



2012

Supplementary information on oil and gas
exploration and production activities

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(Unaudited information)

Below is presented the information on Repsol Group's⁽¹⁾ oil and gas exploration and production activities which include the following disclosures:

- Capitalized cost, in relation with capitalized historical costs;
- Cost incurred: which represent the amounts capitalized or charged to profit during the year;
- Results of oil and gas exploration and production activities, including revenue and expenses associated directly to this activity;
- Estimated proved net developed and undeveloped oil and gas reserves;
- Standardized measure of discounted future net cash flows relating to proved oil and gas reserves, which represent the estimate of future net cash flows from proven reserves on the basis of a standardized measure criteria.
- Changes in standardized measure of discounted future net cash flows relating to proved oil and gas reserves with respect to those presented for the previous year.

This information, which the Group compiles and publishes annually, is prepared in accordance with the general accepted principles applied in the oil and gas industry, specifically those principles laid down by the U.S. Financial Accounting Standards Board (FASB) and the guidelines and framework established for the industry by the U.S. Securities and Exchange Commission (SEC), which govern financial information practices in the U.S.A. Proved reserves are also estimated in accordance with the criteria established by the Petroleum Reserves Management System of the Society of Petroleum Engineers (PRMS-SPE).

⁽¹⁾ Due to the expropriation process of Repsol Group shares in YPF S.A. and YPF Gas S.A. (formerly known as Repsol YPF Gas S.A.), Repsol lost control of YPF and YPF Gas, and therefore, both companies were deconsolidated for accounting purposes. As a result, Repsol's assets and liabilities related to these investments were derecognized, other assets and liabilities related to these investments affected by the change in control and the expropriation process were revalued, and Repsol Group's ownership interest in YPF and YPF Gas, derived from the shares subject to expropriation - which still belong to the Group - and as well as the remaining shares owned by it, were recognized as financial instruments (shares).

In accordance with prevailing accounting regulation, from the loss of control, activities from YPF and YPF Gas were considered as discontinued operations and therefore the results contributed to the Group from both companies until loss of control and the impact on the income statement derived from the expropriation process were recognized under specific headings related to discontinued operations in the consolidated income statement.

In the following tables, information related to YPF has been maintained for financial years 2011 and 2010. In financial year 2012 information related to YPF and its subsidiaries is not included for the reasons explained above.

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.

	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Rest of South America	North America	Africa	Asia
Millions of euros										
At 31 DECEMBER 2010										
Capitalized costs of proved oil and gas properties	30,847	488	23,164	1,342	515	458	2,008	1,886	933	53
Capitalized costs of unproved oil and gas properties	2,297	5	116	243	86	131	314	1,017	377	8
	33,144	493	23,280	1,585	601	589	2,322	2,903	1,310	61
Auxiliary equipment and facilities	2,093	52	521	697	95	–	170	316	242	–
Total Capitalized costs	35,237	545	23,801	2,282	696	589	2,492	3,219	1,552	61
Accumulated depreciation and impairment losses	(22,830)	(367)	(18,171)	(1,094)	(188)	(30)	(1,452)	(732)	(743)	(53)
Net amounts ⁽¹⁾	12,407	178	5,630	1,188	508	559	1,040	2,487	809	8
Millions of euros										
At 31 DECEMBER 2011										
Capitalized costs of proved oil and gas properties	34,481	504	25,492	1,581	690	579	2,330	2,116	1,189	–
Capitalized costs of unproved oil and gas properties	2,624	13	158	263	65	150	505	1,312	103	55
	37,105	517	25,650	1,844	755	729	2,835	3,428	1,292	55
Auxiliary equipment and facilities	2,401	52	595	818	78	–	272	331	255	–
Total Capitalized costs	39,506	569	26,245	2,662	833	729	3,107	3,759	1,547	55
Accumulated depreciation and impairment losses	(25,264)	(359)	(19,986)	(1,268)	(235)	(48)	(1,584)	(1,062)	(722)	–
Net amounts ⁽¹⁾	14,242	210	6,259	1,394	598	681	1,523	2,697	825	55
Millions of euros										
At 31 DECEMBER 2012										
Capitalized costs of proved oil and gas properties	9,440	462	–	1,550	725	679	2,393	2,249	1,218	164
Capitalized costs of unproved oil and gas properties	3,038	15	–	376	55	189	527	1,516	252	108
	12,478	477	–	1,926	780	868	2,920	3,765	1,470	272
Auxiliary equipment and facilities	2,220	172	–	880	164	–	299	459	246	–
Total Capitalized costs	14,698	649	–	2,806	944	868	3,219	4,224	1,716	272
Accumulated depreciation and impairment losses	(5,724)	(383)	–	(1,420)	(270)	(66)	(1,595)	(1,186)	(793)	(11)
Net amounts ⁽¹⁾	8,974	266	–	1,386	674	802	1,624	3,038	923	261

⁽¹⁾ Does not include Capitalized costs regarding non current assets held for sale.

