	15,362	1,432	211	38,305	19,295	1,432	211	38,305	19,295
Peru	1,693	292	–	–	1,693	292	–	–	1,693	292	–	–
Trinidad & Tobago	2,945	884	–	–	2,945	884	–	–	2,945	884	–	–
Venezuela	2,995	855	–	–	2,990	853	–	–	2,990	853	–	–
Rest	2,910	1,155	525	254	3,310	1,555	4,675	1,810	4,698	2,041	5,329	2,056
Africa	11,153	2,446	8,689	3,132	11,153	2,326	8,689	3,132	11,153	2,326	8,689	3,132
Europe	2,677	1,574	421	421	2,729	1,087	1,711	842	2,729	1,092	8,393	4,180
Norway	800	217	–	–	838	227	1,225	368	847	233	1,225	368
United Kingdom	1,477	1,026	16	16	1,491	529	20	9	1,482	528	31	10
Rest	400	331	405	405	400	331	466	466	400	331	7,137	3,802
Asia & Oceania	2,478	806	3,042	1,887	2,478	1,048	10,614	6,520	4,857	1,983	64,425	51,730
Indonesia	2,018	484	3,042	1,887	2,018	727	10,614	6,520	2,018	727	11,151	6,949
Malaysia	–	–	–	–	–	–	–	–	2,297	877	–	–
Russia	–	–	–	–	–	–	–	–	–	–	3,519	1,760
Rest	460	322	–	–	460	322	–	–	542	379	49,756	43,021
Total	32,521	10,339	53,462	25,640	35,856	12,256	86,092	41,607	40,660	14,483	148,157	90,393

(1) Gross acreage surface area is the area in which Repsol owns an interest.

(2) Net acreage is the total of the fractional interest in the gross acreage position.

Production

The next table shows the productions in volume and the number of Repsol's productive wells by geographic area:

	Net Production of liquids and natural gas by area									Productive wells by area					
	Liquids (Mbbbl)			Natural gas (bcf)			Total (Mbep)			Oil			Gas		
	2023	2022	2021	2023	2022	2021	2023	2022	2021	2023	2022	2021	2023	2022	2021
North America	22	17	16	324	250	224	79	62	56	1,132	974	1,852	860	1,877	1,975
Canada	1	4	5	29	43	51	7	11	14	—	57	986	—	1,182	1,289
United States	20	13	11	295	207	174	73	50	42	1,132	917	866	860	695	686
Latin America	26	27	29	383	381	382	95	95	97	691	711	717	210	224	207
Brazil	13	14	14	7	9	9	14	15	16	30	30	29	—	—	—
Colombia	4	4	3	—	—	—	4	4	3	467	484	458	—	—	—
Peru	5	4	4	78	70	56	19	17	14	—	—	—	27	28	28
Trinidad & Tobago	—	—	1	133	142	140	24	26	26	3	3	1	61	55	45
Venezuela	3	3	2	112	104	103	23	21	21	153	117	135	25	30	31
Rest	2	2	4	53	57	74	11	12	17	38	77	94	97	111	103
Africa	14	12	15	13	16	26	16	15	20	391	383	377	28	25	22
Europe	13	11	10	27	30	30	17	16	16	190	184	187	18	13	15
Norway	6	4	4	22	25	26	10	9	9	39	33	27	16	11	13
United Kingdom	7	7	6	5	5	4	7	7	7	151	151	160	2	2	2
Asia & Oceania	0.4	1	5	59	71	87	11	13	20	1	2	84	37	33	62
Indonesia	0.4	—	—	59	70	73	11	13	13	1	2	2	37	33	30
Malaysia	—	—	2	—	1	14	—	—	5	—	—	79	—	—	31
Russia	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—
Rest	—	—	1	—	—	1	—	—	1	—	—	3	—	—	1
Total	75	67	75	807	748	750	219	201	209	2,405	2,254	3,217	1,153	2,172	2,281

Exploration and development activities

The following tables show Repsol's completed exploratory and developed wells by geographical region:

	Exploration wells completed and in progress ⁽¹⁾														
	Positive			Negative			Under evaluation			Total completed			In progress		
	2023	2022	2021	2023	2022	2021	2023	2022	2021	2023	2022	2021	2023	2022	2021
North America	—	—	1	1	1	1	—	—	—	1	1	2	—	—	—
United States	—	—	1	1	1	—	—	—	—	1	1	1	—	—	—
Rest	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—
Latin America	3	2	1	—	4	—	1	—	—	4	6	1	1	1	1
Colombia	3	2	—	—	2	—	1	—	—	4	4	—	1	1	—
Rest	—	—	1	—	2	—	—	—	—	—	2	1	—	—	1
Africa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Europe	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—
Norway	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—
Asia & Oceania	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—
Indonesia	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—
Total	3	2	2	1	6	2	1	—	—	5	8	4	1	1	1

(1) Excluding appraisal wells (1 completed with positive result in 2023 and 1 that was under evaluation on 12/31/2023 was declared positive in January 2024; 3 completed in 2022, 2 completed positive and 1 completed negative; 2 completed in 2021, 2 completed positives and 1 in progress).

	Completed development wells ⁽¹⁾											
	Positive			Negative			Under evaluation			Total		
	2023	2022	2021	2023	2022	2021	2023	2022	2021	2023	2022	2021
North America	115	78	19	2	1	—	1	1	—	118	80	19
Canada	1	—	—	—	—	—	1	1	—	2	1	—
United States	114	78	19	2	1	—	—	—	—	116	79	19
Latin America	19	24	12	1	4	—	—	1	3	20	29	15
Brazil	—	—	—	—	—	—	—	—	1	—	—	1
Colombia	13	18	9	1	4	—	—	—	1	14	22	10
Trinidad & Tobago	—	—	3	—	—	—	—	—	—	—	—	3
Rest	6	6	—	—	—	—	—	1	1	6	7	1
Africa	19	14	—	—	—	—	—	—	—	19	14	—
Europe	7	11	8	1	1	—	2	2	1	10	14	9
Norway	7	7	6	—	—	—	1	2	1	8	9	7
United Kingdom	—	4	2	1	1	—	1	—	—	2	5	2
Asia & Oceania	—	1	3	—	—	—	—	—	1	—	1	4
Indonesia	—	1	3	—	—	—	—	—	1	—	1	4
Total	160	128	42	4	6	—	3	4	5	167	138	47

(1) Excluding pilot wells for development concept (1 in 2021, with positive result).

Net proved oil and gas reserves

The tables below reflect the net developed and undeveloped proved reserves of crude oil, condensates, natural gas liquids and natural gas, including the volume of reserves equivalent to the financial income obtained under certain production-sharing contracts and service contracts in force as of December 31, 2023, 2022 and 2021, and the variations therein.

