

FINANCIAL STATEMENTS 2019

*December 31, 2019, 2018 and 2017 with
report of independent registered public
accounting firm*



PETROBRAS

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Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Petróleo Brasileiro S.A. - Petrobras
Rio de Janeiro – RJ

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statement of financial position of Petróleo Brasileiro S.A. – Petrobras and subsidiaries (“the Company”) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Change in Accounting Principle

As discussed in Note 2.3 to the consolidated financial statements, the Company has changed its method of accounting for lease arrangements as of January 1, 2019 due to the adoption of IFRS 16 “Leases”.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Assessment of the valuation of the obligations for the defined benefit pension and health care plans

As discussed in notes 4.4 and 18 of the consolidated financial statements as of December 31, 2019, the Company sponsors defined benefit pension plans and health care plans that provide supplementary retirement benefits and medical care to its employees. As of December 31, 2019, the obligations under these pension and health care plans were USD 26,494 million. The determination of the Company's defined benefit pension and health care obligation with respect to these plans is dependent, in part, on the selection of certain actuarial assumptions. These assumptions include the discount rate and projected medical costs. The Company hires external actuaries to assist in the process of determining the actuarial assumptions and valuing the obligations under its pension and health care plans.

We identified the assessment of the valuation of the obligations for the defined benefit pension and health care plans as a critical audit matter because it required subjective auditor judgment. The discount rates and projected medical costs used to determine the obligations were challenging to audit as minor changes in these assumptions had a significant impact on the measurement of the obligations for the defined benefit pension and health care plans.

The primary procedures we performed to address this critical audit matter included the following:

- we tested certain internal controls over the Company's process for estimating the defined benefit pension and health care obligations. This included controls related to the development, review and approval of the discount rates and projected medical costs;
- we evaluated the scope, competency, and objectivity of the external actuaries that the Company hired to assist in estimating the obligations for the defined benefit pension and health care plans. This included assessing the nature and scope of the work they were engaged to perform and their professional qualifications and experience; and
- we involved actuarial professionals with specialized skills and knowledge, who assisted in evaluating the Company's discount rates and projected medical costs including by comparing them to external sources.

Evaluation of the impairment testing of exploration and production cash generating units ("CGUs")

As discussed in notes 4.1(b), 4.2, 4.3 and 25 to the consolidated financial statements as of December 31, 2019, for the purposes of impairment testing, the Company identifies its cash generating units ("CGUs"), estimates the recoverable amount of these CGUs and compares this amount to their carrying value. The estimation of the recoverable amount is based on cash flow projections for the CGUs. The carrying value of the exploration and production CGUs as of December 31, 2019 was USD 106,189 million. For the year ended December 31, 2019, the amount of provision expense recognized in relation to the exploration and production CGUs was USD 2,499 million.

We identified the evaluation of the impairment testing of exploration and production CGUs as a critical audit matter because there is a high degree of complexity and subjectivity of auditor judgment involved in evaluating the Company's definition of these CGUs and the estimate of the recoverable amount. The



definition of exploration and production CGUs requires auditor judgment in the consideration of operational factors that impact the interdependencies between oil and gas assets. These interdependencies alter the aggregation or segregation of the oil and gas assets into CGUs. The cash flow projections used to determine the recoverable amount are dependent on certain assumptions including: average Brent oil price; exchange rate; capital and operating expenditure and volume and timing of recovery of the oil and gas reserves. The recoverable amount is also sensitive to minor changes in the discount rate. The assessment of these assumptions required significant auditor judgment.

The primary procedures we performed to address this critical audit matter included the following:

- we tested certain internal controls over the Company's impairment assessment process. These included controls related to the review and approval of the Company's determination of the CGUs and of the key assumptions used to estimate the recoverable amount;
- for changes in exploration and production CGUs during the year, we assessed the operational factors considered by the Company when defining these changes by comparing to information obtained from internal and external sources;
- we evaluated the Company's projected recovery of oil and gas reserves by comparing with volumes certified by external specialist hired by the Company and with historical production;
- we evaluated future capital and operating expenditures by comparing to the latest approved business and management plan and long-term budgets; and
- we evaluated the Company's ability to accurately project cash flows by comparing the prior years' estimated cash flows for the year ended December 31, 2019 with actual cash flows in this year.

In addition, we involved a valuation professional with specialized skill and knowledge, who assisted in evaluating key inputs used in the impairment testing such as the discount rates, average Brent oil prices and the exchange rates by comparing them against available external market data.

Evaluation of provisions and disclosures for certain specific labor, civil and tax lawsuits

As discussed in notes 4.5 and 19 to the consolidated financial statements as of December 31, 2019, the Company is involved in labor, civil and tax lawsuits during the normal course of its activities. The Company records provisions for these lawsuits when it is probable that an outflow of resource embodying economic benefits will be required to settle a present obligation and when the outflow can be reasonably estimated. The Company discloses a contingency whenever the likelihood of loss of the lawsuit is considered possible, or when the likelihood of loss is considered probable but it is not possible to reasonably estimate the amount of the outflow.

We identified the evaluation of certain specific legal proceedings and the related provisions recognized and/or disclosures made as a critical audit matter because it required challenging auditor judgment and effort due to the subjective nature of the estimates and assumptions. Specifically judgments about the likelihood of loss and estimates of the amounts that would be paid in the event of loss.

The primary procedures we performed to address this critical audit matter included the following:

- we tested certain internal controls over the Company's evaluation of lawsuits. These included controls related to the review and approval of the determination of the likelihood of loss and the estimate of the loss amount, as well as controls over the financial statement disclosures;
- we evaluated the scope, competency, and objectivity of the internal and external legal counsel that determined the likelihood of loss and the estimate of the loss amount. This included assessing the nature and scope of the work they were engaged to perform and their professional qualifications and experience;
- we obtained and evaluated letters received directly from the Company's external legal counsel that included an assessment of the likelihood of loss and the estimate of the loss amount. For certain specific legal proceedings,



we compared these assessments and estimates to those used by the Company and evaluated the sufficiency of the Company's legal contingency disclosures; and

- we evaluated the Company's ability to accurately estimate amounts to be paid under lawsuits by comparing a sample of amounts paid upon resolution of legal proceedings during the year to the amounts provided for as of the prior year end.

Evaluation of the estimate of provision for decommissioning costs

As discussed in notes 4.1(c), 4.6 and 20 to the consolidated financial statements as of December 31, 2019, the provision for decommissioning costs reflects the obligation to restore the environment and dismantle and remove oil and gas production facilities upon abandonment. As of December 31, 2019, the Provision for decommissioning costs balance was USD17,460 million. The Company's estimate of the provision for decommissioning costs includes assumptions in relation to the extent of the obligations assumed for environmental restoration and the dismantlement and removal of oil and gas production facilities as well as the cost and timing of this work.

We identified the evaluation of the estimate of the provision for decommissioning costs as a critical audit matter because of the subjective auditor judgment that is involved to evaluate the key assumptions used in the estimate such as the extent of the decommissioning work that will be required by contract and regulations and the criteria to be met when the decommissioning actually occurs and the costs and related timing of the future payments that will be incurred in the decommissioning process.

The primary procedures we performed to address this critical audit matter included the following:

- we tested certain internal controls over the Company's process to estimate the provision for decommissioning costs. This included controls relating to the development, review and approval of the key assumptions, including estimates of the timing of abandonment and estimated costs of decommissioning;
- we assessed the estimates of timing until abandonment used by the Company, by comparing the production curves and life of the oil and gas reserves used with reserve volumes certified by external specialist hired by the Company;
- we assessed the estimated costs of decommissioning by comparing with external industry reports;
- we evaluated the scope, competency, and objectivity of the internal engineers that estimated the production curves and life of the oil and gas reserves and the external specialist hired by the Company that certified the reserve volumes. This included assessing the nature and scope of the work they were engaged to perform and their professional qualifications and experience;
- we evaluated the Company's ability to accurately forecast costs of decommissioning work, by comparing a sample of actual expenditure incurred with the decommissioning of oil and gas production facilities during the year to the Company's forecasts of that expenditure in the prior year.

/s/ KPMG Auditores Independentes

We have served as the Company's auditor since 2017.

KPMG Auditores Independentes

Rio de Janeiro – Brazil

February 19, 2020

Petróleo Brasileiro S.A. – Petrobras

Consolidated Statement of Financial Position
December 31, 2019 and December 31, 2018
(Expressed in millions of US Dollars, unless otherwise indicated)



Assets	Note	12.31.2019	12.31.2018	Liabilities	Note	12.31.2019	12.31.2018
Current assets				Current liabilities			
Cash and cash equivalents	7.1	7,372	13,899	Trade payables	15	5,601	6,327
Marketable securities	7.2	888	1,083	Finance debt	32.1	4,469	3,667
Trade and other receivables	13.1	3,762	5,746	Lease liability	33	5,737	23
Inventories	14	8,189	8,987	Income taxes payable	16.1	276	211
Recoverable income taxes	16.1	2,493	739	Other taxes payable	16.1	3,424	3,556
Other recoverable taxes	16.1	1,051	1,296	Dividends payable	34.6	1,558	1,109
Escrow account - Class action agreement	19.4	-	1,881	Short-term benefits	17	1,645	1,658
Others		1,493	1,485	Pension and medical benefits	18	887	810
		25,248	35,116	Provisions for legal proceedings	19.1	-	3,482
Assets classified as held for sale	30	2,564	1,946	Agreement with US Authorities	21.1	-	783
		27,812	37,062	Others		1,973	2,442
						25,570	24,068
				Liabilities related to assets classified as held for sale	30	3,246	983
						28,816	25,051
Non-current assets				Non-current liabilities			
Long-term receivables				Finance debt	32.1	58,791	80,508
Trade and other receivables	13.1	2,567	5,492	Lease liability	33	18,124	162
Marketable securities	7.2	58	53	Income taxes payable	16.1	504	552
Judicial deposits	19.2	8,236	6,711	Deferred income taxes	16.6	1,760	654
Deferred income taxes	16.6	1,388	2,680	Pension and medical benefits	18	25,607	21,940
Other tax assets	16.1	3,939	3,540	Provisions for legal proceedings	19.1	3,113	3,923
Advances to suppliers		326	666	Provision for decommissioning costs	20	17,460	15,133
Others		1,177	2,917	Others		1,350	970
		17,691	22,059			126,709	123,842
						155,525	148,893
				Total liabilities			
				Equity			
Investments	29	5,499	2,759	Share capital (net of share issuance costs)	34.1	107,101	107,101
Property, plant and equipment	23.1	159,265	157,383	Capital reserve and capital transactions		1,064	1,067
Intangible assets	24.1	19,473	2,805	Profit reserves		65,627	58,161
		201,928	185,006	Accumulated other comprehensive (deficit)		(100,469)	(94,785)
				Attributable to the shareholders of Petrobras		73,323	71,544
				Non-controlling interests	29.5	892	1,631
						74,215	73,175
Total assets		229,740	222,068	Total liabilities and equity		229,740	222,068

The notes form an integral part of these financial statements.

Petróleo Brasileiro S.A. – Petrobras

Consolidated Statement of Income
Years ending December 31, 2019, 2018 and
2017

(Expressed in millions of US Dollars, unless otherwise indicated)



and

	Note	2019	2018 Reclassified	2017 Reclassified
Sales revenues	8.2	76,589	84,638	77,884
Cost of sales	9.1	(45,732)	(52,184)	(51,198)
Gross profit		30,857	32,454	26,686
Income (expenses)				
Selling expenses	9.2	(4,476)	(3,827)	(3,614)
General and administrative expenses	9.3	(2,124)	(2,239)	(2,656)
Exploration costs	26	(799)	(524)	(800)
Research and development expenses		(576)	(641)	(572)
Other taxes		(619)	(670)	(1,789)
Impairment of assets	25	(2,848)	(2,005)	(1,191)
Other income and expenses	10	1,199	(5,760)	(5,511)
		(10,243)	(15,666)	(16,133)
Income before finance income (expense), results in equity-accounted investments and income taxes		20,614	16,788	10,553
Finance income		1,330	2,381	928
Finance expenses		(7,086)	(5,675)	(7,006)
Foreign exchange gains (losses) and inflation indexation charges		(3,008)	(3,190)	(3,641)
Net finance income (expense)	11	(8,764)	(6,484)	(9,719)
Results of equity-accounted investments	29.2	153	523	673
Net income before income taxes		12,003	10,827	1,507
Income taxes	16.5	(4,200)	(4,256)	(1,697)
Net income (loss) from continuing operations for the year		7,803	6,571	(190)
Net income from discontinued operations for the year	10.2	2,560	843	359
Net income for the year		10,363	7,414	169
Non-controlling interests		212	241	260
Net income (loss) from continuing operations		143	(1)	157
Net income from discontinued operations		69	242	103
Net income (loss) attributable to shareholders of Petrobras		10,151	7,173	(91)
Net income (loss) from continuing operations		7,660	6,572	(347)
Net income from discontinued operations		2,491	601	256
Basic and diluted earnings per common and preferred share - in U.S. dollars	34.7	0.78	0.55	(0.01)

The notes form an integral part of these financial statements.