⁽²⁾ At December 31, 2011, all capitalized costs in "Argentina" relate to oil and gas exploration and production operations carried out by YPF. Moreover, in "North America", amounts pertaining to YPF companies are included under capitalized costs in assets with proven reserves, with unproven reserves, and accumulated amortization and provisions, amounting to €183, 14 and 163 million, respectively.

As of 31 December 2012 and 2011, Repsol Group's share in oil and gas exploration and production activities from equity method investees amount to €169 and €130 million, respectively.

Costs incurred

The costs incurred represent amounts Capitalized or charged to profit during the year relating to acquisitions of properties and for exploration and development activities.

	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Rest of South America	North America	Africa	Asia	Australia
At 31 December 2010											
Millions of euros											
Acquisitions of proved properties	266	–	–	–	–	110	156	–	–	–	–
Acquisitions of unproved properties	45	–	–	–	–	45	–	–	–	–	–
Exploration costs	818	28	85	9	25	42	411	113	80	25	–
Development costs	1,724	48	1,205	79	55	71	152	70	44	–	–
TOTAL ⁽¹⁾	2,853	76	1,290	88	80	268	719	183	124	25	–

	Total	Europe	Argentina ⁽²⁾	Trinidad & Tobago	Venezuela	Peru	Rest of South America ⁽²⁾	North America ⁽²⁾	Africa	Asia	Australia
At 31 December 2011											
Millions of euros											
Acquisitions of proved properties	–	–	–	–	–	–	–	–	–	–	–
Acquisitions of unproved properties	–	–	–	–	–	–	–	–	–	–	–
Exploration costs	1,259	62	268	3	1	43	302	386	127	66	1
Development costs	2,332	44	1,389	276	109	1	336	159	18	–	–
TOTAL ⁽¹⁾	3,591	106	1,657	279	110	44	638	545	145	66	1

	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Rest of South America	North America	Africa	Asia	Australia
At 31 December 2012											
Millions of euros											
Acquisitions of proved properties	154	–	–	–	–	–	–	–	–	154	–
Acquisitions of unproved properties	388	–	–	–	–	–	–	199	110	79	–
Exploration costs	806	80	–	1	–	97	226	228	131	43	–
Development costs	1,423	96	–	185	175	115	327	466	52	7	–
TOTAL ⁽¹⁾	2,771	176	–	186	175	212	553	893	293	283	–

⁽¹⁾ Does not include costs incurred regarding to non-current assets held for sale.

⁽²⁾ At December 31, 2011, all costs incurred in Argentina relate to oil and gas exploration and production operations carried out by YPF. Moreover, "Rest of South America" and "North America" include costs incurred by YPF companies amounting to €10 and €18 million, respectively.

As of December 31, 2012 and 2011, Repsol Group's share in investments made in oil and gas exploration and production activities from equity method investees amounted to €80 and €65 million, respectively.

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 and, therefore, is not necessarily indicative of the contribution to consolidated net profit of the oil and gas activities.

	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Rest of South America	North America	Africa	Asia	Australia
2010											
Millions of euros											
Income											
Sales to non-Group companies	2,022	–	906	222	352	151	327	37	27	–	–
Sales between business segments and to Group companies	5,584	50	3,464	699	3	31	350	628	359	–	–
Other income ⁽³⁾	644	–	–	–	–	–	33	–	611	–	–
Total income	8,250	50	4,370	921	355	182	710	665	997	–	–
Production costs ⁽¹⁾	(3,104)	(21)	(2,009)	(360)	(113)	(117)	(300)	(47)	(137)	–	–
Exploration expenses	(502)	(30)	(64)	(5)	–	(11)	(238)	(48)	(76)	(30)	–
Other operating expenses	(332)	(4)	(286)	(4)	(1)	–	(34)	(1)	(2)	–	–
Depreciation and amortization charge	(2,066)	(6)	(1,275)	(153)	(47)	(12)	(150)	(352)	(71)	–	–
Profit (Loss) before taxes and charges	2,246	(11)	736	399	194	42	(12)	217	711	(30)	–
Taxes and charges	(1,277)	10	(255)	(206)	(193)	(12)	(40)	(89)	(500)	8	–
Results of oil and gas production activities ⁽²⁾	969	(1)	481	193	1	30	(52)	128	211	(22)	–