Repsol applies the criteria established by the Society of Petroleum Engineers' Petroleum Resource Management System (SPE/WPC/AAPG/SPEE/SEG/SPWLA/EAGE) to estimate its proved and unproved reserves of oil and gas. See Note 4.5.1 "Calculating the recoverable amount of the assets" of the 2023 Consolidated Financial Statements.

In accordance with these rules, proved oil and gas reserves are those quantities of crude oil, condensates, natural gas liquids and natural gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be commercially recoverable –from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations– prior to the time at which contracts providing the right to operate expire, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonable certain that it will commence the project within a reasonable time.

In determining net reserves, we exclude from our reported reserves royalties due to others, whether payable in cash or in kind, where the royalty owner has a direct interest in the underlying production and is able to make lifting and sales arrangements independently. By contrast, to the extent that royalty payments required to be made to a third party, whether payable in cash or in kind, are a financial obligation, or are substantially equivalent to a production or severance tax, the related reserves are not excluded from our reported reserves despite the fact that such payments are referred to as "royalties" under local rules. Repsol follows the same methodology in reporting our production amounts.

All of Repsol's oil and gas reserves have been estimated by the company's petroleum engineers.

To control the quality of reserves booked, Repsol has established a process that is integrated into Repsol's internal control system. The process to manage reserves booking is centrally controlled by the Reserve Control Direction which is independent from the upstream activities and it is overseen by the Audit and Control Committee of the Repsol's Board. Furthermore, the volumes booked are submitted to third party engineers for a reserves audit on a periodic basis (at least 95% of the reserves are externally audited on a three years cycle).

For those areas submitted to third party audit, Repsol's proved reserves figures have to be within 7% of the third party reserves audit figures for Repsol to declare that the reserves information meets the third party reserves audit standards. In the event that the difference is greater than 7% tolerance, Repsol reestimates its proved reserves to achieve this tolerance level or discloses the third party reserves audit figures. In 2023, Repsol commissioned an external audit for various areas of South America, North America and North Africa.

Estimates of developed and undeveloped proved reserves of crude oil, condensate and natural gas liquids:

<i>Millions of barrels</i>	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Reserves at December 31st, 2020⁽¹⁾	381	96	77	–	57	107	30	15
Revisions of previous estimates	36	16	–	–	1	17	2	1
Improved recovery	1	–	–	–	1	–	–	–
Extensions and discoveries	51	50	–	–	1	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	(6)	–	–	–	–	(4)	–	(2)
Production ⁽¹⁾	(48)	(11)	(4)	–	(10)	(15)	(4)	(3)
Reserves at December 31st, 2021⁽¹⁾⁽²⁾	414	151	72	–	49	105	27	10
Revisions of previous estimates	19	9	(4)	–	11	6	(3)	–
Improved recovery	10	–	–	–	10	–	–	–
Extensions and discoveries	122	122	–	–	–	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	(27)	–	–	–	(18)	–	–	(9)
Production ⁽¹⁾	(42)	(13)	(4)	–	(7)	(12)	(4)	(1)
Reserves at December 31st, 2022⁽¹⁾	496	269	63	–	45	99	19	1
Revisions of previous estimates	19	(13)	1	–	4	18	9	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	(15)	(15)	–	–	1	–	–	–
Purchases of minerals in place ⁽³⁾	45	7	–	–	–	–	38	–
Sales of minerals in place	(6)	–	–	–	(6)	–	–	–
Production ⁽¹⁾	(57)	(20)	(5)	–	(5)	(14)	(13)	–
Reserves at December 31st, 2023⁽¹⁾⁽³⁾	482	227	59	–	39	103	53	1
<i>Millions of barrels</i>								
	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Equity-accounted investees								
Reserves at December 31st, 2020⁽¹⁾	196	–	–	28	112	–	37	20
Revisions of previous estimates	4	–	–	–	6	–	(1)	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	–	–	–	–	–	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	(19)	–	–	–	–	–	–	(19)
Production ⁽¹⁾	(27)	–	–	(2)	(17)	–	(6)	(1)
Reserves at December 31st, 2021⁽¹⁾⁽²⁾	155	–	–	25	101	–	30	–
Revisions of previous estimates	8	–	–	2	7	–	(1)	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	–	–	–	–	–	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–
Production ⁽¹⁾	(25)	–	–	(3)	(16)	–	(7)	–
Reserves at December 31st, 2022⁽¹⁾	138	–	–	24	92	–	22	–
Revisions of previous estimates	–	–	–	1	(1)	–	–	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	76	–	–	–	76	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place ⁽³⁾	(22)	–	–	–	–	–	(22)	–
Production ⁽¹⁾	(18)	–	–	(3)	(15)	–	–	–
Reserves at December 31st, 2023⁽¹⁾	174	–	–	22	152	–	–	–
Total fully-consolidated & equity-accounted	656	227	59	22	190	103	53	1

Estimates of developed proved reserves of crude oil, condensate and natural gas liquids:

<i>Millions of barrels</i>	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
At December 31st, 2020	392	30	50	27	141	77	39	27
Fully-consolidated entities	217	30	50	–	41	77	6	12
Equity-accounted investees	175	–	–	27	100	–	33	15
At December 31st, 2021	353	47	52	24	131	67	24	8
Fully-consolidated entities	212	47	52	–	34	67	4	8
Equity-accounted investees	141	–	–	24	97	–	20	–
At December 31st, 2022	322	53	46	23	104	62	32	1
Fully-consolidated entities	191	53	46	–	16	62	12	1
Equity-accounted investees	131	–	–	23	88	–	20	–
At December 31st, 2023	320	56	37	21	86	68	51	1
Fully-consolidated entities	224	56	37	–	11	68	51	1
Equity-accounted investees	96	–	–	21	75	–	–	–

Note: The aggregated changes in reserves and total reserves at December 31 may differ from the individual values shown because the calculations use more precise figures than those shown in the table.

- (1) Total net proved developed and undeveloped reserves at December 31, 2023, 2022, 2021 and 2020 include an estimated volume of approximately 35, 27, 30 and 46 million barrels of oil equivalent, respectively, corresponding to royalty payments which, as described above, constitute a financial obligation or are substantially equivalent to a production or equivalent tax. Net production 2023, 2022, 2021 and 2020 includes an estimated volume of 3, 3, 3 and 4 million barrels of oil equivalent, respectively, in connection with such payments.
- (2) Total net proved reserves at December 31, 2021 include a volume of 10 million barrels of oil equivalent corresponding to assets classified as held for sale under IFRS-UE.
- (3) In October 2023, the remaining 49% of the company RRUk was acquired, the company's reserves are presented in fully-consolidated entities at the closing of 2023.