Petróleo Brasileiro S.A. – Petrobras

Consolidated Statement of Comprehensive



Income

Years ending December 31, 2019 and 2018

(Expressed in millions of US Dollars, unless otherwise indicated)

	2019	2018 Reclassified	2017 Reclassified
Net income for the year	10,363	7,414	169
Items that will not be reclassified to the statement of income:			
Actuarial gains (losses) on post-employment defined benefit plans			
Recognized in equity	(5,589)	(3,130)	1,908
Deferred income tax	1,491	(119)	(273)
	(4,098)	(3,249)	1,635
Unrealized gains (losses) on equity instruments measured at fair value through other comprehensive income			
Recognized in equity	-	(5)	-
Deferred income tax	-	2	-
	-	(3)	-
Share of other comprehensive income (losses) in equity-accounted investments	-	-	(1)
Items that may be reclassified subsequently to the statement of income:			
Unrealized gains (losses) on cash flow hedge - highly probable future exports			
Recognized in equity	(3,510)	(8,950)	(543)
Reclassified to the statement of income	3,136	3,315	3,154
Deferred income tax	126	1,916	(887)
	(248)	(3,719)	1,724
Cumulative translation adjustments (*)			
Recognized in equity	(1,465)	(6,409)	(851)
Reclassified to the statement of income	34	-	37
	(1,431)	(6,409)	(814)
Share of other comprehensive income in equity-accounted investments	69	(135)	156
Unrealized gains (losses) on equity instruments measured at fair value through other comprehensive income			
Recognized in equity	-	-	15
Deferred income tax	-	-	(4)
	-	-	11
Unrealized gains (losses) on cash flow hedge - others			
Recognized in equity	-	-	(5)
Total other comprehensive income (loss)	(5,708)	(13,515)	2,706
Total comprehensive income (loss)	4,655	(6,101)	2,875
Comprehensive income attributable to non-controlling interests	186	65	291
Comprehensive income (loss) attributable to shareholders of Petrobras	4,469	(6,166)	2,584

(*) It includes a US\$ 131 loss (a US\$ 236 loss in 2018 and a US\$ 49 loss in 2017), of cumulative translation adjustments in associates and joint ventures.

The notes form an integral part of these financial statements.

Petróleo Brasileiro S.A. – Petrobras

Consolidated Statement of Cash Flows

Years ending December 31, 2019, 2018 and 2017

(Expressed in millions of US Dollars, unless otherwise indicated)



	2019	2018 Reclassified	2017 Reclassified
Cash flows from Operating activities			
Net income for the year	10,363	7,414	169
Adjustments for:			
Net income from discontinued operations	(2,560)	(843)	(359)
Pension and medical benefits (actuarial expense)	2,086	2,018	2,569
Results of equity-accounted investments	(153)	(523)	(673)
Depreciation, depletion and amortization	14,836	11,912	13,166
Impairment of assets (reversal)	2,848	2,005	1,191
Allowance (reversals) for credit loss on trade and other receivables	87	91	720
Exploratory expenditure write-offs	308	87	279
Foreign exchange, indexation and finance charges	8,460	7,941	9,413
Deferred income taxes, net	2,798	370	400
Revision and unwinding of discount on the provision for decommissioning costs	950	31	425
Inventory write-down (write-back) to net realizable value	15	421	66
Provision for the class action agreement	-	-	3,449
Disposal/write-offs of assets, remeasurement of investment retained with loss of control and reclassification of CTA	(6,012)	(416)	(1,656)
Decrease (Increase) in assets			
Trade and other receivables, net	2,233	(1,535)	(879)
Inventories	(281)	(2,108)	(171)
Judicial deposits	(2,144)	(2,040)	(1,669)
Escrow account - Class action agreement	1,819	(2,019)	-
Other assets	(219)	461	(126)
Increase (Decrease) in liabilities			
Trade payables	(989)	858	(121)
Other taxes payable	225	2,265	2,960
Pension and medical benefits	(1,882)	(1,002)	(876)
Provisions for legal proceedings	(3,767)	1,686	305
Short-term benefits	185	529	(755)
Provision for decommissioning costs	(512)	(500)	(426)
Agreement with US authorities	(768)	(85)	-
Other liabilities	(319)	996	83
Income taxes paid	(2,330)	(2,567)	(769)
Net cash provided by operating activities from continuing operations	25,277	25,447	26,715
Discontinued operations – net cash provided by operating activities	323	906	397
Net cash provided by operating activities	25,600	26,353	27,112
Cash flows from Investing activities			
Acquisition of PP&E and intangibles assets (except for the Bidding for oil surplus of Transfer of rights agreement)	(8,556)	(11,905)	(13,546)
Bidding for oil surplus of Transfer of rights agreement	(15,341)	-	-
Investments in investees	(7)	(44)	(2,069)
Proceeds from disposal of assets - Divestment	10,413	5,791	3,087
Reimbursement on the Transfer of rights agreement	8,361	-	-
Divestment (Investment) in marketable securities	198	704	(861)
Dividends received	1,436	994	662
Net cash used in investing activities from continuing operations	(3,496)	(4,460)	(12,727)
Discontinued operations – net cash provided by (used in) investing activities	1,812	(44)	727
Net cash used in investing activities	(1,684)	(4,504)	(12,000)
Cash flows from Financing activities			
Investments by non-controlling interest	(29)	43	(797)
Proceeds from financing	7,464	10,707	27,075
Repayment of finance debt - principal	(27,273)	(34,013)	(33,618)
Repayment of finance debt - interest	(4,501)	(5,703)	(6,500)
Repayment of lease liability - principal	(5,207)	-	-
Dividends paid to Shareholders of Petrobras	(1,877)	(625)	-
Dividends paid to non-controlling interests	(138)	(103)	(167)
Proceeds from sale of interest without loss of control	-	-	1,511
Net cash used in financing activities from continuing operations	(31,561)	(29,694)	(12,496)
Discontinued operations – net cash used in financing activities	(508)	(156)	(1,177)
Net cash used in financing activities	(32,069)	(29,850)	(13,673)
Effect of exchange rate changes on cash and cash equivalents	1,631	(619)	(125)
Net increase (decrease) in cash and cash equivalents	(6,522)	(8,620)	1,314
Cash and cash equivalents at the beginning of the period	13,899	22,519	21,205
Cash and cash equivalents at the end of the period	7,377	13,899	22,519

The notes form an integral part of these financial statements.

Petróleo Brasileiro S.A. – Petrobras

Consolidated Statement of Changes in Shareholders' Equity

Years ending December 31, 2019, 2018 and 2017

(Expressed in millions of US Dollars, unless otherwise indicated)



	Share capital (net of share issuance costs)			Accumulated other comprehensive income (deficit) and deemed cost				Profit Reserves							
	Share Capital	Share issuance costs	Capital reserve, Capital Transactions and Treasury shares	Cumulative translation adjustment	Cash flow hedge - highly probable future exports	Actuarial gains (losses) on defined benefit pension plans	Other comprehensive income (loss) and deemed cost	Legal	Statutory	Tax incentives	Profit retention	Retained earnings	Equity attributable to shareholders of Petrobras	Non-controlling interests	Total consolidated equity
	107,380	(279)	628	(60,248)	(11,297)	(11,600)	(948)	7,919	2,182	720	42,322	-	76,779	771	77,550
Balance at January 1, 2017		107,101	628				(84,093)				53,143	-	76,779	771	77,550
Realization of deemed cost	-	-	-	-	-	-	(4)	-	-	-	-	4	-	-	-
Capital transactions	-	-	439	-	-	-	-	-	-	-	-	-	439	792	1,231
Net income	-	-	-	-	-	-	-	-	-	-	-	(91)	(91)	260	169
Other comprehensive income	-	-	-	(795)	1,724	1,585	161	-	-	-	-	-	2,675	31	2,706
Appropriations:															
Transfer to reserves	-	-	-	-	-	-	-	-	-	-	(87)	87	-	-	-
Dividends	-	-	-	-	-	-	-	-	-	-	-	-	-	(154)	(154)
	107,380	(279)	1,067	(61,043)	(9,573)	(10,015)	(791)	7,919	2,182	720	42,235	-	79,802	1,700	81,502
Balance at December 31, 2017		107,101	1,067				(81,422)				53,056	-	79,802	1,700	81,502
Initial application of IFRS 9							(20)					(222)	(242)	(15)	(257)
	107,380	(279)	1,067	(61,043)	(9,573)	(10,015)	(811)	7,919	2,182	720	42,235	(222)	79,560	1,685	81,245
Balance at January 1, 2018		107,101	1,067				(81,442)				53,056	(222)	79,560	1,685	81,245
Realization of deemed cost	-	-	-	-	-	-	(4)	-	-	-	-	4	-	-	-
Capital transactions	-	-	2	-	-	-	-	-	-	-	-	-	2	115	117
Net income	-	-	-	-	-	-	-	-	-	-	-	7,173	7,173	241	7,414
Other comprehensive income	-	-	-	(6,273)	(3,719)	(3,209)	(138)	-	-	-	-	-	(13,339)	(176)	(13,515)
Appropriations:															
Transfer to reserves	-	-	-	-	-	-	-	338	270	203	4,294	(5,105)	-	-	-
Dividends	-	-	-	-	-	-	-	-	-	-	-	(1,850)	(1,850)	(234)	(2,084)
	107,380	(279)	1,067	(67,316)	(13,292)	(13,224)	(953)	8,257	2,452	923	46,529	-	71,544	1,631	73,175
Balance at December 31, 2018		107,101	1,067				(94,785)				58,161	-	71,544	1,631	73,175
	107,380	(279)	1,067	(67,316)	(13,292)	(13,224)	(953)	8,257	2,452	923	46,529	-	71,544	1,631	73,175
Balance at December 31, 2018		107,101	1,067				(94,785)				58,161	-	71,544	1,631	73,175
Realization of deemed cost	-	-	-	-	-	-	(2)	-	-	-	-	2	-	-	-
Capital transactions	-	-	(3)	-	-	-	-	-	-	-	-	-	(3)	(658)	(661)
Net income	-	-	-	-	-	-	-	-	-	-	-	10,151	10,151	212	10,363
Other comprehensive income (loss)	-	-	-	(1,405)	(248)	(4,098)	69	-	-	-	-	-	(5,682)	(26)	(5,708)
Appropriations:															
Transfer to reserves	-	-	-	-	-	-	-	488	250	179	6,549	(7,466)	-	-	-
Dividends	-	-	-	-	-	-	-	-	-	-	-	(2,687)	(2,687)	(267)	(2,954)
	107,380	(279)	1,064	(68,721)	(13,540)	(17,322)	(886)	8,745	2,702	1,102	53,078	-	73,323	892	74,215
Balance at December 31, 2019		107,101	1,064				(100,469)				65,627	-	73,323	892	74,215

The notes form an integral part of these financial statements.

1. The Company and its operations

Petróleo Brasileiro S.A. (Petrobras), hereinafter referred to as “Petrobras” or “Company,” is a partially state-owned enterprise, controlled by the Brazilian Federal Government, of indefinite duration, governed by the terms and conditions under the Brazilian Corporate Law (Law 6,404 of December 15, 1976), Law 13,303 of June 30, 2016 and its Bylaws.

Petrobras’ shares are listed on the Brazilian stock exchange (B3) in the Level 2 Corporate Governance special listing segment and, therefore, the Company, its shareholders, its managers and fiscal council members are subject to provisions under its regulation (Level 2 Regulation - *Regulamento de Listagem do Nível 2 de Governança Corporativa da Brasil Bolsa Balcão* – B3). The provisions of the Level 2 Regulation, which are based on high standards of corporate governance, shall prevail over statutory provisions in the event of harm to the rights of public offers investors provided for in the Company’s Bylaws, except when otherwise determined by other regulation. On February 13, 2020, as requested, Petrobras had its disassociation from the B3 State-Owned Governance Program approved.

The Company is dedicated to prospecting, drilling, refining, processing, trading and transporting crude oil from producing onshore and offshore oil fields and from shale or other rocks, as well as oil products, natural gas and other liquid hydrocarbons. In addition, Petrobras carries out energy related activities, such as research, development, production, transport, distribution and trading of all forms of energy, as well as other related or similar activities.

Petrobras may perform any of the activities related to its corporate purpose, directly, through its wholly-owned subsidiaries, controlled companies, alone or through joint ventures with third parties, in Brazil or abroad.

The economic activities linked to its business purpose shall be undertaken by the Company in free competition with other companies according to market conditions, in compliance with the other principles and guidelines of Laws no. 9,478/97 and 10,438/02 (oil & gas and electricity sector regulations, respectively). However, Petrobras may have its activities, provided they are in compliance with its corporate purpose, guided by the Brazilian Federal Government to contribute to the public interest that justified its creation, aiming to meet national energy policy objectives when:

I – established by law or regulation, as well as under agreements provisions with a public entity that is competent to establish such obligation, abiding with the broad publicly stated of such instruments; and

II – the cost and revenues thereof have been broken down and disseminated in a transparent manner.

In this case, the Company’s Investment Committee and Minority Shareholders Committee, exercising their advisory role to the Board of Directors, shall assess and measure the difference between such market conditions and the operating result or economic return of the transaction, based on technical and economic criteria for investment valuation and specific operating costs and results under the Company’s operations. In this case, for every financial year, the Brazilian Federal Government shall compensate the Company.

2. Basis of preparation

2.1. Statement of compliance and authorization of financial statements

These consolidated financial statements have been prepared and are being presented in accordance with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

The consolidated financial statements have been prepared under the historical cost convention, except when otherwise indicated. The significant accounting policies used in the preparation of these financial statements are set out in their respective explanatory notes.

The preparation of the financial statements requires the use of estimates and assumptions which may affect the application of accounting policies and reported amounts of assets, liabilities, revenues and expenses. Although our management periodically reviews these assumptions and judgments, the actual results could differ from these estimates. For further information on accounting estimates, see note 4.

As presented in note 30.2, with the additional sale of the Company’s interest in the subsidiary Petrobras Distribuidora (BR), carried out through a secondary public offering (follow-on), in July 2019, all requirements were met to classify this investment as a discontinued operation, in accordance with IFRS 5 - Non-current Assets Held for Sale and Discontinued Operations, since it represented a separate major line of business. Thus, the consolidated statements of income and cash flows present net income, operating, investing and financing cash flows relating to this investment in separate line items, as a net result of discontinued operations. Additionally, the consolidated statements of income and cash flows for the years ended December 31, 2018 and 2017 were adjusted in a similar manner.