	Total	Europe	Argentina ⁽⁴⁾	Trinidad & Tobago	Venezuela	Peru	Rest of South America	North America ⁽⁴⁾	Africa	Asia	Australia
2011											
Millions of euros											
Income											
Sales to non-Group companies	2,031	–	643	404	432	162	317	42	31	–	–
Sales between business segments and to Group companies	5,433	51	3,614	552	–	100	280	746	90	–	–
Other income	187	–	–	–	–	–	33	–	154	–	–
Total income	7,651	51	4,257	956	432	262	630	788	275	–	–
Production costs ⁽¹⁾	(3,107)	(25)	(2,224)	(334)	(209)	(111)	(77)	(42)	(85)	–	–
Exploration expenses	(494)	(64)	(82)	(3)	–	(19)	(48)	(130)	(124)	(23)	(1)
Other operating expenses	(352)	(6)	(317)	(3)	(2)	–	(22)	(1)	(1)	–	–
Depreciation and amortisation charge	(1,786)	(4)	(1,142)	(130)	(40)	(17)	(141)	(286)	(26)	–	–
Profit (Loss) before taxes and charges	1,912	(48)	492	486	181	115	342	329	39	(23)	(1)
Taxes and charges	(806)	29	(172)	(288)	(5)	(35)	(108)	(120)	(114)	7	–
Results of oil and gas production activities ⁽²⁾	1,106	(19)	320	198	176	80	234	209	(75)	(16)	(1)

⁽¹⁾ Production costs include local taxes, production taxes and other similar payments amounting to €513, €1,241 and €1,191 million in 2012, 2011 and 2010 respectively. In 2011 and 2010, figures also include withholdings on exports of crude oil from Argentina. They also include transport and other costs totalling €356, €170 and €426 million in 2012, 2011 and 2010 respectively.

⁽²⁾ The results do not include the income and expenses associated with the impairment provisions, registered as a result of the comparison between market value (discounted cash flows) from oil and gas proved and non-proved reserves (the latter of which are subject to a risk factor) from each field owned by the Company at year-end and the carrying amount of the assets associated therewith, which amounted to a net expense of €14 million in 2012, a net income of €36 million in 2011, and a net expense of €163 million in 2010.

⁽³⁾ The results do not include gains recognized as consequence of the agreement reached in relation to the exploration and production assets in Brazil, which amounted to €2,847 million (See Note 31 to the consolidated Financial Statements for the year ended December 31, 2010).

⁽⁴⁾ Results at December 31, 2011 in Argentina correspond entirely to oil and gas exploration and production operations carried out by YPF. In addition, the "North America" column includes a loss of €4 million owing to activities performed by YPF companies, constituting total revenues of €42 million, and costs, expenses, amortization and depreciation of €46 million.

	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Rest of South America	North America	Africa	Asia	Australia
2012	Millions of euros										
Income											
Sales to non-Group companies	1,474	–	–	295	488	168	425	21	38	39	–
Sales between business segments and to Group companies	2,538	81	–	629	–	111	320	820	577	–	–
Other income	1,002	–	–	–	–	–	20	–	982	–	–
Total income	5,014	81	–	924	488	279	765	841	1,597	39	–
Production costs ⁽¹⁾	(1,229)	(20)	–	(385)	(255)	(133)	(213)	(7)	(192)	(24)	–
Exploration expenses	(551)	(84)	–	(1)	–	(62)	(128)	(141)	(92)	(43)	–
Other operating expenses	(75)	(4)	–	(4)	(1)	–	(62)	(3)	(1)	–	–
Depreciation and amortisation charge	(871)	(37)	–	(183)	(44)	(20)	(186)	(313)	(77)	(11)	–
Profit (Loss) before taxes and charges	2,288	(64)	–	351	188	64	176	377	1,235	(39)	–
Taxes and charges	(1,290)	38	–	(192)	(22)	(19)	(78)	(137)	(892)	12	–
Results of oil and gas production activities ⁽²⁾	998	(26)	–	159	166	45	98	240	343	(27)	–

⁽¹⁾ Production costs include local taxes, production taxes and other similar payments amounting to €513, €1,241 and €1,191 million in 2012, 2011 and 2010 respectively. In 2011 and 2010, figures also include withholdings on exports of crude oil from Argentina. It also includes transport and other costs totalling €356, €170 and €426 million in 2012, 2011 and 2010 respectively.