Estimates of developed and undeveloped proved reserves of natural gas:

Thousand Millions of Standard Cubic Feet

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Reserves at December 31st, 2020⁽¹⁾	4,403	1,969	1,467	21	415	193	71	267
Revisions of previous estimates	104	(74)	–	1	29	(6)	13	140
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	1,221	1,217	–	–	4	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	(57)	–	–	–	–	(55)	–	(2)
Production ⁽¹⁾	(465)	(174)	(56)	(4)	(92)	(26)	(26)	(87)
Reserves at December 31st, 2021⁽¹⁾⁽²⁾	5,206	2,938	1,411	18	356	106	58	318
Revisions of previous estimates	8	67	(104)	1	31	(1)	25	(10)
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	(5)	(5)	–	–	–	–	–	–
Purchases of minerals in place	378	378	–	–	–	–	–	–
Sales of minerals in place	(66)	–	–	–	(23)	–	–	(43)
Production ⁽¹⁾	(468)	(207)	(70)	(3)	(75)	(16)	(25)	(71)
Reserves at December 31st, 2022⁽¹⁾	5,053	3,170	1,237	16	289	89	58	194
Revisions of previous estimates	231	156	12	(10)	26	10	–	37
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	(39)	(58)	–	–	19	–	–	–
Purchases of minerals in place ⁽³⁾	55	10	–	–	–	22	24	–
Sales of minerals in place	(126)	–	–	–	(126)	–	–	–
Production ⁽¹⁾	(535)	(295)	(78)	(3)	(59)	(13)	(27)	(59)
Reserves at December 31st, 2023⁽¹⁾⁽³⁾	4,639	2,982	1,170	3	149	108	55	172
Thousand Millions of Standard Cubic Feet								
	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Equity-accounted investees								
Reserves at December 31st, 2020⁽¹⁾	2,759	–	–	1,554	1,194	–	12	–
Revisions of previous estimates	(133)	–	–	34	(173)	–	5	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	10	–	–	–	10	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–
Production ⁽¹⁾	(285)	–	–	(99)	(182)	–	(4)	–
Reserves at December 31st, 2021⁽¹⁾⁽²⁾	2,351	–	–	1,489	849	–	13	–
Revisions of previous estimates	30	–	–	65	(40)	–	5	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	–	–	–	–	–	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–
Production ⁽¹⁾	(280)	–	–	(100)	(175)	–	(5)	–
Reserves at December 31st, 2022⁽¹⁾	2,102	–	–	1,454	634	–	14	–
Revisions of previous estimates	(3)	–	–	1	(4)	–	–	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	201	–	–	–	201	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place ⁽³⁾	(14)	–	–	–	–	–	(14)	–
Production ⁽¹⁾	(272)	–	–	(109)	(163)	–	–	–
Reserves at December 31st, 2023⁽¹⁾	2,014	–	–	1,346	668	–	–	–
Total fully-consolidated & equity-accounted entities	6,653	2,982	1,170	1,348	817	108	55	172

Estimates of developed proved reserves of natural gas:

Thousand Millions of Standard Cubic Feet

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
At December 31st, 2020	5,112	1,226	914	1,415	1,081	143	75	257
Fully-consolidated entities	3,022	1,226	914	21	397	143	64	257
Equity-accounted investees	2,090	–	–	1,394	684	–	11	–
At December 31st, 2021	4,684	1,082	1,000	1,348	844	60	67	282
Fully-consolidated entities	2,837	1,082	1,000	18	340	60	54	282
Equity-accounted investees	1,847	–	–	1,330	504	–	13	–
At December 31st, 2022	4,402	1,249	884	1,377	604	51	65	172
Fully-consolidated entities	2,708	1,249	884	16	284	51	52	172
Equity-accounted investees	1,694	–	–	1,361	320	–	13	–
At December 31st, 2023	4,364	1,705	694	1,235	475	64	51	139
Fully-consolidated entities	2,803	1,705	694	3	147	64	51	139
Equity-accounted investees	1,561	–	–	1,232	328	–	–	–

Notes: The aggregated changes in reserves and total reserves at December 31 may differ from the individual values shown because the calculations use more precise figures than those shown in the table.

- (1) Total net proved developed and undeveloped reserves at December 31, 2023, 2022, 2021 and 2020 include an estimated volume of approximately 616, 657, 717 and 781 billion cubic feet of gas, respectively, corresponding to royalty payments which, as described above, constitute a financial obligation or are substantially equivalent to a production or equivalent tax. Net production in 2023, 2022, 2021 and 2020 includes an estimated volume of 58, 56, 53 and 64 billion cubic feet of gas, respectively, in connection with such payments.
- (2) Total net proved reserves at December 31, 2021 include a volume of 44 billion cubic feet of gas corresponding to assets classified as held for sale under IFRS-UE.
- (3) In October 2023, the remaining 49% of the company RRUUK was acquired, the company's reserves are presented in fully-consolidated entities at the closing of 2023.

Estimates of developed and undeveloped proved reserves of crude oil, condensate, natural gas liquids and natural gas:

Millions of Barrels of Oil Equivalent

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Reserves at December 31st, 2020⁽¹⁾	1,165	447	338	4	131	141	42	62
Revisions of previous estimates	55	3	–	–	6	16	4	26
Improved recovery	1	–	–	–	1	–	–	–
Extensions and discoveries	268	267	–	–	1	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	(16)	–	–	–	–	(14)	–	(2)
Production ⁽¹⁾	(131)	(42)	(14)	(1)	(27)	(20)	(9)	(19)
Reserves at December 31st, 2021⁽¹⁾⁽²⁾	1,341	674	324	3	112	124	37	67
Revisions of previous estimates	20	20	(23)	–	17	6	1	(2)
Improved recovery	10	–	–	–	10	–	–	–
Extensions and discoveries	121	121	–	–	–	–	–	–
Purchases of minerals in place	67	67	–	–	–	–	–	–
Sales of minerals in place	(39)	–	–	–	(22)	–	–	(17)
Production ⁽¹⁾	(125)	(50)	(17)	(1)	(21)	(15)	(9)	(13)
Reserves at December 31st, 2022⁽¹⁾	1,396	833	284	3	97	115	29	36
Revisions of previous estimates	59	15	3	(2)	9	20	9	7
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	(22)	(26)	–	–	4	–	–	–
Purchases of minerals in place ⁽³⁾	55	9	–	–	–	4	43	–
Sales of minerals in place	(28)	–	–	–	(28)	–	–	–
Production ⁽¹⁾	(152)	(73)	(19)	–	(16)	(16)	(17)	(11)
Reserves at December 31st, 2023⁽¹⁾⁽³⁾	1,308	758	268	–	65	122	63	32
<i>Millions of Barrels of Oil Equivalent</i>								
	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Equity-accounted investees								
Reserves at December 31st, 2020⁽¹⁾	687	–	–	304	324	–	39	20
Revisions of previous estimates	(19)	–	–	6	(25)	–	–	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	2	–	–	–	2	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	(19)	–	–	–	–	–	–	(19)
Production ⁽¹⁾	(78)	–	–	(20)	(50)	–	(7)	(1)
Reserves at December 31st, 2021⁽¹⁾⁽²⁾	574	–	–	290	252	–	32	–
Revisions of previous estimates	14	–	–	13	–	–	–	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	–	–	–	–	–	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–
Production ⁽¹⁾	(75)	–	–	(20)	(47)	–	(7)	–
Reserves at December 31st, 2022⁽¹⁾	513	–	–	283	205	–	25	–
Revisions of previous estimates	(1)	–	–	1	(2)	–	–	–
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	112	–	–	–	112	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place ⁽³⁾	(25)	–	–	–	–	–	(25)	–
Production ⁽¹⁾	(66)	–	–	(22)	(44)	–	–	–
Reserves at December 31st, 2023⁽¹⁾	533	–	–	262	271	–	–	–
Total fully-consolidated & equity-accounted entities	1,841	758	268	262	336	122	63	32

Estimates of developed proved reserves of crude oil, condensate, natural gas liquids and natural gas:

<i>Millions of Barrels of Oil Equivalent</i>	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
At December 31st, 2020	1,303	249	213	279	334	103	52	73
Fully-consolidated entities	756	249	213	4	112	103	17	58
Equity-accounted investees	547	–	–	275	222	–	35	15
At December 31st, 2021	1,188	240	231	264	281	78	37	58
Fully-consolidated entities	717	240	231	3	94	78	14	58
Equity-accounted investees	471	–	–	261	187	–	23	–
At December 31st, 2022	1,107	276	204	268	212	71	44	32
Fully-consolidated entities	673	276	204	3	67	71	21	32
Equity-accounted investees	434	–	–	265	145	–	23	–
At December 31st, 2023	1,097	359	160	240	171	80	60	25
Fully-consolidated entities	723	359	160	–	38	80	60	25
Equity-accounted investees	374	–	–	240	133	–	–	–

Notes: The aggregated changes in reserves and total reserves at December 31 may differ from the individual values shown because the calculations use more precise figures than those shown in the table.

- (1) Total net proved developed and undeveloped reserves at December 31, 2023, 2022, 2021 and 2020 include an estimated volume of approximately 145, 144, 157 and 186 million barrels of oil equivalent, respectively, corresponding to royalty payments which, as described above, constitute a financial obligation or are substantially equivalent to a production or equivalent tax. Net production in 2023, 2022, 2021 and 2020 includes an estimated volume of 14, 13, 13 and 15 million barrels of oil equivalent, respectively, in connection with such payments.
- (2) Total net proved reserves at December 31, 2021 include a volume of 18 million barrels of oil equivalent corresponding to assets classified as held for sale under IFRS-UE.
- (3) In October 2023, the remaining 49% of the company RRUK was acquired, the company's reserves are presented in fully-consolidated entities at the closing of 2023.

Standardized future cash flows

Standardized measure of discounted future net cash flows and changes therein relating to proved oil and gas reserves

Projected net cash flows were estimated in accordance with the criteria established by the “SPE/WPC/AAPG/SPEE/SEG/SPWLA/EAGE Petroleum Resources Management System, commonly referred to by its acronym, SPE-PRMS (SPE standing for the Society of Petroleum Engineers)”. Oil and gas prices and other financial assumptions regarding the outlook for costs reflect the Company's best estimates for the purposes of valuing its assets (See Note 4.5.1 of the 2023 Consolidated Financial Statements). These assumptions are applied to estimated future production in respect of its proved oil and gas reserves as of the most recent reporting date, less estimated future development and production costs (based on current costs) in respect of these same proved reserves, all of which assuming that prevailing economic conditions are sustained.

Future production costs were estimated on based on the cost structure at the end of the year and are projected on the basis of the above-mentioned assumptions. Future development costs were calculated on the basis of technical studies conducted by Repsol and by the operators holding joint title with Repsol. The taxes projected for each of the future years were determined under the contractual and tax regime prevailing at the end of the year. The rate used to discount the future net revenues was 10%.

The present value of the future net cash flows estimated on the basis of the aforementioned assumptions is not intended to be interpreted, and should not be interpreted, as the fair value of the Group's oil and gas reserves. An estimation of the fair value of these reserves should also include the future exploitation of reserves not yet classified as proved reserves and costs and a discount rate which represents the time value of money at the calculation date and the uncertainties inherent to estimating the reserves.

The following table shows the present value of the future net revenues relating to proved oil and gas reserves, calculated on the basis of the aforementioned assumptions.

Millions of euros

At December 31st 2021	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Future cash inflows	39,106	16,590	7,454	28	2,992	7,495	2,251	2,296
Future production costs	(14,714)	(7,086)	(3,062)	(26)	(1,792)	(932)	(1,074)	(742)
Future development and abandonment costs	(6,986)	(3,479)	(675)	(2)	(1,130)	(562)	(921)	(217)
Future income tax expenses	(5,629)	(114)	(1,175)	(3)	(147)	(3,732)	(35)	(423)
Future net cash flows after taxes	11,777	5,911	2,542	(3)	(77)	2,269	221	914
10% annual discount for estimated timing of cash flows	(4,314)	(2,649)	(1,264)	–	603	(769)	(66)	(169)
Discounted future net cash flows	7,463	3,262	1,278	(3)	526	1,500	155	745
Equity-accounted investees								
Future cash inflows	19,147	–	–	7,722	9,398	–	2,027	–
Future production costs	(8,574)	–	–	(2,319)	(4,626)	–	(1,629)	–
Future development and abandonment costs	(4,192)	–	–	(223)	(1,491)	–	(2,478)	–
Future income tax expenses	(1,975)	–	–	(1,919)	(910)	–	854	–
Future net cash flows after taxes	4,406	–	–	3,261	2,371	–	(1,226)	–
10% annual discount for estimated timing of cash flows	(1,474)	–	–	(1,608)	(674)	–	808	–
Discounted future net cash flows	2,932	–	–	1,653	1,697	–	(418)	–
Total discounted future net cash flows	10,395	3,262	1,278	1,650	2,223	1,500	(263)	745