The annual consolidated financial statements were approved and authorized for issue by the Company's Board of Directors in a meeting held on February 19, 2020.

2.2. Functional and presentation currency

The functional currency of Petrobras and all of its Brazilian subsidiaries is the Brazilian Real. The functional currency of the Petrobras direct subsidiaries that operate outside Brazil is the U.S. dollar.

Petrobras has selected the U.S. dollar as its presentation currency to facilitate a more direct comparison to other oil and gas companies. The financial statements have been translated from the functional currency (Brazilian real) into the presentation currency (U.S. dollar). All assets and liabilities are translated into U.S. dollars at the closing exchange rate at the date of the financial statements; income and expenses, as well as cash flows are translated into U.S. dollars using the average exchange rates prevailing during the period. All exchange differences arising from the translation of the consolidated financial statements from the functional currency into the presentation currency are recognized as cumulative translation adjustments (CTA) within accumulated other comprehensive income in the consolidated statements of changes in shareholders' equity.

Brazilian Real x U.S. Dollar	Dec 19	Sep 19	Jun 19	Mar 19	Dec 18	Sep 18	Jun 18	Mar 18	Dec 17	Sep 17	Jun 17	Mar 17
Quarterly average exchange rate	4.12	3.97	3.92	3.77	3.81	3.95	3.61	3.24	3.25	3.16	3.22	3.15
Period-end exchange rate	4.03	4.16	3.83	3.90	3.87	4.00	3.86	3.32	3.31	3.17	3.31	3.17

2.3. Initial adoption of new accounting standards

At January 1, 2019, the Company adopted IFRS 16 – Leases. A number of other new standards are also effective from January 1, 2019 but they do not have material effect on the Company's financial statements.

2.3.1. IFRS 16 – Leases

Among the changes arising from IFRS 16, this standard eliminated the classification of leases as either operating or finance leases for lessees, providing for a single lessee accounting model in which all leases result in the recognition of a right-of-use asset and a lease liability. For more information regarding the effects of the adoption of IFRS 16, see notes 10, 21 and 31.

Following the adoption of IFRS 16, lease payments under operating leases are not charged to operating results on accrual basis. Instead, depreciation of the right to use a leased asset, as well as the finance expenses and foreign exchange gains or losses over the lease liability, affect the results.

In the statement of cash flows, the lease payments previously presented within Cash flows from operating and investing activities are presented from 2019 onwards as Cash flows from financing activities (US\$ 5,207 in 2019), comprising the settlement of lease liabilities. However, such change does not affect the Company's cash and cash equivalents balance.

According to the transition provisions set forth in IFRS 16, the Company applied this standard retrospectively with the cumulative effect of its initial application recognized at January 1, 2019, without restatement of prior period information, and the following practical expedients were chosen:

- Application of this standard to contracts that were previously identified as leases (note 18.2 to the Company's audited financial statements ended December 31, 2018);
- Lease liabilities measured at the present value of the remaining lease payments, net of applicable recoverable taxes, discounted by the lessee's incremental borrowing rate at the date of initial application;
- Recognition of right-of-use assets at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognized in the statement of financial position immediately before the date of initial application, excluding initial direct costs.

The Company applies the short-term lease exemption and recognizes payments associated with such leases as expenses over the term of the arrangements.

At January 1, 2019, the Company accounted for right-of-use assets and lease liabilities at the same amount (US\$ 26,575) and, as a result, the impacts arising from the initial application of this standard did not affect equity. The right-of-use assets are presented as Property, Plant and Equipment (PP&E), and the lease liabilities are presented as a separate line item in the statement of financial position.

Right-of-use by underlying asset at January 1, 2019

Oil and gas producing units	12,925
Vessels	11,996
Lands and buildings	1,011
Others	643
Total	26,575

The incremental borrowing rate at the date of initial application was 6.06%.

Reconciliation between operating lease commitments disclosed as of December 31, 2018 and lease liabilities recognized at the date of initial application is presented below:

Commitment to operating lease as of December 31, 2018	95,379
Commitments for which lease terms have not commenced	(54,825)
Discount	(9,980)
Short-term leases and others	(3,999)
Initial application	26,575
Finance lease (IAS 17) recognized at December 31, 2018	185
Lease liability at January 1, 2019	26,760

The changes arising from the adoption of IFRS 16 did not impact the Company's business practice and there was no need to renegotiate covenant clauses in finance debts.

2.4. Order of presentation of the explanatory notes

As recommended in the Conceptual Framework for Financial Reporting, the expectations of users of financial statements regarding the Company's returns depend on their assessment of the amount, timing and uncertainty of (the prospects for) future net cash inflows to the entity and on their assessment of management's stewardships of the entity's economic resources.

Thus, we promoted a change in the order of the explanatory notes in order to align the Company's financial statements with the users' view, in addition to emphasizing the importance of the Company's Strategic Management.

Thus, after the explanatory notes presenting the Company and its operations, and those related to the conceptual structure applied in the preparation of the financial statements, it begins with the explanatory note on Capital Management, followed by the other notes, following primarily the groupings of cash flow statement activities.

3. Summary of significant accounting policies

The accounting policies used in the preparation of the annual financial statements of the Company, for the year ended December 31, 2019, are set out at the end of each explanatory note, consistently with those adopted and disclosed in the financial statements of the previous years, except for the changes arising from the adoption of IFRS 16 – Leases and IFRIC 23 - Uncertainty over Income Tax Treatments, which became effective on January 1, 2019.

4. Critical accounting policies: key estimates and judgments

The preparation of the consolidated financial information requires the use of estimates and judgments for certain transactions and their impacts on assets, liabilities, income and expenses. The assumptions are based on past transactions and other relevant information and are periodically reviewed by management, although the actual results could differ from these estimates.

Information about those areas that require significant judgment or involve a higher degree of complexity in the application of the accounting policies and that could materially affect the Company's financial condition and results of operations is set out as follows.

4.1. Oil and gas reserves

Oil and gas reserves are estimated based on economic, geological and engineering information, such as well logs, pressure data and drilling fluid sample data and are used as the basis for calculating unit-of-production depreciation, depletion and amortization rates, impairment testing, decommissioning costs estimates and for projections of high probable future exports subject to cash flow hedge.

These estimates require the application of judgment and are reviewed at least annually based on a re-evaluation of already available geological, reservoir or production data and new geological, reservoir or production data, as well as changes in prices and costs that are used in the estimation of reserves. Revisions can also result from significant changes in the Company's development strategy or in the production capacity.

The Company determines its oil and gas reserves both pursuant to the U.S. Securities and Exchange Commission - SEC and the ANP/SPE (Brazilian Agency of Petroleum, Natural Gas and Biofuels / Society of Petroleum Engineers) criteria. The main differences between the two criteria are: selling price of crude oil (ANP/SPE establishes the use of the Company's forecasted price, while SEC determines the use of an average price considering each first day of the last 12 months); concession period (ANP permission for the use of reserve quantities after the concession period). Additionally, pursuant to the SEC criteria, only proved reserves are determined, while proved and unproved reserves are determined pursuant to the ANP/SPE criteria.

According to the definitions prescribed by the SEC, proved oil and gas reserves are those quantities of oil and gas which, by analysis of geoscientific 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 regulation. Proved reserves are subdivided into developed and undeveloped reserves.

Proved developed oil and gas reserves are those that can be expected to be recovered through: (i) existing wells with existing equipment and operating methods; (ii) extraction technology installed and operational at the time of the reserves estimate, extracting oil and gas in other ways than using wells.

Although the Company is reasonably certain that proved reserves will be produced, the timing and amount recovered can be affected by a number of factors including completion of development projects, reservoir performance, regulatory aspects and significant changes in long-term oil and gas price levels.

Detailed information on reserves is presented as unaudited supplementary information.

a) Impacts of oil and gas reserves on depreciation, depletion and amortization

Depreciation, depletion and amortization are measured based on estimates of reserves prepared by the Company's technicians in a manner consistent with SEC definitions. Reviews to the Company's proved developed and undeveloped reserves impact prospectively the amounts of depreciation, depletion and amortization recognized in the statement of income and the carrying amounts of oil and gas properties assets.

Therefore, considering all other variables being constant, a decrease in estimated proved reserves would increase, prospectively, depreciation, depletion and amortization expense, while an increase in reserves would reduce depreciation, depletion and amortization.

Note 23 provides more detailed information on depreciation, amortization and depletion.

b) Impacts of oil and gas reserves on impairment testing

The Company assesses the recoverability of the carrying amounts of oil and gas exploration and development assets annually, regardless of any absence of impairment indication. The measurement of their value in use is based on proved and probable reserves pursuant to the ANP/SPE definitions. Note 4.2 provides further information on other assumptions used in impairment testing.

c) Impacts of oil and gas reserves on decommissioning costs estimates

The timing of abandonment and dismantling areas is based on the length of reserves depletion, in accordance with ANP/SPE definitions. Therefore, the review of the timing of reserves depletion may impact the provision for decommissioning cost estimates. Note 4.6 provides further information on other assumptions used in estimating the provision for decommissioning costs.

d) Impacts of oil and gas reserves on highly probable future exports subject to cash flow hedge accounting

The Company estimates highly probable future exports in accordance with future exports forecasted in the scope of its Strategic Plan projections, which are driven by proved and probable reserves estimates. Changes in such estimates may impact future exports forecasts and, consequently, hedge relationship designations may also be impacted. Note 4.8 provides further information on other assumptions used in determining highly probable future exports.

4.2. Main assumptions for impairment testing

Impairment testing involves uncertainties mainly related to its key assumptions: average Brent prices and Brazilian real/U.S. dollar average exchange rate. These assumptions are relevant to virtually all of the Company's operating segments and a significant number of interdependent variables are derived from these key assumptions and there is a high degree of complexity in their application in determining value in use for impairment tests.

The markets for crude oil and natural gas have a history of significant price volatility and although prices can drop precipitously, industry prices over the long term tends to continue being driven by market supply and demand fundamentals.

Projections relating to the key assumptions are derived from the Strategic Plan for the first five years and consistent with the Strategic Plan for the following years. These assumptions are consistent with market evidence, such as independent macro-economic forecasts, industry commentators and experts. Back testing analysis and feedback process in order to continually improve forecast techniques are also performed.

The Company's oil price forecast model is based on a nonlinear relationship between variables reflecting market supply and demand fundamentals. This model also takes into account other relevant factors, such as historical idle capacity, industry costs, oil and gas production forecasted by specialized firms, the relationship between the oil price and the U.S. dollar exchange rate, as well as the impact of OPEC on the oil market.

The Real/U.S. dollar exchange rate projections are based on econometric models that take into account long-term assumptions involving observable inputs, such as country risk, commodity prices, interest rates and the value of the U.S. Dollar relative to a basket of foreign currencies (U.S. Dollar Index – USDIX).

Changes in the economic environment may result in changing assumptions and, consequently, the recognition of impairment charges on certain assets or CGUs. For example, the Brent price directly impacts the Company's sales revenue and refining margins, while the Brazilian real/U.S. dollar exchange rate mainly impacts our capital and operating expenditures.

Changes in the economic and political environment may also result in higher country risk projections that would increase discount rates for impairment testing.

In addition, changes in reserve volumes, production curve expectations and lifting costs could trigger the need for impairment assessment, as well as capital expenditure decisions, which are also affected by the Company's plan to reduce its leverage, may result in postponement or termination of projects, reducing their economic feasibility.

The recoverable amount of certain assets may not substantially exceed their carrying amounts and, therefore, it is reasonably possible that outcomes in future periods that are different from the current assumptions may result in the recognition of additional impairment charges on these assets, as described in note 25.1.1.

4.3. Identifying cash-generating units for impairment testing

Identifying cash-generating units (CGUs) requires management assumptions and judgment, based on the Company's business and management model. Changes in the aggregation of assets into CGUs may occur due to a review of investment, strategic or operational factors, which could result in changes in the interdependencies between those assets and, consequently, alter the aggregation or breakdown of assets into CGUs. Therefore, this change could result in additional impairment charges or reversals. The primary considerations in relation to identifying the CGUs are set out below:

a) Exploration and Production CGUs:

i) Crude oil and natural gas producing properties CGU: comprises exploration and development assets related to crude oil and natural gas fields and groups of fields in Brazil and abroad. At December 31, 2019, Exploration and Production CGUs had 124 fields and 41 groups. Changes in the aggregation of CGUs are presented in note 25.

ii) Drilling rigs are not part of any CGU and are assessed for impairment separately.

b) Refining, transportation and marketing CGUs:

i) Downstream CGU: comprises refineries and associated assets, terminals and pipelines, as well as logistics assets operated by Transpetro, with a combined and centralized operation of logistical and refining assets in Brazil. These assets are managed with a common goal of achieving efficiency, profitability and strategic value long term on a nationwide basis. They are not operated for the generation of profit by asset/location. The operational planning is made in a centralized manner and these assets are not managed, measured or evaluated by their

individual results. The refineries do not have autonomy to choose the oil to be processed, the mix of oil products to produce, the markets in which these products will be traded, which amounts will be exported, which intermediaries will be received and to decide the sales prices of oil products. The operational decisions are analyzed through an integrated model of operational planning for market supply. This model evaluates the solutions to supply the market considering all the options for production, importing, exporting, logistics and inventories seeking a comprehensive optimum of Petrobras and not the profit of each unit. The decision regarding a new investment is not based on the profitability of the project for the asset where it will be installed, but for the Petrobras Group. The model in which the entire planning is based, used in the studies of technical and economic feasibility of new investments in refining, may, in its indications, allocate a lower economic kind of oil to a certain refinery or define a lower economic mix of products to it, or even force it to supply more distant markets (area of influence), leading it to operate with reduced margins if seen individually, in case this is the best for the integrated system as a whole. Pipelines and terminals are an integral part and interdependent portion of the refining assets, required to supply the market.