⁽²⁾ The results do not include the income and expenses associated with the impairment provisions, registered as a result of the comparison between market value (discounted cash flows) from oil and gas proved and non-proved reserves (the latter of which are subject to a risk factor) from each field owned by the Company at year end and the carrying amount of the assets associated therewith, which amounted to a net expense of €14 in 2012, a net income of €36 in 2011, and a net expense of €163 million in 2010.

Estimated proved net developed and undeveloped oil and gas reserves

The tables below reflect the net developed and undeveloped proved reserves of crude oil, condensed oil and LPG and natural gas as of December 31, 2012, 2011 and 2010, and the variations therein. Proved reserves shown includes the reserves equivalent to the economic income obtained under certain production sharing contracts entered into as of December 31, 2012, 2011 and 2010.

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. We follow the same methodology in reporting our production amounts.

Proved reserves in each year were estimated in accordance with the disclosure requirements and framework established for the petroleum and gas industry by the Securities and Exchange Commission (SEC) and on the basis of the criteria established by the Petroleum Reserves Management System of the Society of Petroleum Engineers (PRMS-SPE). In accordance with these rules, proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible – 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 reasonably certain that it will commence the project within a reasonable time.

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 of managing 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. Furthermore, the volumes booked are submitted to third party engineers for a reserves audit on a periodic basis (100% of the reserves on a three-year 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 2012, DeGolyer and MacNaughton (D&M) audited certain areas in South America; Netherland, Sewell & Associates, Inc., (NSAI) audited certain areas in South America and North America; and Ryder Scott Company (RSC) audited certain areas in South America and North Africa. The third party engineers’ reports will be available at www.repsol.com.

PROVED DEVELOPED AND UNDEVELOPED RESERVES OF CRUDE OIL, CONDENSATE AND LPG

Millions of barrels	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Resto of South America	North America	Africa	Asia
RESERVES AT DECEMBER 31, 2009 ^{(1) (2)}	883	7	539	40	20	35	53	66	123	–
Revisions of previous estimates	92	1	45	1	–	19	13	2	11	–
Improved recovery	32	–	32	–	–	–	–	–	–	–
Extensions and discoveries	31	–	23	–	–	5	1	–	2	–
Purchases of minerals in place	38	–	–	–	38	–	–	–	–	–
Sales of minerals in place	(8)	–	–	–	–	–	(8)	–	–	–
Production ⁽³⁾	(160)	(1)	(107)	(6)	(5)	(3)	(12)	(11)	(15)	–
RESERVES AT DECEMBER 31, 2010 ^{(1) (2)}	908	7	532	35	54	55	47	57	121	–
Revisions of previous estimates	112	–	91	1	2	–	17	1	(1)	–
Improved recovery	19	–	19	–	–	–	–	–	–	–
Extensions and discoveries	80	–	43	–	–	11	26	–	–	–
Purchases of minerals in place	–	–	–	–	–	–	–	–	–	–
Sales of minerals in place	(1)	(1)	–	–	–	–	–	–	–	–
Production ⁽³⁾	(140)	–	(100)	(5)	(5)	(3)	(13)	(10)	(4)	–
RESERVES AT DECEMBER 31, 2011 ^{(1) (2) (3)}	978	6	584	32	50	63	79	49	115	–
Revisions of previous estimates	41	–	–	2	(1)	–	13	2	23	–
Improved recovery	–	–	–	–	–	–	–	–	–	–
Extensions and discoveries	33	–	–	–	–	2	22	6	3	–
Purchases of minerals in place	24	–	–	–	–	–	–	–	–	24
Sales of minerals in place	(595)	–	(584)	–	–	–	(10)	(1)	–	–
Production ⁽³⁾	(52)	(1)	–	(4)	(5)	(3)	(12)	(10)	(16)	(1)
RESERVES AT DECEMBER 31, 2012 ⁽¹⁾	429	5	–	30	44	62	92	46	125	23
PROVED DEVELOPED RESERVES OF CRUDE OIL, CONDENSATE AND LPG										
At December 31, 2009	656	2	429	33	17	24	45	29	77	–
At December 31, 2010	649	2	404	28	37	48	31	21	78	–
At December 31, 2011	671	2	438	24	34	45	36	21	71	–
At December 31, 2012	255	5	–	23	35	42	34	20	80	16