Millions of euros

At December 31st 2022

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Future cash inflows	54,118	29,012	9,772	26	3,353	7,993	2,630	1,332
Future production costs	(19,633)	(12,310)	(3,627)	(23)	(1,620)	(1,004)	(679)	(370)
Future development and abandonment costs	(10,139)	(6,868)	(826)	(1)	(974)	(508)	(882)	(80)
Future income tax expenses	(8,207)	(745)	(1,743)	(3)	(494)	(4,055)	(848)	(319)
Future net cash flows after taxes	16,139	9,089	3,576	(1)	265	2,426	221	563
10% annual discount for estimated timing of cash flows	(6,285)	(4,277)	(1,409)	–	244	(762)	31	(112)
Discounted future net cash flows	9,854	4,812	2,167	(1)	509	1,664	252	451
Equity-accounted investees								
Future cash inflows	16,985	–	–	5,813	9,249	–	1,923	–
Future production costs	(7,266)	–	–	(1,910)	(4,055)	–	(1,301)	–
Future development and abandonment costs	(4,422)	–	–	(266)	(1,561)	–	(2,595)	–
Future income tax expenses	(1,703)	–	–	(1,410)	(1,057)	–	764	–
Future net cash flows after taxes	3,594	–	–	2,227	2,576	–	(1,209)	–
10% annual discount for estimated timing of cash flows	(649)	–	–	(932)	(446)	–	729	–
Discounted future net cash flows	2,945	–	–	1,295	2,130	–	(480)	–
Total discounted future net cash flows	12,799	4,812	2,167	1,294	2,639	1,664	(228)	451

Millions of euros

At December 31st 2023

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Future cash inflows	50,155	25,826	7,112	3	2,749	8,743	4,607	1,115
Future production costs	(19,411)	(10,765)	(2,979)	(3)	(1,050)	(957)	(3,259)	(398)
Future development and abandonment costs	(11,391)	(5,463)	(749)	–	(217)	(501)	(4,425)	(36)
Future income tax expenses	(5,926)	(780)	(1,078)	–	(482)	(4,516)	1,177	(247)
Future net cash flows after taxes	13,427	8,818	2,306	–	1,000	2,769	(1,900)	434
10% annual discount for estimated timing of cash flows	(5,139)	(3,807)	(978)	–	(362)	(950)	1,056	(98)
Discounted future net cash flows	8,288	5,011	1,328	–	638	1,819	(844)	336
Equity-accounted investees								
Future cash inflows	19,277	–	–	5,320	13,957	–	–	–
Future production costs	(7,717)	–	–	(1,777)	(5,940)	–	–	–
Future development and abandonment costs	(3,574)	–	–	(210)	(3,364)	–	–	–
Future income tax expenses	(2,735)	–	–	(1,317)	(1,418)	–	–	–
Future net cash flows after taxes	5,251	–	–	2,016	3,235	–	–	–
10% annual discount for estimated timing of cash flows	(2,279)	–	–	(833)	(1,446)	–	–	–
Discounted future net cash flows	2,972	–	–	1,183	1,789	–	–	–
Total discounted future net cash flows ⁽¹⁾	11,260	5,011	1,328	1,183	2,427	1,819	(844)	336

(1) In October 2023, the remaining 49% of the company RRUUK was acquired, the company's discounted future net cash flows are presented in fully-consolidated entities at the closing of 2023.

Changes in Standardized measure of discounted future net cash flows relating to proved oil and gas reserves

The detail of the changes in the standardized measure of discounted future net cash flows for 2021, 2022 and 2023 as follows:

<i>Millions of euros</i>	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Balance at December 31st, 2020	4,570	1,417	708	8	612	1,214	15	596
Changes due to sale or transfer prices of future production costs	2,214	1,024	694	(13)	(76)	225	346	14
Changes in future development costs	(284)	(334)	(33)	(1)	(118)	3	135	64
Oil and gas sales and transfers in the period	(1,532)	(292)	(92)	(3)	(151)	(555)	(33)	(406)
Net changes due to extensions, discoveries and improvements in the recovery of reserves	1,181	1,164	–	–	17	–	–	–
Net changes due to purchases/sales of assets	64	–	–	–	–	58	(4)	10
Net changes due to revisions in quantity estimates	945	(149)	64	–	105	554	70	301
Previously estimated development costs incurred in the year	455	105	23	–	55	32	192	48
Effect of discounting to a different date and exchange rate effect	892	318	149	1	99	216	15	94
Other non-specific changes	–	–	–	–	–	–	–	–
Changes in income tax	(1,042)	9	(235)	5	(17)	(247)	(581)	24
Net change	2,893	1,845	570	(11)	(86)	286	140	149
Balance at December 31st, 2021	7,463	3,262	1,278	(3)	526	1,500	155	745
Changes due to sale or transfer prices of future production costs	3,686	605	1,565	(2)	203	365	900	50
Changes in future development costs	(843)	(625)	(117)	–	(96)	19	6	(30)
Oil and gas sales and transfers in the period	(3,334)	(835)	(385)	1	(219)	(849)	(675)	(372)
Net changes due to extensions, discoveries and improvements in the recovery of reserves	1,126	913	–	–	213	–	–	–
Net changes due to purchases/sales of assets	154	333	–	–	13	–	–	(192)
Net changes due to revisions in quantity estimates	534	122	(24)	2	(82)	268	200	48
Previously estimated development costs incurred in the year	1,171	753	36	1	94	79	199	9
Effect of discounting to a different date and exchange rate effect	1,085	521	180	–	78	221	(4)	89
Other non-specific changes	–	–	–	–	–	–	–	–
Changes in income tax	(1,188)	(237)	(366)	–	(221)	61	(529)	104
Net change	2,391	1,550	889	2	(17)	164	97	(294)
Balance at December 31st, 2022	9,854	4,812	2,167	(1)	509	1,664	252	451
Changes due to sale or transfer prices of future production costs	(845)	122	(848)	(16)	28	321	(447)	(5)
Changes in future development costs	(128)	(307)	9	(1)	6	(4)	153	16
Oil and gas sales and transfers in the period	(4,233)	(1,343)	(695)	1	(233)	(907)	(726)	(330)
Net changes due to extensions, discoveries and improvements in the recovery of reserves	(282)	(279)	–	–	(3)	–	–	–
Net changes due to purchases/sales of assets	(1,110)	62	–	–	157	36	(1,365)	–
Net changes due to revisions in quantity estimates	782	244	31	16	(48)	668	(211)	82
Previously estimated development costs incurred in the year	1,743	1,354	59	–	132	74	96	28
Effect of discounting to a different date and exchange rate effect	571	309	115	–	37	71	24	15
Other non-specific changes	–	–	–	–	–	–	–	–
Changes in income tax	1,936	37	490	1	53	(104)	1,380	79
Net change	(1,566)	199	(839)	1	129	155	(1,096)	(115)
Balance at December 31st, 2023 ⁽¹⁾	8,288	5,011	1,328	–	638	1,819	(844)	336