- ii) CGU Comperj – comprises assets under construction of the first refining unit of Petrochemical Complex of Rio de Janeiro;
- iii) CGU Second Refining Unit of RNEST – comprises assets under construction of the second refining unit of Abreu e Lima refinery;
- iv) Transportation CGU: comprises assets relating to Transpetro's fleet of vessels;
- v) PANAMAX CGU: comprises three Panamax class vessels under construction (EI-512, EI-513 and EI-514);
- vi) Hidrovia CGU: comprises the fleet of vessels under construction of the Hidrovia project (transportation of ethanol along the Tietê River);
- vii) SIX CGU: shale processing plant; and
- viii) Other operations abroad defined as the smallest group of assets that generates independent cash flows.

c) Gas & Power CGUs:

- i) Natural gas CGU: comprises natural gas pipelines, natural gas processing plants, consolidating the purchase, transportation and treatment of natural gas businesses, in order to enable the commercialization of natural gas and its liquids (LPG, NGL and ethane);
- ii) CGU nitrogen fertilizer plants: the nitrogen fertilizer plants have been assessed for impairment separately;
- iii) Power CGU: comprises the thermoelectric power generation plants;
- iv) Fafens CGUs: The fertilizer plants Fafen BA and Fafen SE have been assessed for impairment separately since 2017;
- v) Other CGUs: operations abroad defined as the smallest group of assets that generates largely independent cash flows.

d) Biofuels business CGUs:

- i) Biodiesel CGU: an integrated unit of biodiesel plants defined based on the production planning and operation process, that takes into consideration domestic market conditions, the production capacity of each plant, as well as the results of biofuels auctions and raw materials supply.
- ii) Quixadá CGU: comprises the assets of Quixadá Biofuel Plant. This plant is assessed for impairment separately due to the decision to discontinue its operations.

Investments in associates and joint ventures, including goodwill, are assessed for impairment separately.

Further information on impairment testing is set out in note 25.

4.4. Pension and other post-retirement benefits

The actuarial obligations and net expenses related to defined benefit pension and health care post-retirement plans are computed based on several financial and demographic assumptions, of which the most significant are:

- Discount rate: comprises the projected future inflation in addition to an equivalent real interest rate that matches the duration of the pension and health care obligations with the future yield curve of long-term Brazilian Government Bonds; and

- Medical costs: comprise the projected growth rates based on per capita health care benefits paid over the last five years, which are used as a basis for projections, converged to the general price inflation index within 30 years.

These and other estimates are reviewed at least annually and may differ materially from actual results due to changing market and financial conditions, as well as actual results of actuarial assumptions.

The sensitivity analysis of discount rates and changes in medical costs as well as additional information about actuarial assumptions are set out in note 18.

4.5. Estimates related to contingencies and legal proceedings

The Company is defendant in arbitrations and in legal and administrative proceedings involving civil, tax, labor and environmental issues arising from the normal course of its business, and makes use of estimates to recognize the amounts and the probability of outflow of resources, based on reports and technical assessments from legal advisors and on management's assessment.

These estimates are performed individually, or aggregated if there are cases with similar characteristics, primarily considering factors such as assessment of the plaintiff's demands, consistency of the existing evidence, jurisprudence on similar cases and doctrine on the subject. Specifically for lawsuits by outsourced employees, the Company estimates the expected loss based on a statistical procedure, due to the number of actions with similar characteristics.

Arbitral, legal and administrative decisions against the Company, new jurisprudence and changes of existing evidence can result in changes regarding the probability of outflow of resources and on the estimated amounts, according to the assessment of the legal basis.

Note 19 provides further detailed information about contingencies and legal proceedings.

4.6. Decommissioning costs estimates

The Company has legal and constructive obligations to remove equipment and restore onshore and offshore areas at the end of operations. Its most significant asset removal obligations involve removal and disposal of offshore oil and gas production facilities in Brazil and abroad. Estimates of costs for future environmental cleanup and remediation activities are based on current information about costs and expected plans for remediation. The recognition of these obligations must be at present value, using a risk-free discount rate, adjusted to the Company's credit risk. Due to the long term until the abandonment, changes in the discount rate can cause significant variations in the recognized amount.

These estimates require performing complex calculations that involve significant judgment since: i) the obligations are long-term; ii) the contracts and regulations contain subjective definitions of the removal and remediation practices and criteria involved when the events actually occur; and iii) asset removal technologies and costs are constantly changing, along with regulations, environmental, safety and public relations considerations.

The Company conducts studies to incorporate technologies and procedures to optimize the process of abandonment, considering industry best practices. However, the timing and amounts of future cash flows are subject to significant uncertainty.

Note 20 provides further detailed information about the decommissioning provisions.

4.7. Deferred income taxes

The recognition of deferred taxes involves significant estimates and judgments by the Company. Deferred tax assets are recognized to the extent that it is probable that taxable profit will be available against which a deductible temporary difference can be utilized or it is probable that the entity will have sufficient taxable profit in future periods. In evaluating whether it will have sufficient taxable profit in future periods to support the recognition of deferred tax assets, the Company uses future projections and estimates based on its Strategic Plan, which is approved by the Board of Directors annually. Future taxable profits projections are mainly based on the following assumptions: i) Brent crude oil prices; ii) foreign exchange rates; and iii) the Company's projected net finance expenses (income).

Changes in deferred tax assets and liabilities are presented in note 16.6.

4.8. Cash flow hedge accounting involving the Company's future exports

The Company determines its future exports as "highly probable future exports" based on its current Strategic Plan. The highly probable future exports are determined by a percentage of projected exports revenue over the mid and long term, taking into account the Company's operational and capital expenditure optimization model, limited to a threshold based on a historical percentage of the oil production that is

usually sold abroad. Future exports forecasts are reviewed whenever the Company reviews its Strategic Plan assumptions. The approach for determining exports as highly probable future exports is reviewed annually, at least.

See note 36.2 for more detailed information about cash flow hedge accounting and a sensitivity analysis of the cash flow hedge involving future exports.

4.9. Write-off – overpayments incorrectly capitalized

As described in note 21, in the third quarter of 2014, the Company developed an estimation methodology and wrote off US\$2,527 of capitalized costs representing the estimated amounts that Petrobras had overpaid for the acquisition of property, plant and equipment.

The Company has continuously monitored the results of the Lava Jato investigation and the availability of other information related to the scheme of improper payments. In preparing the financial statements for the year ended December 31, 2019, the Company has not identified any additional information that would impact the adopted calculation methodology and consequently require additional write-offs.

4.10. Expected credit losses on financial assets

Expected credit losses on financial assets are based on assumptions relating to risk of default, the determination of whether or not there has been a significant increase in credit risk and expectation of recovery, among others. The Company uses judgment for such assumptions in addition to information from credit rating agencies and inputs based on collection delays.

4.11. Leases

The Company uses incremental borrowing rates to determine the present value of the lease payments, when the interest rate implicit in the lease cannot be readily determined. The incremental borrowing rates used to determine the present value of the remaining lease payments were determined mainly based on the Company's cost of funding based on yields of bonds issued by the Company, adjusted by terms and currency of the lease arrangements, economic environment of the country where the lessee operates and similar collaterals.

4.12. Uncertainty over Income Tax Treatments

Uncertainties over income tax treatments represent the risks that the tax authority does not accept a certain tax treatment applied by the Company. The Company estimates the probability of acceptance of an uncertain tax treatment by the tax authority based on technical assessments by its legal advisors, considering precedent jurisprudence applicable to current tax legislation, which may be impacted mainly by changes in tax rules or court decisions which may affect the analysis of the fundamentals of uncertainty.

5. New standards and interpretations

5.1. New International Financial Reporting Standards not yet adopted

Standard	Descrição	Effective on
<i>Definition of a Business – Amendments to IFRS 3</i>	This amended IFRS 3 to narrow and clarify the definition of a business, and to permit a simplified assessment of whether an acquired set of activities and assets is a group of assets rather than a business.	January 1, 2020, prospective application.
<i>Interest Rate Benchmark Reform – Amendments to IFRS 9, IFRS 7 and IAS 39</i>	Amendments to IFRS 9- <i>Financial Instruments</i> , IFRS 7- <i>Financial Instruments: Disclosures</i> , and IAS 39- <i>Financial instruments: recognition and measurement</i> , in order to include temporary exceptions to current hedge accounting requirements, to offset the effects of uncertainties caused by the interest rate benchmark reform, relating to the transition to the Interbank Offered Rate (IBOR) recommended by the Financial Stability Board (FSB).	January 1, 2020, retrospective application.
<i>Definition of Material – Amendments to IAS 1 and IAS 8</i>	Amendments to IAS 1 - <i>Presentation of Financial Statements</i> and IAS 8 - <i>Accounting Policies, Changes in Accounting Estimates and Errors</i> , updating the definition of “material” in order to establish that information is material if its omission, distortion or obscurity can reasonably influence the decision making of the primary users of the financial statements.	January 1, 2020, prospective application.
<i>IFRS 17 – Insurance Contracts</i>	IFRS 4 – <i>Insurance Contracts</i> will be superseded by IFRS 17, which establishes the requirements to be applied in the recognition and disclosure of insurance and reinsurance contracts.	January 1, 2021, prospective application.

As for the amendments listed above, the Company estimates no impact arising from the initial application on its consolidated financial statements. In relation to IFRS 17 - Insurance Contracts, the Company is evaluating the applicability on the financial statements.

6. Capital Management

The Company's objectives in its capital management is to achieve an adequate level of return on its capital structure in order to safeguard its ability to continue as a going concern, adding value to its shareholders and investors. Its main sources of funding have been cash provided by its operating activities and divestments.

In 2019, the Company reported earnings per share of US\$ 0.78 (US\$ 0.55 in 2018) and is proposing to the Shareholder's General Meeting the distribution of dividends of US\$ 0.2320 (US\$ 0.2397 in 2018) per preferred share and US\$ 0.1864 (US\$ 0.0681 in 2018) per common shares and, as detailed in note 34.

In line with the assumptions in the 2020-2024 Strategic Plan, the Company does not foresee net proceeds from financing over the next five years. However, the Company has continually assessed options of funding following its liability management strategy, aiming at improving its debt repayment profile and achieving a lower cost of its debt along with an indebtedness level matching the capital expenditures. Currently, the average repayment term is 10.80 years (9.14 years as of December 31, 2018).

As a part of the financing planning, the Company expects to raise funds by means of its partnership and divestment program outlined by its portfolio management.

7. Cash and cash equivalents and Marketable securities

7.1. Cash and cash equivalents

	12.31.2019	12.31.2018
Cash at bank and in hand	572	863
Short-term financial investments		
- In Brazil		
Brazilian interbank deposit rate investment funds and other short-term deposits	1,699	1,875
Other investment funds	4	12
	1,703	1,887
- Abroad		
Time deposits	7	3,823
Automatic investing accounts and interest checking accounts	4,620	6,708
Other financial investments	470	618
	5,097	11,149
Total short-term financial investments	6,800	13,036
Total cash and cash equivalents	7,372	13,899

Short-term financial investments in Brazil primarily consist of investments in funds holding Brazilian Federal Government Bonds that can be redeemed immediately, as well as reverse repurchase agreements that mature within three months as of the date of their acquisition. Short-term financial investments abroad comprise highly-liquid automatic investment accounts, interest checking accounts and other short-term fixed income instruments.

The principal uses of funds in the year ended December 31, 2019 were for debt service obligations, including pre-payment of debts and lease payments (US\$ 36,981) and acquisition of PP&E and intangibles assets, including the bidding for oil surplus of the Transfer of Rights Agreement (US\$ 23,897). These funds were principally provided by operating activities (US\$ 25,373), disposal of assets (US\$ 10,413), reimbursement on the Transfer of Rights Agreement (US\$ 8,361) and proceeds from financing (US\$ 7,464).

The Company uses revolving credit facilities, which allowed the reduction in cash and cash equivalents without compromising the Company's liquidity. For additional information, see note 32.4.

7.1.1. Accounting Policy

Cash and cash equivalents comprise cash in hand, term deposits with banks and short-term highly-liquid financial investments that are readily convertible to known amounts of cash, are subject to insignificant risk of changes in value and have a maturity of three months or less from the date of acquisition.

7.2. Marketable securities

	12.31.2019			12.31.2018		
	In Brazil	Abroad	Total	In Brazil	Abroad	Total
Fair value through profit or loss	875	–	875	1,083	–	1,083
Fair value through other comprehensive income	7	–	7	8	–	8
Amortized cost	45	19	64	45	–	45
Total	927	19	946	1,136	–	1,136
Current	875	13	888	1,083	–	1,083
Non-current	52	6	58	53	–	53

Marketable securities classified as fair value through profit or loss refer mainly to investments in Brazilian Federal Government Bonds. These financial investments have maturities of more than three months and are generally classified as current assets due to their maturity or the expectation of their realization in the short term.

7.2.1. Accounting Policy

Marketable securities are initially measured at fair value and their subsequent measurement depends on their classification:

- Amortized cost: when the contractual terms of the security give rise on specified dates to cash flows arising from payments of principal and interest on the principal amount outstanding, and the business model's objective is to hold the security in order to collect contractual cash flows. The interest income is based on the effective interest method.
- Fair value through other comprehensive income: equity instruments not held for trading purposes for which the Company has made an irrevocable election in their initial recognition to present changes in fair value in other comprehensive income rather than within profit or loss;
- Fair value through profit or loss: if the marketable security do not meet the criteria for the two aforementioned categories.