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 proved developed and undeveloped net reserves at December 31, 2012, 2011, 2010, and 2009 include an estimated 39, 109, 99 and 94 million barrels of oil equivalent, respectively, in respect of royalty payments which, as described above, are a financial obligation, or are substantially equivalent to a production or similar tax. Net production in 2012, 2011 and 2010 includes an estimated 3, 15, and 16 million barrels of oil equivalent, respectively, in respect of such types of payments.

⁽²⁾ Includes 249 and 107 million barrels of oil equivalent relating to the participation in the minority interest of YPF, as of December 31, 2011 and 2010, respectively.

⁽³⁾ At December 31, 2011, proven reserves of crude oil, condensates and LPG relating to YPF stood at 584 million barrels in “Argentina” and less than 1 million barrels of crude oil equivalent in “North America”. Similarly, YPF production at December 31, 2011 amounted to 100 million barrels in “Argentina” and 0.5 million barrels in “North America”.

PROVED DEVELOPED AND UNDEVELOPED RESERVES OF NATURAL GAS

	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Resto of South America	North America	Africa	Asia
Thousand millions of standard cubic feet										
RESERVES AT DECEMBER 31, 2009 ^{(1) (2)}	6,744	3	2,719	2,239	537	630	489	16	111	-
Revisions of previous estimates	730	-	313	78	-	386	(35)	5	(17)	-
Improved recovery	1	-	1	-	-	-	-	-	-	-
Extensions and discoveries	230	-	50	-	-	121	59	-	-	-
Purchases of minerals in place	-	-	-	-	-	-	-	-	-	-
Sales of minerals in place	(149)	-	-	-	(147)	-	(2)	-	-	-
Production ⁽¹⁾	(913)	(2)	(505)	(281)	(51)	(23)	(34)	(4)	(13)	-
RESERVES AT DECEMBER 31, 2010 ^{(1) (2)}	6,643	1	2,578	2,036	339	1,114	477	17	81	-
Revisions of previous estimates	164	1	167	55	14	-	(64)	2	(11)	-
Improved recovery	1	-	-	-	1	-	-	-	-	-
Extensions and discoveries	778	-	104	-	305	166	97	-	106	-
Purchases of minerals in place	-	-	-	-	-	-	-	-	-	-
Sales of minerals in place	-	-	-	-	-	-	-	-	-	-
Production ⁽¹⁾	(839)	(1)	(452)	(250)	(47)	(37)	(36)	(4)	(12)	-
RESERVES AT DECEMBER 31, 2011 ^{(1) (2) (3)}	6,747	-	2,397	1,842	613	1,243	473	14	165	-
Revisions of previous estimates	218	2	-	80	83	-	53	-	(1)	-
Improved recovery	-	-	-	-	-	-	-	-	-	-
Extensions and discoveries	691	-	-	-	452	31	20	33	-	155
Purchases of minerals in place	-	-	-	-	-	-	-	-	-	-
Sales of minerals in place	(2,405)	-	(2,397)	(6)	-	-	-	(2)	-	-
Production ⁽¹⁾	(391)	(2)	-	(240)	(48)	(39)	(46)	(5)	(12)	-
RESERVES AT DECEMBER 31, 2012 ⁽¹⁾	4,860	-	-	1,676	1,100	1,235	500	40	152	155
PROVED DEVELOPED RESERVES OF NATURAL GAS										
At December 31, 2009	4,513	3	2,149	1,058	508	432	288	9	66	-
At December 31, 2010	4,275	1	1,994	875	310	839	168	7	81	-
At December 31, 2011	3,854	-	1,796	699	305	802	186	8	58	-
At December 31, 2012	2,134	-	-	686	267	764	299	18	46	54

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 proved developed and undeveloped net reserves at December 31, 2012, 2011, 2010 and 2009 include an estimated 767, 1,026, 959 and 812 thousand million standard cubic feet of gas, respectively, in respect of royalty payments which, as described above, are a financial obligation, or are substantially equivalent to a production or similar tax. Net production in 2012, 2011 and 2010 includes an estimated 26, 74 and 73 thousand million standard cubic feet of gas, respectively, in respect of such types of payments.