Millions of euros

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Equity-accounted investees								
Balance at December 31st, 2020	3,190	–	–	1,474	1,958	–	(282)	40
Changes due to sale or transfer prices of future production costs	(76)	–	–	(10)	(92)	–	26	–
Changes in future development costs	(399)	–	–	(7)	(293)	–	(99)	–
Oil and gas sales and transfers in the period	(839)	–	–	(166)	(540)	–	(111)	(22)
Net changes due to extensions, discoveries and improvements in the recovery of reserves	(2)	–	–	–	(2)	–	–	–
Net changes due to purchases/sales of assets	(33)	–	–	–	–	–	(13)	(20)
Net changes due to revisions in quantity estimates	296	–	–	31	270	–	(5)	–
Previously estimated development costs incurred in the year	342	–	–	5	213	–	124	–
Effect of discounting to a different date and exchange rate effect	522	–	–	268	318	–	(66)	2
Other non-specific changes	–	–	–	–	–	–	–	–
Changes in income tax	(69)	–	–	58	(135)	–	8	–
Net change	(258)	–	–	179	(261)	–	(136)	(40)
Balance at December 31st, 2021	2,932	–	–	1,653	1,697	–	(418)	–
Changes due to sale or transfer prices of future production costs	(324)	–	–	(922)	435	–	163	–
Changes in future development costs	(83)	–	–	(34)	48	–	(97)	–
Oil and gas sales and transfers in the period	(1,279)	–	–	(276)	(791)	–	(212)	–
Net changes due to extensions, discoveries and improvements in the recovery of reserves	–	–	–	–	–	–	–	–
Net changes due to purchases/sales of assets	–	–	–	–	–	–	–	–
Net changes due to revisions in quantity estimates	908	–	–	279	409	–	220	–
Previously estimated development costs incurred in the year	421	–	–	7	214	–	200	–
Effect of discounting to a different date and exchange rate effect	425	–	–	270	238	–	(83)	–
Other non-specific changes	–	–	–	–	–	–	–	–
Changes in income tax	(55)	–	–	318	(120)	–	(253)	–
Net change	13	–	–	(358)	433	–	(62)	–
Balance at December 31st, 2022	2,945	–	–	1,295	2,130	–	(480)	–
Changes due to sale or transfer prices of future production costs	(81)	–	–	(35)	(46)	–	–	–
Changes in future development costs	(164)	–	–	23	(187)	–	–	–
Oil and gas sales and transfers in the period	(1,319)	–	–	(330)	(989)	–	–	–
Net changes due to extensions, discoveries and improvements in the recovery of reserves	603	–	–	–	603	–	–	–
Net changes due to purchases/sales of assets	475	–	–	–	–	–	475	–
Net changes due to revisions in quantity estimates	(1)	–	–	69	(70)	–	–	–
Previously estimated development costs incurred in the year	219	–	–	8	211	–	–	–
Effect of discounting to a different date and exchange rate effect	159	–	–	67	87	–	5	–
Other non-specific changes	–	–	–	–	–	–	–	–
Changes in income tax	136	–	–	86	50	–	–	–
Net change	27	–	–	(112)	(341)	–	480	–
Balance at December 31st, 2023 ⁽¹⁾	2,972	–	–	1,183	1,789	–	–	–
Total fully-consolidated and equity-accounted entities	11,260	5,011	1,328	1,183	2,427	1,819	(844)	336

(1) In October 2023, the remaining 49% of the company RRUk was acquired, the company's discounted future net cash flows are presented in fully-consolidated entities at the closing of 2023.

Results of oil and gas exploration and production activities

The following table shows the revenues and expenses associated directly with the Group's oil and gas exploration and production activities. It does not include any allocation of the finance costs or general expenses, except for the accretion expense, and, therefore, is not necessarily indicative of the contribution to consolidated net profit of the oil and gas activities.

Millions of euros

At December 31st 2021

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Income								
Sales to non-Group companies	3,679	695	548	2	528	601	593	712
Sales between business segments and to Group Companies	770	364	5	–	42	353	6	–
Total income ⁽¹⁾	4,449	1,059	553	2	570	954	599	712
Production costs	(811)	(225)	(60)	(1)	(200)	(61)	(139)	(125)
Production taxes	(181)	(7)	(107)	–	–	(51)	–	(16)
Exploration expenses ⁽²⁾	(367)	(248)	(1)	–	(54)	(1)	(59)	(4)
Other operating expenses	(677)	(165)	(73)	(19)	(42)	6	(320)	(64)
Depreciation and amortization charge ⁽³⁾	(896)	(150)	(37)	–	(253)	(71)	(176)	(209)
Profit (Loss) before taxes and charges	1,517	264	275	(18)	21	776	(95)	294
Taxes and charges ⁽⁴⁾	(941)	(66)	(90)	(3)	(103)	(336)	(199)	(144)
Results of oil and gas production activities	576	198	185	(21)	(82)	440	(294)	150
Equity-accounted investees								
Income								
Sales to non-Group companies	1,798	–	–	411	983	–	352	52
Sales between business segments and to Group Companies	553	–	–	–	452	–	101	–
Total income ⁽¹⁾	2,351	–	–	411	1,435	–	453	52
Production costs	(487)	–	–	(32)	(198)	–	(253)	(4)
Production taxes	(361)	–	–	(64)	(266)	–	–	(31)
Exploration expenses ⁽²⁾	12	–	–	–	(15)	–	–	27
Other operating expenses	(232)	–	–	(143)	(60)	–	(28)	(1)
Depreciation and amortization charge ⁽³⁾	(856)	–	–	(42)	(532)	–	(281)	(1)
Profit (Loss) before taxes and charges	427	–	–	130	364	–	(109)	42
Taxes and charges ⁽⁴⁾	(98)	–	–	22	(155)	–	54	(19)
Results of oil and gas production activities	329	–	–	152	209	–	(55)	23
Total results of oil and gas activities ⁽⁴⁾	905	198	185	131	127	440	(349)	173