8. Sales revenues

8.1. Revenues from contracts with customers

As an integrated energy company, revenues from contracts with customers derive from different products sold by the Company's operating segments, taking into consideration specific characteristics of the markets where they operate. For additional information about the operating segments of the Company, its activities and its respective products sold, see note 12.

The determination of transaction prices derives from methodologies and policies based on the parameters of these markets, reflecting operating risks, level of market share, changes in exchange rates and international commodity prices, including Brent oil prices, oil products such as diesel and gasoline, and the Henry Hub Index.

Revenues from sales are recognized at the moment the control is transferred to the client, that occurs upon delivery at the contractual agreed place or when the service is provided. Generally, prices for products and services are fixed prior to or shortly after delivery. Therefore, no significant changes in transactions prices are expected to be recognized in periods after the satisfaction of the performance obligations, except for some exports in which final prices are linked to changes in commodity price after their transfer of control. Sales proceeds are generally collected in the short-term, thus there are no significant financing components.

In addition, the Company acts as an agent in the biofuel business, where there is no control of the biodiesel purchased from the producers and sold to distributors at any time during the sale operation. Those revenues totaled US\$ 46 in 2019.

8.2. Net sales revenues

	2019	2018 Reclassified	2017 Reclassified
Diesel	23,007	23,450	19,642
Diesel subsidy	–	1,415	–
Gasoline	9,810	11,690	12,231
Liquefied petroleum gas	4,159	4,490	3,999
Jet fuel	3,832	4,208	3,264
Naphtha	1,669	2,455	2,637
Fuel oil (including bunker fuel)	1,026	1,233	1,419
Other oil products	3,410	3,769	3,258
Subtotal oil products	46,913	52,710	46,450
Natural gas	5,929	5,425	5,001
Renewables and nitrogen products	245	366	3,498
Breakage	645	687	–
Electricity	1,322	2,027	3,616
Services, agency and others	940	1,370	1,223
Domestic market	55,994	62,585	59,788
Exports	18,085	15,413	12,677
Sales abroad (*)	2,510	6,640	5,419
Foreign market	20,595	22,053	18,096
Sales revenues	76,589	84,638	77,884

(*) Sales revenues from operations outside of Brazil, including trading and excluding exports.

Following the reduction of the investment in BR Distribuidora on July 25, 2019, this company became a non-consolidated entity. Hence, sales to this associate represent more than 10% of the Company sales revenues, mainly associated with the refining, transportation and marketing segment.

8.3. Remaining performance obligations

The company has current sales contracts with original expected duration of more than 1 year, in which volumes of goods or services for future sales are determined with their respective payment terms.

The estimated remaining values of these contracts at the end of 2019 presented below are based on volumes of goods and services for future sales, as well as prices prevailing at December 31, 2019 or practiced in recent sales when they reflect the more directly observable information:

	Total	Expected recognition within 1 year
Domestic market		
Gasoline	3,853	3,853
Diesel	6,538	6,538
Natural gas	15,929	4,714
Services and others	5,722	1,542
Naphtha	3,722	3,722
Electricity	4,286	718
Other oil products	45	45
Jet fuel	943	943
Foreign market		
Exports	18,465	2,655
Sales abroad	–	–
Total	59,503	24,730

The revenues will be recognized once goods are transferred and services are provided to the customers and their measurement and timing of recognition will be subject to future demands, changes in commodities prices, exchange rates and other market factors.

The table above does not include information on contracts with original expected duration of one year or less, such as spot-market contracts, variable considerations which are constrained, and information on contracts only establishing general terms and conditions (Master Agreements), for which volumes and prices will only be defined in subsequent contracts.

In addition, electricity sales are mainly driven by demands to generate electricity from thermoelectric power plants, according to the Brazilian National Electric System Operator (ONS) requests. These requests are substantially affected by Brazilian hydrological conditions, thus, the table above presents fixed amounts representing sales of certified capacity in accordance with the installed capacity of the Company.

8.4. Contract liabilities

The balance of contract liabilities carried on the statement of financial position at December 31, 2019 amounted to US\$ 128 (US\$ 245 at December 31, 2018). This amount is classified as other current liabilities and primarily comprises advances from customers in take and ship or pay contracts, that, will be recognized as revenue based on future sales of natural gas or following the non-exercise of the right by the customer.

8.5. Accounting policy for revenues

The Company evaluates contracts with customers that will be subject to revenue recognition and identifies the distinct goods and services promised in each of them.

Performance obligations are promises to transfer to the customer goods or services (or a bundle of goods or services) that are distinct, or series of distinct goods or services that are substantially the same and that have the same pattern of transfer to the customer.

Revenues are measured based on the amount of consideration to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer, excluding amounts collected on behalf of third parties. Transaction prices are based on contractually stated prices, reflecting the Company's pricing methodologies and policies based on market parameters.

When transferring a good, that is, when the customer obtains its control, the company satisfies the performance obligation and recognizes the respective revenue, which usually occurs at a point in time upon delivery.

9. Costs and expenses by nature

9.1. Cost of sales

	2019	2018 Reclassified	2017 Reclassified
	Jan-Dec	Jan-Dec	Jan-Dec
Raw material, products for resale, materials and third-party services (*)	(20,694)	(26,810)	(27,388)
Depreciation, depletion and amortization	(12,036)	(10,954)	(12,309)
Production taxes	(9,741)	(10,905)	(7,895)
Employee compensation	(3,261)	(3,515)	(3,606)
Total	(45,732)	(52,184)	(51,198)

(*) It Includes short-term leases and inventory turnover.

9.2. Selling expenses

	2019	2018 Reclassified	2017 Reclassified
	Jan-Dec	Jan-Dec	Jan-Dec
Materials, third-party services, rent and other related costs	(3,664)	(3,445)	(3,033)
Depreciation, depletion and amortization	(549)	(145)	(75)
Allowance for expected credit losses	(49)	(32)	(288)
Employee compensation	(214)	(205)	(218)
Total	(4,476)	(3,827)	(3,614)

9.3. General and administrative expenses

	2019	2018 Reclassified	2017 Reclassified
	Jan-Dec	Jan-Dec	Jan-Dec
Employee compensation	(1,427)	(1,500)	(1,605)
Materials, third-party services, freight, rent and other related costs	(539)	(626)	(911)
Depreciation, depletion and amortization	(158)	(113)	(140)
Total	(2,124)	(2,239)	(2,656)

10. Other income and expenses

	2019	2018 Reclassified	2017 Reclassified
Gains / (losses) related to legal, administrative and arbitration proceedings	(1,520)	(2,283)	(861)
Pension and medical benefits - retirees	(1,371)	(1,401)	(1,791)
Unscheduled stoppages and pre-operating expenses	(1,321)	(1,282)	(1,598)
Variable compensation program	(643)	(265)	-
Gains/(losses) with Commodities Derivatives	(370)	(416)	-
Voluntary Separation Plan - PDV	(198)	2	-
Profit sharing	(43)	(442)	(145)
Employee Career and Compensation Plan - PCR	(2)	(293)	-
Agreement with US Authorities	-	(895)	-
Institutional relations and cultural projects	(180)	(178)	(208)
Operating expenses with thermoelectric power plants	(128)	(107)	(67)
Government grants	238	248	91
Results on disposal/write-offs of assets and on remeasurement of investment retained with loss of control	6,046	416	1,725
Expenses/Reimbursements from E&P partnership operations	383	331	372
Amounts recovered from Lava Jato investigation	220	457	252
Equalization of expenses - Production Individualization Agreements	2	(279)	-
Gains / (losses) on decommissioning of returned/abandoned areas	(155)	621	337
Provision for the class action agreement	-	-	(3,449)
Others	241	6	(169)
Total	1,199	(5,760)	(5,511)

11. Net finance income (expense)

	2019	2018 Reclassified	2017 Reclassified
	Jan-Dec	Jan-Dec	Jan-Dec
Finance income	1,330	2,381	928
Income from investments and marketable securities (Government Bonds)	558	563	472
Discount and premium on repurchase of debt securities	5	323	-
Gains from signed agreements (electric sector)	79	724	-
Other income, net	688	771	456
Finance expenses	(7,086)	(5,675)	(7,006)
Interest on finance debt	(4,847)	(5,920)	(6,685)
Unwinding of discount on lease liabilities	(1,514)	(10)	(19)
Discount and premium on repurchase of debt securities	(860)	(651)	(338)
Capitalized borrowing costs	1,332	1,814	1,976
Unwinding of discount on the provision for decommissioning costs	(795)	(652)	(762)
Other finance expenses and income, net	(402)	(256)	(1,178)
Foreign exchange gains (losses) and indexation charges	(3,008)	(3,190)	(3,641)
Foreign Exchange gains (losses)	(72)	(66)	(857)
Reclassification of hedge accounting to the Statement of Income	(3,136)	(3,315)	(3,154)
Other foreign exchange gains (losses) and indexation charges, net	200	191	370
Total	(8,764)	(6,484)	(9,719)

12. Net income by operating segment

Consolidated Statement of Income by operating segment

	2019					
	Exploration and Production	Refining, Transportation & Marketing	Gas & Power	Corporate and other business	Eliminations	Total
Sales revenues	50,462	67,538	11,493	1,221	(54,125)	76,589
Intersegments	49,400	9,432	3,308	226	(54,125)	8,241
Third parties	1,062	58,106	8,185	995	-	68,348
Cost of sales	(27,304)	(61,578)	(7,713)	(1,167)	52,030	(45,732)
Gross profit (loss)	23,158	5,960	3,780	54	(2,095)	30,857
Income (expenses)	(4,181)	(4,334)	2,580	(4,282)	(26)	(10,243)
Selling	-	(2,164)	(2,260)	(31)	(21)	(4,476)
General and administrative	(254)	(336)	(134)	(1,401)	1	(2,124)
Exploration costs	(799)	-	-	-	-	(799)
Research and development	(394)	(11)	(15)	(156)	-	(576)
Other taxes	(127)	(151)	(152)	(189)	-	(619)
Impairment of assets	(1,956)	(697)	(194)	1	(2)	(2,848)
Other income and expenses	(651)	(975)	5,335	(2,506)	(4)	1,199
Net income / (loss) before financial results and income taxes	18,977	1,626	6,360	(4,228)	(2,121)	20,614
Net finance income (expenses) (*)	-	-	-	(8,764)	-	(8,764)
Results in equity-accounted investments	86	(151)	103	115	-	153
Net income / (loss) before income taxes	19,063	1,475	6,463	(12,877)	(2,121)	12,003
Income taxes	(6,451)	(552)	(2,162)	4,245	720	(4,200)
Net income from continuing operations for the period	12,612	923	4,301	(8,632)	(1,401)	7,803
Net income from discontinued operations for the period	-	-	3	2,557	-	2,560
Net income for the period	12,612	923	4,304	(6,075)	(1,401)	10,363
Attributable to:						
Non-controlling interests	(12)	(98)	124	198	-	212
Net income from continuing operations	(12)	(98)	121	132	-	143
Net income from discontinued operations	-	-	3	66	-	69
Shareholders of Petrobras	12,624	1,021	4,180	(6,273)	(1,401)	10,151
Net income from continuing operations	12,624	1,021	4,179	(8,763)	(1,401)	7,660
Net income from discontinued operations	-	-	1	2,490	-	2,491

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Notes to the financial statements
(Expressed in millions of US Dollars, unless otherwise indicated)

2018 - Reclassified

	Exploration and Production	Refining, Transportation & Marketing	Gas & Power	Corporate and other business	Eliminations	Total
Sales revenues	52,382	73,448	12,241	1,731	(55,164)	84,638
Intersegments	50,052	16,655	3,701	205	(55,164)	15,449
Third parties	2,330	56,793	8,540	1,526	-	69,189
Cost of sales	(28,968)	(67,011)	(9,023)	(1,611)	54,429	(52,184)
Gross profit (loss)	23,414	6,437	3,218	120	(735)	32,454
Income (expenses)	(5,068)	(3,437)	(2,461)	(4,662)	(38)	(15,666)
Selling	(80)	(1,777)	(1,867)	(76)	(27)	(3,827)
General and administrative	(257)	(376)	(152)	(1,453)	(1)	(2,239)
Exploration costs	(524)	-	-	-	-	(524)
Research and development	(443)	(11)	(21)	(166)	-	(641)
Other taxes	(115)	(207)	(65)	(283)	-	(670)
Impairment of assets	(1,391)	(442)	(190)	18	-	(2,005)
Other income and expenses	(2,258)	(624)	(166)	(2,702)	(10)	(5,760)
Net income / (loss) before financial results and income taxes	18,346	3,000	757	(4,542)	(773)	16,788
Net finance income (expenses) (*)	-	-	-	(6,484)	-	(6,484)
Results in equity-accounted investments	75	362	95	(9)	-	523
Net income / (loss) before income taxes	18,421	3,362	852	(11,035)	(773)	10,827
Income taxes	(6,236)	(1,020)	(257)	2,994	263	(4,256)
Net income from continuing operations for the period	12,185	2,342	595	(8,041)	(510)	6,571
Net income from discontinued operations for the period	-	-	15	828	-	843
Net income for the period	12,185	2,342	610	(7,213)	(510)	7,414
Non-controlling interests	(5)	(51)	128	169	-	241
Net income from continuing operations	(5)	(51)	124	(69)	-	(1)
Net income from discontinued operations	-	-	4	238	-	242
Net income attributable to shareholders of Petrobras	12,190	2,393	482	(7,382)	(510)	7,173
Net income from continuing operations	12,190	2,393	471	(7,972)	(510)	6,572
Net income from discontinued operations	-	-	11	590	-	601