⁽²⁾ Includes 1,021 and 521 thousand million standard cubic feet of gas relating to the participation in the minority interest of YPF, as of December 31, 2011 and 2010.

⁽³⁾ At December 31, 2011, proven reserves of natural gas relating to YPF stood at 2,397 billion cubic feet of gas in "Argentina" and 2 million cubic feet of gas in "North America". Similarly, YPF production at December 31, 2011 amounted to 452 billion cubic feet of gas in "Argentina" and 1 billion cubic feet in "North America".

PROVED DEVELOPED AND UNDEVELOPED RESERVES OF CRUDE OIL, CONDENSATE, LPG AND NATURAL GAS

	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Resto of South America	North America	Africa	Asia
Millions of barrels of oil equivalent										
RESERVES AT DECEMBER 31, 2009 ^{(1) (2)}	2,084	7	1,023	439	116	147	140	69	143	-
Revisions of previous estimates	222	1	101	15	-	87	7	3	8	-
Improved recovery	32	-	32	-	-	-	-	-	-	-
Extensions and discoveries	72	-	32	-	-	27	12	-	2	-
Purchases of minerals in place	38	-	-	-	38	-	-	-	-	-
Sales of minerals in place	(34)	-	-	-	(26)	-	(8)	-	-	-
Production ⁽¹⁾	(323)	(1)	(197)	(56)	(14)	(7)	(18)	(12)	(18)	-
RESERVES AT DECEMBER 31, 2010 ^{(1) (2)}	2,091	7	991	398	114	254	132	60	135	-
Revisions of previous estimates	141	-	121	11	4	-	6	1	(3)	-
Improved recovery	19	-	19	-	-	-	-	-	-	-
Extensions and discoveries	219	-	62	-	54	40	44	-	19	-
Purchases of minerals in place	-	-	-	-	-	-	-	-	-	-
Sales of minerals in place	(1)	(1)	-	-	-	-	-	-	-	-
Production ⁽¹⁾	(290)	(1)	(180)	(49)	(13)	(10)	(20)	(11)	(7)	-
RESERVES AT DECEMBER 31, 2011 ^{(1) (2) (3)}	2,179	6	1,011	360	159	285	163	51	145	-
Revisions of previous estimates	80	1	-	17	14	-	23	2	23	-
Improved recovery	-	-	-	-	-	-	-	-	-	-
Extensions and discoveries	156	-	-	-	80	7	26	12	3	28
Purchases of minerals in place	24	-	-	-	-	-	-	-	-	24
Sales of minerals in place	(1,023)	-	(1,011)	(1)	-	-	(10)	(1)	-	-
Production ⁽¹⁾	(122)	(1)	-	(47)	(13)	(10)	(20)	(11)	(19)	(1)
RESERVES AT DECEMBER 31, 2012 ⁽¹⁾	1,294	6	-	329	240	282	182	53	152	51
PROVED DEVELOPED AND UNDEVELOPED RESERVES OF CRUDE OIL, CONDENSATE, LPG AND NATURAL GAS										
At December 31, 2009	1,461	3	812	221	108	101	96	31	89	-
At December 31, 2010	1,410	2	759	184	92	197	62	22	92	-
At December 31, 2011	1,358	2	758	149	89	188	68	23	82	-
At December 31, 2012	635	5	-	145	82	178	88	24	88	25

Note 1: 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 proved developed and undeveloped net reserves at December 31, 2012, 2011, 2010 and 2009 include an estimated approximately 176, 292, 270 and 239 million barrels of oil equivalent, respectively, in respect of royalty payments which, as described above, are a financial obligation, or are substantially equivalent to a production or similar tax. Net production in 2012, 2011 and 2010 includes an estimated 7, 28 and 29 million barrels of oil equivalent, respectively, in respect of such types of payments.

⁽²⁾ Includes 431 and 200 million barrels of oil equivalent relating to the participation in the minority interest of YPF, as of December 31, 2011 and 2010 respectively.

⁽³⁾ At December 31, 2011, proven reserves of crude oil, condensates, LPG and natural gas relating to YPF stood at 1,011 million barrels of equivalents in "Argentina" and 2 million barrels equivalent in "North America". Similarly, YPF production at December 31, 2011 amounted to 180 million barrels in "Argentina" and 0.7 million barrels equivalent in "North America".