Millions of euros

At December 31st 2022

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Income								
Sales to non-Group companies	4,665	433	999	2	675	845	1,121	590
Sales between business segments and to Group Companies	2,283	1,717	8	–	–	476	82	–
Total income	6,948	2,150	1,007	2	675	1,321	1,203	590
Production costs	(936)	(332)	(83)	(18)	(209)	(72)	(173)	(49)
Production taxes	(263)	(25)	(182)	–	–	(56)	–	–
Exploration expenses ⁽²⁾	(452)	(79)	(1)	–	(147)	–	(34)	(191)
Other operating expenses	(773)	(383)	(120)	(152)	(2)	(8)	(69)	(39)
Depreciation and amortization charge ⁽³⁾	(1,124)	(199)	(55)	(1)	(217)	(120)	(269)	(263)
Profit (Loss) before taxes and charges	3,400	1,132	566	(169)	100	1,065	658	48
Taxes and charges ⁽⁴⁾	(2,158)	(317)	(195)	6	(117)	(814)	(642)	(79)
Results of oil and gas production activities	1,242	815	371	(163)	(17)	251	16	(31)
Equity-accounted investees								
Income								
Sales to non-Group companies	2,820	–	–	580	1,768	–	472	–
Sales between business segments and to Group Companies	943	–	–	–	755	–	188	–
Total income	3,763	–	–	580	2,523	–	660	–
Production costs	(532)	–	–	(24)	(227)	–	(281)	–
Production taxes	(534)	–	–	(81)	(453)	–	–	–
Exploration expenses ⁽²⁾	(23)	–	–	–	(16)	–	(3)	(4)
Other operating expenses	(343)	–	–	(203)	(116)	–	(24)	–
Depreciation and amortization charge ⁽³⁾	(607)	–	–	24	(652)	–	21	–
Profit (Loss) before taxes and charges	1,724	–	–	296	1,059	–	373	(4)
Taxes and charges ⁽⁴⁾	(617)	–	–	(115)	(412)	–	(90)	–
Results of oil and gas production activities	1,107	–	–	181	647	–	283	(4)
Total results of oil and gas activities ⁽⁴⁾	2,349	815	371	18	630	251	299	(35)

Millions of euros

At December 31st 2023

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Income								
Sales to non-Group companies	3,200	583	600	1	321	726	557	412
Sales between business segments and to Group Companies	1,771	1,098	3	–	–	403	267	–
Total income	4,971	1,681	603	1	321	1,129	824	412
Production costs	(876)	(354)	(89)	(17)	(140)	(67)	(154)	(55)
Production taxes	(190)	(31)	(108)	–	–	(51)	–	–
Exploration expenses ⁽²⁾	(116)	(65)	–	–	(34)	–	(21)	4
Other operating expenses	(573)	(259)	(94)	(16)	(30)	(11)	(132)	(31)
Depreciation and amortization charge ⁽³⁾	(2,051)	(1,099)	(70)	(3)	(117)	(168)	(526)	(68)
Profit (Loss) before taxes and charges	1,165	(127)	242	(35)	–	832	(9)	262
Taxes and charges ⁽⁴⁾	(1,363)	(556)	(81)	10	98	(457)	(227)	(150)
Results of oil and gas production activities	(198)	(683)	161	(25)	98	375	(236)	112
Equity-accounted investees								
Income								
Sales to non-Group companies	1,996	–	–	628	982	–	386	–
Sales between business segments and to Group Companies	604	–	–	–	581	–	23	–
Total income	2,600	–	–	628	1,563	–	409	–
Production costs	(464)	–	–	(33)	(240)	–	(191)	–
Production taxes	(357)	–	–	(94)	(263)	–	–	–
Exploration expenses ⁽²⁾	(4)	–	–	–	(1)	–	(3)	–
Other operating expenses	(502)	12	–	(251)	(154)	–	(109)	–
Depreciation and amortization charge ⁽³⁾	(1,015)	–	–	(107)	(744)	–	(164)	–
Profit (Loss) before taxes and charges	258	12	–	143	161	–	(58)	–
Taxes and charges ⁽⁴⁾	(28)	–	–	(107)	48	–	31	–
Results of oil and gas production activities	230	12	–	36	209	–	(27)	–
Total results of oil and gas activities ⁽⁵⁾⁽⁶⁾	32	(671)	161	11	307	375	(263)	112

(1) 2021 information has been modified for comparative purposes.

(2) "Exploration expenses" include reversal for the impairment of the exploration assets of €20 in 2023, and charges for the impairment of exploration assets of €138 and €188 million in 2022 and 2021, respectively (see Note 20 to the 2023 and 2022 Financial Statements and Note 21 to the 2021 Financial Statements).

(3) "Depreciation and amortization charge and provisions" includes the net impairment of production assets and development and provisions for onerous charges, as well as impairment of goodwill amounting to €883, €229 and €337 million in 2023, 2022 and 2021, respectively (see Note 20 to the 2023 and 2022 Financial Statements and Note 21 to the 2021 Financial Statements).

(4) The income tax expense includes the impairment of tax assets recognized in 2023 and 2022 amounting to €647 and €286 million (see Note 20 to the 2023 and 2022 Financial Statements).

(5) Results generated for divestments are not included. In addition, it does not include the results recorded because of the procedure initiated by Addax Petroleum UK Limited y Sinopec International Petroleum Exploration and Production Corporation (see Note 15 to the Financial Statements).

(6) In October 2023, the remaining 49% of the company RRUK was acquired, the results of the company until that date are presented in equity-accounted investees, the remaining results are in fully-consolidated entities.

Investments

Investments of the year (cost incurred)

The costs incurred represent amounts capitalized during the year relating to acquisitions of properties and for exploration and development activities, including dismantling costs.