2017 - Reclassified

	Exploration and Production	Refining, Transportation & Marketing	Gas & Power	Corporate and other business	Eliminations	Total
Sales revenues	42,184	67,037	12,340	1,583	(45,260)	77,884
Intersegments	40,762	16,142	3,261	201	(45,260)	15,106
Third parties	1,422	50,895	9,079	1,382	-	62,778
Cost of sales	(27,937)	(57,778)	(8,807)	(1,476)	44,800	(51,198)
Gross profit (loss)	14,247	9,259	3,533	107	(460)	26,686
Income (expenses)	(3,750)	(3,603)	(659)	(8,194)	73	(16,133)
Selling	(125)	(1,731)	(1,776)	(63)	81	(3,614)
General and administrative	(331)	(457)	(165)	(1,703)	-	(2,656)
Exploration costs	(800)	-	-	-	-	(800)
Research and development	(333)	(13)	(26)	(200)	-	(572)
Other taxes	(503)	(203)	(258)	(825)	-	(1,789)
Impairment of assets	43	(781)	(446)	(7)	-	(1,191)
Other income and expenses	(1,701)	(418)	2,012	(5,396)	(8)	(5,511)
Net income / (loss) before financial results and income taxes	10,497	5,656	2,874	(8,087)	(387)	10,553
Net finance income (expenses) (*)	-	-	-	(9,719)	-	(9,719)
Results in equity-accounted investments	136	443	117	(23)	-	673
Net income / (loss) before income taxes	10,633	6,099	2,991	(17,829)	(387)	1,507
Income taxes	(3,571)	(1,922)	(977)	4,641	132	(1,697)
Net income from continuing operations for the period	7,062	4,177	2,014	(13,188)	(255)	(190)
Net income from discontinued operations for the period	-	-	17	342	-	359
Net income for the period	7,062	4,177	2,031	(12,846)	(255)	169
Non-controlling interests	41	(58)	119	158	-	260
Net income from continuing operations	41	(58)	123	51	-	157
Net income from discontinued operations	-	-	(4)	107	-	103
Net income attributable to shareholders of Petrobras	7,021	4,235	1,912	(13,004)	(255)	(91)
Net income from continuing operations	7,021	4,235	1,891	(13,239)	(255)	(347)
Net income from discontinued operations	-	-	21	235	-	256

The consolidated amounts of intersegment sales (remaining after eliminations) relates to sales from the RT&M to BR, which is presented as discontinued operation within Corporate and other business.

12.1. Accounting policy for operating segments

The information related to the Company's operating segments is prepared based on available financial information directly attributable to each segment, or items that can be allocated to each segment on a reasonable basis. This information is presented by business activity, as used by the Company's Board of Executive Officers (Chief Operating Decision Maker – CODM) on the decision-making process of resource allocation and performance evaluation.

The measurement of segment results includes transactions carried out with third parties, including associates and joint ventures, as well as transactions between operating segments. Transfers between operating segments are recognized at internal transfer prices derived from methodologies that take into account market parameters and are eliminated only to provide reconciliations to the consolidated financial statements.

As a result of the divestments in 2019, the strategy of repositioning its portfolio as set out in the 2020-2024 Strategic Plan, approved on November 27, 2019, as well as the materiality of the remaining businesses, the Company reassessed the presentation of the Distribution and Biofuels businesses, which are now included in the segment Corporate and other businesses. Thus, comparative information has been reclassified. Accordingly, the company's business segments disclosed separately are:

Exploration and Production (E&P): this segment covers the activities of exploration, development and production of crude oil, NGL (natural gas liquid) and natural gas in Brazil and abroad, for the primary purpose of supplying its domestic refineries. The E&P segment also operates through partnerships with other companies and includes holding interest in foreign entities operating in this segment.

As an integrated energy company with a focus on oil and gas, intersegment sales revenue refers mainly to oil transfers to the Refining, Transportation and Marketing segment, aiming to supply the Company's refineries and meet the domestic demand for oil products. These transactions are measured by internal transfer prices based on international oil prices and their respective exchange rate impacts, taking into account the specific characteristics of the transferred oil stream.

In addition, the E&P segment revenues include transfers of natural gas to the natural gas processing plants within Gas and Power segment. These transactions are measured at internal transfer prices based on the international prices of this commodity.

Revenue from sales to third parties mainly reflects services rendered relating to E&P activities, sales of the E&P's natural gas processing plants, as well as the oil and natural gas operations carried out by subsidiaries abroad.

Refining, Transportation and Marketing (RT&M): this segment covers the refining, logistics, transport and trading of crude oil and oil products activities in Brazil and abroad, as well as exports of ethanol. This segment also includes the petrochemical operations, such as extraction and processing of shale and holding interests in petrochemical companies in Brazil.

This segment carries out the acquisition of crude oil from the E&P segment, imports oil for refinery slate, and acquires oil products in international markets taking advantage of the existing price differentials between the cost of processing domestic oil and that of importing oil products.

Intersegment revenues primarily reflect the sale of derivatives for the distribution segment at market prices and the operations for the Gas and Power and E&P segments at internal transfer price.

Revenues from sales to third parties primarily reflect the trading of oil products in Brazil and the export and trade of oil and oil products by foreign subsidiaries.

Gas and Power: this segment covers the activities of logistic and trading of natural gas and electricity, transportation and trading of LNG (liquefied natural gas), generation and electricity by means of thermoelectric power plants, as well as holding interests in transporters and distributors of natural gas in Brazil and abroad. It also includes natural gas processing and fertilizers production.

Intersegment revenues primarily reflect the transfers of natural gas processed, liquefied petroleum gas (LPG) and NGL to RT&M. These transactions are measured at internal transfer prices.

This segment purchases national natural gas from the E&P segment, from partners and third parties, imports natural gas from Bolivia and LNG to meet national demand.

Revenues from sales to third parties primarily reflect natural gas processed to distributors, as well as generation and trading of electricity.

The Corporate segment comprises items that cannot be attributed to the other segments, as well as distribution and biofuels businesses. Corporate items comprise those related to corporate financial management, corporate overhead and other expenses, including actuarial expenses related to the pension and medical benefits for retired employees and their dependents. Distribution business reflects the interest in the associate BR Distribuidora (investments and results in equity-accounted investments), as well as the distribution of derivatives abroad (South America). Until July 2019 and the previous years for comparative purposes, it also includes net income from discontinued operations, as set out in note 30. Biofuels businesses reflects production activities of biodiesel, its co-products and ethanol.

13. Trade and other receivables

13.1. Trade and other receivables, net

	12.31.2019	12.31.2018
Receivables from contracts with customers		
Third parties	4,481	6,614
Related parties		
Investees (note 37.1)	794	682
Receivables from the electricity sector (note 13.4) (*)	334	4,400
Subtotal	5,609	11,696
Other trade receivables		
Third parties		
Receivables from divestments (**)	1,434	1,296
Lease receivables	482	519
Other receivables	831	1,325
Related parties		
Diesel subsidy (note 37.1)	-	400
Petroleum and alcohol accounts - receivables from Brazilian Government (note 37.1)	304	307
Subtotal	3,051	3,847
Total trade receivables	8,660	15,543
Expected credit losses (ECL) - Third parties	(2,286)	(3,390)
Expected credit losses (ECL) - Related parties	(45)	(915)
Total trade receivables, net	6,329	11,238
Current	3,762	5,746
Non-current	2,567	5,492

(*) It includes the amount of US\$ 176 at December 31, 2019 (US\$ 199 at December 31, 2018) regarding finance lease receivable from Amazonas Distribuidora de Energia.

(**) It comprises receivable from the divestment of NTS and contingent payments from the sale of interest in Roncador field.

Trade and other receivables are generally classified as measured at amortized cost, except for receivables with final prices linked to changes in commodity price after their transfer of control, which are classified as measured at fair value through profit or loss, amounting to US\$ 357 as of December 31, 2019.

13.2. Aging of trade and other receivables – third parties

	12.31.2019		12.31.2018	
	Trade receivables	Expected credit losses	Trade receivables	Expected credit losses
Current	4,658	(142)	5,863	(360)
Overdue:				
1-90 days	251	(38)	484	(54)
91-180 days	24	(8)	35	(12)
181-365 days	49	(13)	48	(20)
More than 365 days	2,245	(2,085)	3,325	(2,944)
Total	7,227	(2,286)	9,755	(3,390)

13.3. Changes in provision for expected credit losses

	Jan-Dec/2019	Jan-Dec/2018
Opening balance	4,305	5,945
Initial application of IFRS 9	-	122
Additions	217	104
Write-offs	(1,241)	(1,253)
Transfer of assets held for sale	(871)	6
Cumulative translation adjustment	(79)	(619)
Closing balance	2,331	4,305
Current	1,103	1,715
Non-current	1,228	2,590

In the year ended December 31, 2019, the write-offs primarily relate to the termination of a lawsuit, as set out in note 13.4.

In 2018, it primarily reflect the effects related to the agreements signed with Eletrobras.

13.4. Trade receivables – electricity sector (isolated electricity system in the northern region of Brazil)

Receivables from electricity sector	Receivables outside the scope of DAAs	DAA 2014	DAA 2018	Lease receivables	Others	Total
Receivables	1,348	2,560	739	199	1	4,847
ECL	(1,182)	(5)	(1)	-	(1)	(1,189)
Balance at December 31, 2018	166	2,555	738	199	-	3,658
Sales	857	-	-	-	-	857
Amounts received	(832)	(2,466)	(667)	(39)	-	(4,004)
Interest	12	114	36	30	-	192
Derecognition of receivables	(879)	-	-	-	-	(879)
Agreements in 2018	-	-	217	-	-	217
Discount on transfer of rights	-	(128)	-	-	-	(128)
(Additions)/reversals of ECL	(19)	2	-	(8)	-	(25)
Derecognition of receivables - ECL	866	-	-	-	-	866
Transfer to assets held for sale (*)	(6)	(23)	(200)	-	-	(229)
CTA	(11)	(54)	(16)	(6)	-	(87)
Balance at December 31, 2019	154	-	108	176	-	438
Receivables	214	-	108	183	-	505
ECL	(60)	-	-	(7)	-	(67)
Balance at December 31, 2019	154	-	108	176	-	438

(*) Amounts relate to BR receivables that were transferred to assets held for sale at June 30, 2019.

	Receivables	ECL	Total
Related parties - Eletrobras Group			
Eletrobras	108	-	108
Amazonas Geração e Transmissão - AmGT	226	(44)	182
Total	334	(44)	290
Third parties			
Cia de Gás do Amazonas - CIGÁS	156	(8)	148
Cia de Eletricidade do Amapá - CEA	15	(15)	-
Others	-	-	-
Total	171	(23)	148
Balance at December 31, 2019	505	(67)	438
Balance at December 31, 2018	4,847	(1,189)	3,658

As a result of the conclusion of the privatization of the energy distributors of the electricity system, in April 2019, all the conditions precedent set forth in the Debt Assumption Agreements (DAAs), signed between the distributors and Petrobras, were met and, thus, Eletrobras became the debtor of all the related amounts.

Following the additional sale of Petrobras's interest in BR Distribuidora, the amount of US\$ 229, relating to the receivables assigned to this company, was transferred to assets held for sale in the second quarter of 2019, and finally were derecognized in the third quarter of 2019, at the closing of this sale.

On July 31, 2019, Petrobras, Eletrobras and Amazonas Energia requested the termination of the lawsuit filed by Petrobras against debtors Eletrobras and Amazonas Energia, in the amount of US\$ 766, as set out in an out-of-court settlement signed by these three companies, and in the Debt Assumption Agreement signed on December 3, 2018 (DAA 2018). Thus, in the third quarter of 2019, the disputed receivables and the corresponding provision for expected credit losses (ECL) were derecognized, with no net effect in the statement of income, since the totality of the credits were covered by the ECL.

The remaining balance of DAA 2018, in which Amazonas Energia (AME) was debtor and later assumed by Eletrobras after the implementation of all conditions contained in the debt acknowledgement, is US\$ 108.

On September 20, 2019, Petrobras and Apolo Fundo de Investimento em Direitos Creditórios entered into an assignment agreement without recourse relating to the all credit rights under the debt acknowledgement by energy distributors in 2014 (DAA 2014), whose financial settlement occurred for the amount of US\$ 2,251, with a US\$ 128 discount, recognized as a finance expense in 2019.

Regarding the gas supply, following the assignment of the gas trading agreement from Amazonas Energia (AME) to Amazonas Geração e Transmissão (AmGT), which occurred in December 2018, no further delays or defaults were identified.

13.5. Accounting policy for trade receivables

Trade receivables are generally classified at amortized cost, except for certain receivables classified at fair value through profit or loss, whose cash flows are distinct from the receipt of principal and interest, including receivables with final prices linked to changes in commodity price after their transfer of control.

When the Company is the lessor in a finance lease, a receivable is recognized at the amount of the net investment in the lease, consisting of the lease payments receivable and any unguaranteed residual value accruing to the Company, discounted at the interest rate implicit in the lease.

The Company measures expected credit losses for short-term trade receivables using a provision matrix based on historical observed default rates adjusted by current and forward-looking information when applicable and available without undue cost or effort.

The Company measures the allowance for expected credit losses of other trade receivables based on their 12-month expected credit losses unless their credit risk has increased significantly since their initial recognition, in which case the allowance is based on their lifetime expected credit losses.

When determining whether there has been a significant increase in credit risk, the Company compares the risk of default on initial recognition and at the reporting date.

Regardless of the assessment of significant increase in credit risk, a delinquency period of 30 days past due triggers the definition of significant increase in credit risk on a financial asset, unless otherwise demonstrated by reasonable and supportable information.

The Company assumes that the credit risk on the trade receivable has not increased significantly since initial recognition if the receivable is considered to have low credit risk at the reporting date. Low credit risk is determined based on external credit ratings or internal methodologies.