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

The estimate of future net cash flows was performed in accordance with the guidelines and framework established for the oil and gas industry by the Securities Exchange Commission (SEC) and the principles laid down by the U.S. Financial Accounting Standards Board (FASB), which govern financial information practices in the U.S.A. The method applied is the impartiality or fairness method and is the result of applying the average oil and gas prices in 2012 (considering price changes only by contractual agreement) to estimated future production of proved reserves of oil and gas as of the date of the last balance sheet, less the estimated future costs (based on current costs) to be incurred in the development and production of proved reserves, assuming the continuation of current economic conditions.

Future production costs were estimated on based on a costs structure at the end of the year. 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, applying the principle of impartiality, 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, possible changes in future prices 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:

	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Resto of South America	North America	Africa	Asia
At DECEMBER 31, 2010										
Millions of euros										
Future cash inflows	57,177	360	29,900	5,426	3,338	3,992	3,470	3,227	7,464	–
Future production costs	(18,593)	(120)	(10,839)	(2,250)	(1,026)	(2,061)	(1,087)	(362)	(848)	–
Future development and abandonment costs	(6,827)	(183)	(3,203)	(1,385)	(425)	(235)	(571)	(518)	(307)	–
Future income tax expenses	(10,844)	2	(4,423)	(650)	(760)	(458)	(392)	(191)	(3,972)	–
Future net cash flows after taxes	20,913	59	11,435	1,141	1,127	1,238	1,420	2,156	2,337	–
10% annual discount for estimated timing of cash flows	(6,499)	40	(3,130)	(425)	(445)	(612)	(484)	(578)	(865)	–
Standardized measure of discounted future net cash flows⁽¹⁾	14,414	99	8,305	716	682	626	936	1,578	1,472	–
At DECEMBER 31, 2011										
Future cash inflows	72,363	498	32,052	6,437	5,299	6,178	7,016	4,033	10,850	–
Future production costs	(25,993)	(145)	(14,144)	(2,610)	(2,771)	(2,608)	(2,128)	(361)	(1,226)	–
Future development and abandonment costs	(9,621)	(215)	(4,687)	(1,506)	(585)	(569)	(944)	(526)	(589)	–
Future income tax expenses	(13,162)	3	(3,344)	(902)	(678)	(968)	(939)	(621)	(5,713)	–
Future net cash flows after taxes	23,587	141	9,877	1,419	1,265	2,033	3,005	2,525	3,322	–
10% annual discount for estimated timing of cash flows	(8,887)	16	(3,440)	(573)	(532)	(1,088)	(1,136)	(792)	(1,342)	–
Standardized measure of discounted future net cash flows⁽¹⁾	14,700	157	6,437	846	733	945	1,869	1,733	1,980	–
At DECEMBER 31, 2012										
Future cash inflows	43,468	449	–	6,544	6,388	5,087	8,468	3,608	11,474	1,450
Future production costs	(14,343)	(139)	–	(3,089)	(3,017)	(2,637)	(2,919)	(442)	(1,185)	(915)
Future development and abandonment costs	(4,916)	(229)	–	(1,615)	(678)	(233)	(906)	(535)	(545)	(175)
Future income tax expenses	(10,212)	15	–	(894)	(824)	(657)	(1,113)	(481)	(6,185)	(73)
Future net cash flows after taxes	13,997	96	–	946	1,869	1,560	3,530	2,150	3,559	287
10% annual discount for estimated timing of cash flows	(5,467)	65	–	(402)	(1,027)	(723)	(1,194)	(629)	(1,418)	(139)
Standardized measure of discounted future net cash flows⁽¹⁾	8,530	161	–	544	842	837	2,336	1,521	2,141	148

⁽¹⁾ Includes €2,747 and €1,681 million relating to the share of minority interest of YPF, as of December 31, 2011 and 2010.

⁽²⁾ At December 31, 2011, the current value of the net cash flows in "Argentina" related entirely to YPF. Moreover, in "North America" 16 million euros of the current value of the cash flows corresponded to YPF companies.