Millions of euros

At December 31st 2021	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Acquisition of proved properties	–	–	–	–	–	–	–	–
Acquisition of unproved properties	–	–	–	–	–	–	–	–
Exploration costs	222	112	–	–	59	1	24	26
Development costs	844	314	67	(1)	75	38	323	28
Costs incurred	1,066	426	67	(1)	134	39	347	54
Equity-accounted investees								
Acquisition of proved properties	3	–	–	–	–	–	3	–
Acquisition of unproved properties	–	–	–	–	–	–	–	–
Exploration costs	26	–	–	–	23	–	–	3
Development costs	316	–	–	(31)	230	–	116	1
Costs incurred	345	–	–	(31)	253	–	119	4
Total costs incurred	1,411	426	67	(32)	387	39	466	58

Millions of euros

At December 31st 2022	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Acquisition of proved properties	213	213	–	–	–	–	–	–
Acquisition of unproved properties	–	–	–	–	–	–	–	–
Exploration costs	214	124	–	–	53	1	(4)	40
Development costs	1,460	1,183	52	–	56	43	126	–
Costs incurred	1,887	1,520	52	–	109	44	122	40
Equity-accounted investees								
Acquisition of proved properties	–	–	–	–	–	–	–	–
Acquisition of unproved properties	–	–	–	–	–	–	–	–
Exploration costs	18	–	–	–	18	–	–	–
Development costs	82	34	–	–	122	–	(74)	–
Costs incurred	100	34	–	–	140	–	(74)	–
Total costs incurred	1,987	1,554	52	–	249	44	48	40

Millions of euros

At December 31st 2023

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Acquisition of proved properties	789	144	–	–	–	33	612	–
Acquisition of unproved properties	–	–	–	–	–	–	–	–
Exploration costs	152	96	–	–	43	4	5	4
Development costs	1,760	1,333	(23)	1	155	57	224	13
Costs incurred	2,701	1,573	(23)	1	198	94	841	17
Equity-accounted investees								
Acquisition of proved properties	–	–	–	–	–	–	–	–
Acquisition of unproved properties	–	–	–	–	–	–	–	–
Exploration costs	39	–	–	–	39	–	–	–
Development costs	732	81	–	75	508	–	68	–
Costs incurred	771	81	–	75	547	–	68	–
Total costs incurred ⁽¹⁾	3,472	1,654	(23)	76	745	94	909	17

(1) In October 2023, the remaining 49% of the company RRUUK was acquired, the incurred costs of the company until that date are presented in equity-accounted investees, the remaining costs are in fully-consolidated entities.

Accumulated investments (capitalized costs)

Capitalized costs represent the historical costs capitalized related to oil and gas exploration and production activities, including auxiliary equipment and facilities, and the related accumulated depreciation and accumulated impairment losses.

Millions of euros

At December 31st 2021	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Capitalized costs of proved oil and gas properties	20,694	8,836	559	71	5,492	1,702	920	3,114
Capitalized costs of unproved oil and gas properties	1,744	1,166	(1)	–	397	(1)	20	163
	22,438	10,002	558	71	5,889	1,701	940	3,277
Auxiliary equipment and facilities	5,951	1,467	768	28	899	1,183	1,190	416
Total capitalized costs	28,389	11,469	1,326	99	6,788	2,884	2,130	3,693
Accumulated depreciation and impairment losses	(17,587)	(6,043)	(446)	(97)	(5,044)	(2,178)	(1,209)	(2,570)
Net amount	10,802	5,426	880	2	1,744	706	921	1,123
Equity-accounted investees								
Capitalized costs of proved oil and gas properties	10,890	–	–	1,508	7,193	–	2,189	–
Capitalized costs of unproved oil and gas properties	685	–	–	–	661	–	–	24
	11,575	–	–	1,508	7,854	–	2,189	24
Auxiliary equipment and facilities	4,193	–	–	840	2,810	–	541	2
Total capitalized costs	15,768	–	–	2,348	10,664	–	2,730	26
Accumulated depreciation and impairment losses	(11,117)	–	–	(2,030)	(7,198)	–	(1,889)	–
Net amount	4,651	–	–	318	3,466	–	841	26
Total Net amounts ⁽¹⁾	15,453	5,426	880	320	5,210	706	1,762	1,149

Millions of euros

At December 31st 2022	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Capitalized costs of proved oil and gas properties	21,293	11,811	625	76	3,377	1,835	1,007	2,562
Capitalized costs of unproved oil and gas properties	606	188	–	–	381	(1)	4	34
	21,899	11,999	625	76	3,758	1,834	1,011	2,596
Auxiliary equipment and facilities	5,828	1,798	828	29	514	1,270	1,191	198
Total capitalized costs	27,727	13,797	1,453	105	4,272	3,104	2,202	2,794
Accumulated depreciation and impairment losses	(16,143)	(6,560)	(521)	(102)	(2,906)	(2,419)	(1,422)	(2,213)
Net amount	11,584	7,237	932	3	1,366	685	780	581
Equity-accounted investees								
Capitalized costs of proved oil and gas properties	11,263	–	–	1,600	7,530	–	2,133	–
Capitalized costs of unproved oil and gas properties	687	–	–	–	687	–	–	–
	11,950	–	–	1,600	8,217	–	2,133	–
Auxiliary equipment and facilities	4,628	34	–	880	3,025	–	689	–
Total capitalized costs	16,578	34	–	2,480	11,242	–	2,822	–
Accumulated depreciation and impairment losses	(12,028)	–	–	(1,971)	(7,985)	–	(2,072)	–
Net amount	4,550	34	–	509	3,257	–	750	–
Total Net amounts ⁽¹⁾	16,134	7,271	932	512	4,623	685	1,530	581

Millions of euros

At December 31st 2023

	Total	United States	Peru	Venezuela	Rest of America	Africa	Europe	Asia & Oceania
Fully-consolidated entities								
Capitalized costs of proved oil and gas properties	20,985	12,499	567	73	1,245	1,825	2,300	2,476
Capitalized costs of unproved oil and gas properties	677	226	–	–	398	1	4	48
	21,662	12,725	567	73	1,643	1,826	2,304	2,524
Auxiliary equipment and facilities	6,149	2,162	815	29	468	1,269	1,201	205
Total capitalized costs	27,811	14,887	1,382	102	2,111	3,095	3,505	2,729
Accumulated depreciation and impairment losses	(15,287)	(7,390)	(567)	(101)	(974)	(2,501)	(1,559)	(2,195)
Net amount	12,524	7,497	815	1	1,137	594	1,946	534
Equity-accounted investees								
Capitalized costs of proved oil and gas properties	9,832	–	–	1,619	8,213	–	–	–
Capitalized costs of unproved oil and gas properties	55	–	–	–	55	–	–	–
	9,887	–	–	1,619	8,268	–	–	–
Auxiliary equipment and facilities	3,984	13	–	849	3,122	–	–	–
Total capitalized costs	13,871	13	–	2,468	11,390	–	–	–
Accumulated depreciation and impairment losses	(10,416)	–	–	(2,003)	(8,413)	–	–	–
Net amount	3,455	13	–	465	2,977	–	–	–
Total Net amounts ⁽¹⁾⁽²⁾	15,979	7,510	815	466	4,114	594	1,946	534

(1) In 2021, includes assets classified as held for sale amounting €257 million.

(2) In October 2023, the remaining 49% of the company RRUUK was acquired, the company's capitalized costs are presented in fully-consolidated entities at the closing of 2023.

The information in this document is published pursuant to the provision of article 226 of the Spanish Securities Market.