The Company assumes that a default occurs whenever the counterparty does not comply with the legal obligation to pay its debts when due or, depending on the instrument, when it is at least 90 days past due.

The measurement of expected credit loss comprises the difference between all contractual cash flows that are due to the Company and all the cash flows that the Company expects to receive, discounted at the original effective interest rate weighted by the probability of default.

14. Inventories

	12.31.2019	12.31.2018
Crude oil	3,905	4,150
Oil products	2,274	2,758
Intermediate products	586	610
Natural gas and Liquefied Natural Gas (LNG)	173	122
Biofuels	28	150
Fertilizers	28	78
Total products	6,994	7,868
Materials, supplies and others	1,195	1,119
Total	8,189	8,987

In the year ended December 31, 2019, the Company recognized a US\$ 15 loss within cost of sales, adjusting inventories to net realizable value (a US\$ 420 loss within cost of sales in the year ended December 31, 2018) primarily due to changes in international prices of crude oil and oil products.

At December 31, 2019, the Company had pledged crude oil and oil products volumes as collateral for the Terms of Financial Commitment (TFC) signed by Petrobras and Petros in 2008, in the amount of US\$ 3,525 (US\$ 4,496 at December 31, 2018), as set out in note 18.

14.1. Accounting policy for inventories

Inventories are determined by the weighted average cost method adjusted to the net realizable value when it is lower than its carrying amount.

Net realizable value is the estimated selling price of inventory in the ordinary course of business, less estimated cost of completion and estimated expenses to complete its sale.

Crude oil and LNG inventories can be traded or used for production of oil products and/or electricity generation, respectively.

Intermediate products are those product streams that have been through at least one of the refining processes, but still need further treatment, processing or converting to be available for sale.

Biofuels mainly include ethanol and biodiesel inventories.

Materials, supplies and others mainly comprise production supplies and operating materials used in the operations of the Company, stated at the average purchase cost, not exceeding replacement cost.

15. Trade payables

	12.31.2019	12.31.2018
Third parties in Brazil	2,560	4,008
Third parties abroad	2,045	1,572
Related parties	996	747
Balance in current liabilities	5,601	6,327

16. Taxes

16.1. Income taxes and other taxes

Income taxes	Current assets		Current liabilities		Non-current liabilities	
	12.31.2019	12.31.2018	12.31.2019	12.31.2018	12.31.2019	12.31.2018
Taxes in Brazil						
Income taxes	2,485	733	71	66	-	-
Income taxes - Tax settlement programs	-	-	57	56	504	552
	2,485	733	128	122	504	552
Taxes abroad	8	6	148	89	-	-
Total	2,493	739	276	211	504	552

Other taxes	Current assets		Non-current assets		Current liabilities		Non-current liabilities (*)	
	12.31.2019	12.31.2018	12.31.2019	12.31.2018	12.31.2019	12.31.2018	12.31.2019	12.31.2018
Taxes in Brazil								
Current / Deferred ICMS (VAT)	555	781	364	700	759	922	-	-
Current / Deferred PIS and COFINS	417	442	2,591	1,831	252	309	44	-
Claim to recover PIS and COFINS	-	-	820	837	-	-	-	-
CIDE	31	22	-	-	45	50	-	-
Production taxes	-	-	-	-	1,929	1,757	266	-
Withholding income taxes	-	-	-	-	232	308	-	-
Tax Settlement Program	-	-	-	-	-	2	-	-
Others	31	36	153	158	189	184	225	107
Total in Brazil	1,034	1,281	3,928	3,526	3,406	3,532	535	107
Taxes abroad	17	15	11	14	18	24	-	-
Total	1,051	1,296	3,939	3,540	3,424	3,556	535	107

Income taxes credits refer mainly to the carryforward of unused tax losses in the computation process of income taxes, in addition to the negative balance of IRPJ and CSLL related to 2018 and 2019.

Deferred PIS and COFINS credits mainly refer to the acquisition of goods and services for assets under construction, since their use are allowed after these assets enter into production.

In 2019, provisions for current and non-current recoverable taxes (ICMS, PIS and COFINS) were recognized, in the amount US\$ 243, mainly due to changes in the scope of projects in progress, reflecting the vision of the Company's Strategic Plan, as well as uncertainties related to the realization of credits in electricity trading operations.

Recovery of PIS and COFINS

The Company filed civil lawsuits against the Brazilian Federal Government claiming to recover PIS and COFINS paid over finance income and foreign exchange variation gains, from February 1999 to January 2004.

The court granted to the Company, in all the lawsuits, the definitive right to recover those taxes, but it requires previous examination and approval by the court of the settlement reports (court-ordered liquidation stage). In 2017, there were a settlement reports issued in favor of the Company relating to the most significant amount to be recovered. However, final approvals by the court are still pending.

As of December 31, 2019, the Company had non-current receivables of US\$ 820 (US\$ 837 as of December 31, 2018) related to PIS and COFINS, which are indexed to inflation.

16.2. Tax amnesty programs – State Tax (Programas de Anistias Estaduais)

In 2019, in accordance with its current corporate governance process and following cost-benefit analysis, the Company elected to settle in cash VAT (ICMS) tax disputes by joining states amnesty settlement programs and taking advance of their reliefs, as shown below:

State	State Law/Decree n°	Benefits received	Disputes (*)	Reduction Benefit	Amount to be paid after benefit (**)
BA	14,085/2019	Reduction of 90% of fines and interest and 50% of Vat tax forgiveness	449	(344)	105
PE	414/2019	Reduction of 90% of interest and 43% of the fines	335	(224)	111
AM	202/2019	Reduction of 95% of fines and interest	196	(135)	61
CE	33,135/2019	Reduction of 90% of fines and interest and 50% of Vat tax forgiveness	127	(98)	29
AL	5,900/96	Reduction of 90% of fines and interest	83	(63)	20
SE	40,486/2019	Reduction of 90% of fines and interest	41	(26)	15
RS	54,853/2019 and 54,887/2019	Reduction of 60% and 90% of fines and interest and 50% of Vat tax forgiveness	76	(58)	18
			1,307	(948)	359

(*) US\$ 1.2 billion refers to previous disputes for which the likelihood of losses were deemed possible, as set out in note 19.

(**) Amounts recognized as other taxes (US\$ 230), other expenses (US\$ 103), and finance expenses (US\$ 33).

16.3. Brazilian federal settlement programs

In 2018 the Company settled most of the debts relating to the tax settlement programs it joined in 2017. These programs were created by the Brazilian Federal Government, which enabled the settlement of significant disputes with Brazilian tax authorities and other Brazilian federal agencies, in which the Company was a defendant, with certain benefits, such as the use of tax loss carry forwards and reduction in interests, penalties and related charges.

As of December 31, 2019, there is an open balance relating to the Special Tax Settlement Program (PERT), which covered the lawsuit related to the Brazilian Federal Revenue Service, with respect to a notice of deficiency issued due to the use of expenses arising from the Terms of Financial Commitment (TFC), signed by Petrobras and Petros Plan in 2008, as deductible in determining taxable profit for the calculation of income taxes (IRPJ and CSLL).

The following table presents changes in the balance of this program:

	12.31.2018	Payments	Use of tax loss carryforwards	Inflation indexation	Others	CTA	12.31.2019
PERT							
Income taxes	607	(55)	-	30	-	(23)	559
Others taxes	-	-	-	-	1	-	1
	608	(55)	-	30	-	(23)	560
Current							56
Non-current							504

The following table presents the settlement years of the outstanding amounts under this program:

	2020	2021	2022	2023	2024	2025 onwards	Total
PERT	56	56	56	56	56	280	560
Total	56	56	56	56	56	280	560

16.4. New Taxation Model for the Oil and Gas Industry

Law No. 13,586, enacted in 2017, outlined a new taxation model for the oil and gas industry and, along with the Decree 9,128/2017, established a new special regime for exploration, development and production of oil, gas and other liquid hydrocarbons named Repetro-Sped.

Following the application of this new regime, the Company expects greater legal stability in the oil and gas industry in Brazil, which may encourage higher investments and reduce the number of litigations involving the industry players.

Regarding the Repetro-Sped, this regime provides for the continuation of total tax relief over goods imported with temporary permanence in Brazil, as previously governed by the former Repetro (Special Customs Regime for the Export and Import of Goods designated to Exploration and Production of Oil and Natural Gas Reserves), and adds this relief to goods permanently held in Brazil, through the final acquisition of these by Petrobras and Brazilian Consortiums. For goods that were already in the country on December 31, 2017, the Company initiated the transfer of ownership of the oil and gas assets of PNBV and its subsidiaries to the parent company and consortiums in Brazil, which will take place before the end of 2020. Therefore, due to the fact that these assets no longer need to return abroad at the end of the contract, their respective operational and financial removal costs were eliminated. The regime will expire in December 2040. As a result of these transfers, there was a corporate restructuring of companies abroad, as mentioned in note 30.2.

On September 4, 2019, IN RFB No. 1,901 was released, regulating Repetro-Industrialization. This taxation model allows the beneficiary company to be able to import or purchase in domestic market, with the relief of federal taxes, raw materials, intermediate products and packaging materials to be fully used in the production.

Following the creation of Repetro-Sped, the Brazilian states, pursuant to a decision of the Brazilian National Council of Finance Policies (CONFAZ), agreed to grant tax incentives relating to VAT (ICMS) over transactions in the scope of this regime to the extent each state enacts its specific regulation providing for the tax relief for the oil and gas industry.

At the date of issuance of these financial statements, the states enacting new regulations governing the VAT tax incentives authorized by CONFAZ were: Amazonas, Bahia, Ceará, Espírito Santo, Rio de Janeiro, Rio Grande do Norte, São Paulo, Sergipe, Minas Gerais and Piauí.

Finally, on December 17, 2019, the ICMS 220 Agreement was released, aiming to amend ICMS Agreement 03/2018, improving the rules applicable and clarifying several points such as the tax competence in interstate operations and the responsibility for the payment of ICMS. These amendments were promoted to incorporate the ICMS into the Repetro-Industrialization model.

16.5. Deferred income taxes - non-current

The changes in the deferred income taxes (corporate income tax (IRPJ, 25%) and social contribution on net income (CSLL, 9%)) are presented as follows:

	Property, Plant and Equipment									
	Exploration and decommissioning costs	Others (*)	Loans, trade and other receivables / payables and financing (**)	Finance leases	Provision for legal proceedings	Tax losses	Inventories	Employee Benefits	Others	Total
Balance at January 1, 2018	(10,692)	(498)	1,661	(130)	2,201	6,031	569	2,688	534	2,364
Recognized in the statement of income for the year	2,048	(1,109)	(1,509)	(134)	208	(244)	(49)	192	(167)	(764)
Recognized in shareholders' equity	-	-	1,916	-	-	-	-	(119)	2	1,799
Cumulative translation adjustment	1,397	205	(260)	28	(345)	(668)	(65)	(417)	(34)	(159)
Use of tax credits	-	-	-	-	-	(1,117)	-	-	(105)	(1,222)
Others	-	(26)	18	89	2	15	-	11	(101)	8
Balance at December 31, 2018	(7,247)	(1,428)	1,826	(147)	2,066	4,017	455	2,355	129	2,026
Initial application of IFRS9	-	-	-	-	-	-	-	-	-	-
Balance at January 1, 2019	(7,247)	(1,428)	1,826	(147)	2,066	4,017	455	2,355	129	2,026
Recognized in the statement of income for the year	1,497	(2,711)	(95)	(4)	(1,142)	(886)	217	146	180	(2,798)
Recognized in the statement of income of discontinued operation (***)	-	-	-	-	-	-	-	-	(612)	(612)
Recognized in shareholders' equity	-	-	(203)	329	-	-	-	1,491	-	1,617
Cumulative translation adjustment	242	92	(114)	(9)	(51)	(54)	(17)	(56)	25	58
Use of tax credits	-	-	-	-	-	(352)	-	-	23	(329)
Transfers to held for sale	-	444	(55)	17	(87)	(175)	(23)	(216)	(181)	(276)
Others	-	14	(16)	2	(4)	(39)	(2)	(10)	(3)	(58)
Balance at December 31, 2019	(5,508)	(3,589)	1,343	188	782	2,511	630	3,710	(439)	(372)
Deferred tax assets										2,680
Deferred tax liabilities										(654)
Balance at December 31, 2018										2,026
Deferred tax assets										1,388
Deferred tax liabilities										(1,760)
Balance at December 31, 2019										(372)

(*) It mainly includes impairment adjustments, capitalized borrowing costs, and expansion of the base of assets to calculate accelerated depreciation.

(**) The amounts presented as Loans, trade and other receivables/payables and financing relate to the tax effect on exchange rate variation recognized within other comprehensive income (cash flow hedge accounting) as set out in note 36.2.

(***) For more information on the discontinued operation, see note 30.

The Company recognizes the deferred tax assets based on assessment of uncertainty over income tax treatments in the context of applicable tax laws, as well as projections of future taxable profits in a ten-year perspective supported by the Business and Management Plan, which is revised annually.

Timing of reversal of deferred income taxes

Deferred tax assets were recognized based on projections of taxable profit in future periods supported by the Company's 2020-2024 Strategic Plan. The main goals and objectives outlined in this plan include business restructuring, a divestment plan, demobilization of assets and reducing operating expenses.

Management considers that the deferred tax assets will be realized to the extent the deferred tax liabilities are reversed and expected taxable events occur based on its 2020-2024 Strategic Plan.