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 2012, 2011 and 2010 is as follows:

Millions of euros	Total	Europe	Argentina	Trinidad & Tobago	Venezuela	Peru	Rest of South America	North America	Africa	Asia
BALANCE AT 31 DECEMBER 2009 ⁽¹⁾	9,770	14	5,656	564	388	285	579	1,222	1,062	-
Changes due to sale or transfer prices or future production costs	5,074	56	2,679	370	111	130	355	501	872	-
Changes in future development costs	(1,218)	14	(747)	(55)	(4)	(88)	(120)	(194)	(24)	-
Oil and gas sales and transfers in the period	(3,887)	7	(2,021)	(373)	(121)	(56)	(246)	(417)	(660)	-
Net changes due to extensions, discoveries, and improvements in the recovery of reserves	1,718	-	1,388	-	-	217	41	-	72	-
Net changes due to purchases/sales of assets	193	-	-	-	283	-	(90)	-	-	-
Net changes due to revisions in quantity estimates	2,215	1	1,104	64	(33)	188	292	222	377	-
Previously estimated development costs incurred in the year	993	3	389	130	38	24	171	167	71	-
Effect of discounting to a different date and exchange rate effect	1,623	3	935	92	67	50	95	203	178	-
Other non-specific changes	-	-	-	-	-	-	-	-	-	-
Changes in income tax	(2,067)	1	(1,078)	(76)	(47)	(124)	(141)	(126)	(476)	-
Net change	4,644	85	2,649	152	294	341	357	356	410	-
BALANCE AT 31 DECEMBER 2010 ⁽¹⁾	14,414	99	8,305	716	682	626	936	1,578	1,472	-
Changes due to sale or transfer prices or future production costs	(497)	90	(4,420)	508	(31)	414	532	930	1,480	-
Changes in future development costs	(2,222)	(44)	(1,566)	(134)	20	(147)	(186)	(147)	(18)	-
Oil and gas sales and transfers in the period	(4,958)	(43)	(2,407)	(472)	(266)	(82)	(349)	(476)	(863)	-
Net changes due to extensions, discoveries, and improvements in the recovery of reserves	2,704	-	1,525	-	91	278	783	-	27	-
Net changes due to purchases/sales of assets	-	-	-	-	-	-	-	-	-	-
Net changes due to revisions in quantity estimates	2,153	10	1,934	59	27	(180)	163	(285)	425	-
Previously estimated development costs incurred in the year	1,499	33	627	173	46	119	225	203	73	-
Effect of discounting to a different date and exchange rate effect	1,763	12	1,011	84	80	90	121	191	174	-
Other non-specific changes	-	-	-	-	-	-	-	-	-	-
Changes in income tax	(156)	-	1,428	(88)	84	(173)	(356)	(261)	(790)	-
Net change	286	58	(1,868)	130	51	319	933	155	508	-
BALANCE AT 31 DECEMBER 2011 ^{(1) (2)}	14,700	157	6,437	846	733	945	1,869	1,733	1,980	-

Changes due to sale or transfer prices or future production costs	(205)	(3)	-	(99)	104	(228)	(2)	(40)	63	-
Changes in future development costs	(436)	(9)	-	(149)	(162)	59	(126)	(86)	37	-
Oil and gas sales and transfers in the period	(3,012)	(56)	-	(464)	(261)	(142)	(455)	(654)	(980)	-
Net changes due to extensions, discoveries, and improvements in the recovery of reserves	1,153	-	-	-	180	28	617	100	148	80
Net changes due to purchases/sales of assets	(6,373)	-	(6,312)	(3)	-	-	(110)	(16)	-	68
Net changes due to revisions in quantity estimates	1,034	6	-	38	(36)	(98)	185	131	808	-
Previously estimated development costs incurred in the year	936	48	-	208	178	69	226	165	42	-
Effect of discounting to a different date and exchange rate effect	392	11	(125)	57	58	70	102	96	123	-
Other non-specific changes	-	-	-	-	-	-	-	-	-	-
Changes in income tax	341	7	-	110	48	134	30	92	(80)	-
Net change	(6,170)	4	(6,437)	(302)	109	(108)	467	(212)	161	148
BALANCE AT 31 DECEMBER 2012 ⁽¹⁾	8,530	161	-	544	842	837	2,336	1,521	2,141	148

⁽¹⁾ Includes €2,741 and €1,681 million relating to the share of minority interest of YPF, as of December 31, 2011 and 2010.

⁽²⁾ In 2011, the net variation in the current value of the net cash flows in "Argentina" related entirely to YPF. Moreover, in "North America" 4 million euros of the variation in the current value of the cash flows related to YPF companies.