The estimated schedule of recovery/reversal of net deferred tax assets (liabilities) recoverable (payable) as of December 31, 2018 is set out in the following table:

	Assets	Liabilities
2020	928	21
2021	24	39
2022	46	19
2023	20	288
2024	32	705
2025 and thereafter	338	688
Recognized deferred tax assets	1,388	1,760
Brazil	245	-
Abroad	1,414	-
Unrecognized deferred tax assets	1,659	-
Total	3,047	1,760

At December 31, 2018, the Company had tax loss carryforwards arising from offshore subsidiaries, for which no deferred tax assets had been recognized. These tax losses totaling US\$ 1,414 (US\$ 1,472 as of December 31, 2018) arose mainly from oil and gas exploration and production and refining activities in the United States of US\$ 1,346 (US\$ 1,398 as of December 31, 2017), as well as activities in Spain in the amount of US\$ 68 (US\$ 69 as of December 31, 2017).

An aging of the unrecognized tax carryforwards, from companies abroad is set out below:

	Unrecognized deferred tax assets
2021	45
2022	1
2023	13
2024	9
2025	3
2026 - 2028	234
2029 - 2031	292
2032 - 2034	563
2035 - 2037	254
Total	1,414

16.6. Reconciliation between statutory tax rate and effective tax expense rate

The following table provides the reconciliation of Brazilian statutory tax rate to the Company's effective rate on income before income taxes:

	2019	2018 Reclassified	2017 - Reclassified
Net income before income taxes	12,003	10,827	1,507
Nominal income taxes computed based on Brazilian statutory corporate tax rates (34%)	(4,081)	(3,681)	(513)
· Tax benefits from the deduction of interest on capital distribution	728	553	(53)

· Different jurisdictional tax rates for companies abroad	1,056	355	669
· Brazilian income taxes on income of companies incorporated outside Brazil (*)	(175)	(41)	(70)
· Tax incentives (**)	443	74	168
· Tax loss carryforwards (unrecognized tax losses) (***)	(682)	(484)	(146)
· Non-taxable income (non-deductible expenses), net (****)	(1,556)	(780)	(454)
· Tax settlement programs (*****)	-	-	(1,373)
· Agreement with US authorities	-	(293)	-
· Others	69	41	75
Income taxes expense	(4,200)	(4,256)	(1,697)
Deferred income taxes	(2,798)	(370)	(400)
Current income taxes	(1,402)	(3,886)	(1,297)
Total	(4,200)	(4,256)	(1,697)
Effective tax rate of income taxes	35.0%	39.3%	112.6%

(*) It relates to Brazilian income taxes on earnings of offshore investees, as established by Law No. 12,973/2014.

(**) It includes tax incentives granted by dutch authorities.

(***) As of December 31, 2019, it includes US\$ 674 regarding uncertainty over income tax treatments adopted by subsidiaries abroad.

(****) It includes results in equity-accounted investments, expenses relating to health care plan and provisions for legal proceedings.

(*****) Income taxes in the scope of PRT and PERT and reversals of losses carry forwards from 2012 to 2017.

16.7. Accounting policy for income taxes

Income tax expense for the period includes current and deferred taxes, recognized in the statement of income of the period, except when the tax arises from a transaction or event which is recognized directly in equity. Income tax expense comprises current and deferred taxes based on the rates of 25% for income tax (IRPJ) and 9% for social contribution on net income (CSLL), and the offsetting of the carryforward of credit losses and negative basis of CSLL, limited to 30% of taxable income for the year. Since 2015, income tax expenses on profits arising from subsidiaries abroad are recognized as established by Law No. 12,973 / 2014.

16.7.1. Current income taxes

Current income taxes are computed based on taxable profit for the year, determined in accordance with the rules established by the taxation authorities, using tax rates that have been enacted or substantively enacted at the end of the reporting period.

Current income taxes are offset when they relate to income taxes levied on the same taxable entity and by the same tax authority, when there is a legal right and the entity has the intention to set off current tax assets and current tax liabilities, simultaneously.

16.7.2. Deferred income taxes

Deferred income taxes are recognized on temporary differences between the tax base of an asset or liability and its carrying amount. They are measured at the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax assets are generally recognized for all deductible temporary differences and carryforward of unused tax losses or credits to the extent that it is probable that taxable profit will be available against which those deductible temporary differences can be utilized. When there are insufficient taxable temporary differences relating to the same taxation authority and the same taxable entity, a deferred tax is recognized to the extent that it is probable that the entity will have sufficient taxable profit in future periods, based on projections approved by management and supported by the Company's Strategic Plan.

Deferred tax assets and deferred tax liabilities are offset when they relate to income taxes levied on the same taxable entity, when a legally enforceable right to set off current tax assets and current tax liabilities exists and when the deferred tax assets and deferred tax liabilities relate to taxes levied by the same tax authority on the same taxable entity.

17. Short-term and other benefits

	12.31.2019	31.12.2018
Accrued vacation pay	660	781
Profit sharing	16	355
Employees variable compensation program	655	269
Voluntary Severance Program (PDV)	140	36
Salaries and related charges	212	217
Total	1,683	1,658
Current	1,645	1,658
Non-current	38	–

Performance Award Program

In the first quarter of 2019, the Board of Directors approved a new variable remuneration model for all the Company's employees for 2019: the Performance Award Program (*Programa de Prêmio por Performance - PPP*). This program is in line with the Strategic Plan, focusing on meritocracy and bringing flexibility to a scenario in which the Company seeks more efficiency and alignment with the best management practices.

The PPP will be paid in a lump sum payment if the Company presents a net income higher than R\$ 10 billion in 2019 and the estimated amount of disbursement will depend on certain factors such as individual employee performance and results of the areas, as well as performance metrics of the Company.

This new model replaces other benefits related to variable compensation, such as profit sharing and the Variable Compensation Program – PRVE.

In 2019, the Company recognized a US\$ 655 expense relating to the PPP for the employees within other income and expenses.

Voluntary Severance Programs

On April 24, 2019, the Board of Directors approved the Company's Voluntary Severance Program (PDV). Petrobras employees may join the program from May 2, 2019 to June 30, 2020, provided they are retired under the Brazilian Social Security Institute (INSS) by the end of the enrollment period. The program aims to adapt size of the Company's workforce and optimize costs.

The recognition of the provision for expenses with this plan occurs to the extent that the employees join the program. Accordingly, the Company has already registered 3,045 enrollments and 966 separations.

In addition, the Company launched two new voluntary severance programs with the same legal advantages and indemnity as PDV, but intended for non-retired employees with specific regulations. These programs are destined to the corporate segment employees (Corporate PDV) and to employees of divestment units (Specific PDVs). The Corporate PDV has already registered 243 enrollments and 28 separations.

As of December 31, 2019, changes in the provision for expenses relating to separation plans implemented by the Company are set out as follows:

	12.31.2019	12.31.2018
Opening Balance	35	34
Discontinued operations (*)	(21)	–
Enrollments	200	29
Revision of provisions	(2)	(7)
Separations in the period	(71)	(16)
Cumulative translation adjustment	(1)	(5)
Closing Balance	140	35
Current	98	35
Non-current	42	–

18. Employee benefits (Post-Employment)

	2019	2018
Liabilities		
Petros Pension Plan - Renegotiated	10,231	7,152
Petros Pension Plan - Non-renegotiated	3,264	2,880
Petros 2 Pension Plan	989	411
AMS Medical Plan	11,986	12,236
Other plans	24	71
Total	26,494	22,750
Current	887	810
Non-current	25,607	21,940
Total	26,494	22,750

Following the divestment in BR Distribuidora on July 25, 2019, its actuarial liabilities are no longer considered in the balance of Petrobras' post-employment benefit obligations on December 31, 2019. In determining an eventual deficit in the defined benefit plan, it must be equalized by participants and sponsors, observing the proportion of their contributions to the plan, according to complementary Law No. 109/2001.

18.1. Pension Plans

The Company's post-retirement plans are managed by Fundação Petrobras de Seguridade Social (Petros Foundation), which was established by Petrobras as a nonprofit legal entity governed by private law with administrative and financial autonomy.

a) Renegotiated and Non-renegotiated Petros Plans (former Petros Plan)

These plans were established by Petrobras in July 1970 (originally solely Petros Plan) as a defined-benefit pension plan and currently provides post-retirement benefits for employees of Petrobras and Petrobras Distribuidora S.A., in order to complement government social security benefits. The Petros Plan has been closed to new participants since September 2002.

Petros Foundation performs an annual actuarial review of its costs using the capitalization method for most benefits. The employers (sponsors) make regular contributions in amounts equal to the contributions of the participants (active employees, assisted employees and retired employees), on a parity basis.

In August 2019, the Board of Directors approved the prepayment of part of the Term of Financial Commitment (TFC) to Petros in the amount of US\$ 690, of which US\$ 524 relating to Petros Renegotiated (PPSP-R) and US\$ 166 to Petros Non Renegotiated (PPSP-NR). Such payment, which was scheduled to occur in 2028, was anticipated aiming at improving the liquidity of the plans.

As of December 31, 2019, the balances of the Terms of Financial Commitment (TFC), signed by Petrobras and Petros Foundation in 2008, relating to PPSP-R and PPSP-NR are US\$ 2,264 and US\$ 1,216. The TFC is a financial commitment agreement to cover obligations under the pension plans (PPR and PPNR), which amounts are due in 20 years, with 6% p.a. semiannual coupon payments based on the updated balance. The Company has provided crude oil and oil products pledged as security for the TFC totaling US\$ 3,525.

The employers' expected contributions to PPSP-R and PPSP-NR plans for 2020 are US\$ 247 and US\$ 116. Interest payments on TFC are expected to reach US\$ 101 and US\$ 47, respectively.

The average durations of the actuarial liability related to PPSP-R and PPSP-NR plans, as of December 31, 2019, are 13.78 and 11.05 years, respectively (13.08 and 11.69 as of December 31, 2018).

Split of Petros Plan

On December 27, 2019, the Previc authorized the split of PPSP-R and PPSP-NR plans, aiming to gather participants of "Pre-70 group" in "PPSP-R Pre-70" and "PPSP-NR Pre-70".

The Pre-70 Group is made up of Petrobras employees and former employees hired prior to July 1, 1970, who enrolled in the PPSP until January 1, 1996 and remained continuously linked to the original sponsor obtaining the condition of assisted.

In the first quarter of 2020, changes on actuarial obligations of the pre-70 group recognized in the statement of financial position will be presented separately in two independent plans, PPSP-R Pre-70 and PPSP-NR Pre-70.

As of December 31, 2019, the balance of the actuarial liability related to the Pre-70 group (PPSP-R Pre-70 and PPSP-NR Pre-70) represents 7% and 22% of the balance of the actuarial liability of PPSP-R and PPSP-NR plans, respectively.

Deficit settlement plan – Petros Plan

The Petros Plan has a deficit settlement plan (PED) in place due to its accumulated deficit until 2015. This deficit, updated by interest and inflation until December 2017, reached US\$ 6,773 (R\$ 27,300 million as of December 31, 2019). The PED was approved by the Executive Council of Petros Foundation on September 12, 2017 and assessed by the Company and the SEST.

Additional contributions from participants and sponsors, relating to this deficit, commenced in March 2018. Certain participants appealed before the judiciary and have had their contributions suspended based on judicial injunctions, which totaled US\$ 430 at December 31, 2019. However, all judicial sentences were favorable to the maintenance of the settlement plan approved by Petros' Deliberative Council. In 2019, the Company made contributions amounting to US\$ 256 with respect of contributions under the PED (US\$ 154 in 2018).

Pursuant to relevant regulation, the sponsors (Petrobras, BR Distribuidora and Petros Foundation) and participants will cover this deficit based on their respective proportions of regular contributions (parity basis).

The deficit of Petros Plan was transferred to PPR and PPNR on April 1, 2018.

On March 29, 2019, the Petros Foundation's Deliberative Council approved the financial statements for 2018 with accumulated deficits of US\$ 1,389 and US\$ 695 for the PPSP-R and PPSP-NR, respectively, in accordance with accounting practices adopted in Brazil applicable to entities regulated by the National Council for Supplementary Pension Plans (CNPB).

New deficit settlement plan

Due to the deficits accumulated in 2018 having exceeded the legal limit, Petros Foundation had to implement a new deficit settlement plan until March 2020, according to the deadline established by Previc on December 27, 2019.

The Petros Foundation has been working on the implementation of this plan, an alternative settlement plan with the objective of rebalancing the PPSP-R and PPSP-NR plans, which includes the 2015 and 2018 deficits, in addition to reducing the impact of extraordinary monthly contributions of participants.

The solution includes changes to some rights and to the regulations of both plans, intended for employees and assisted participants not included in the Pre-70 Group. The amounts to be settled and the payment conditions are under evaluation and will follow the internal approval procedures and then, Petrobras should submit it to the analysis of the SEST.

The recalculation of the actuarial liabilities is being carried out by the independent actuaries, through an intermediate review, which effect will be recognized in the financial statements when the new deficit settlement plan is approved. The approval may occur in the first quarter of 2020 and the new contribution may start in April.

b) Petros 2 Plan

Petros 2 Plan was established in July 2007 by Petrobras, certain subsidiaries as a variable contribution plan recognizing past service costs for contributions for the period from August 2002 to August 29, 2007. The Petros 2 Plan currently provides post-retirement benefits for employees of Petrobras, Petrobras Distribuidora S.A. (currently an associate), Strutura Asfaltos, Termobahia, Termomacaé, Transportadora Brasileira Gasoduto Brasil-Bolívia S.A. – TBG, Petrobras Transporte S.A. – Transpetro, Petrobras Biocombustível and Araucária Nitrogenados. The plan is open to new participants although there will no longer be payments relating to past service costs.

Certain elements of the Petros 2 Plan have defined benefit characteristics, primarily the coverage of disability and death risks and the guarantee of minimum defined benefit and lifetime income. These actuarial commitments are treated as defined benefit components of the plan and are accounted for by applying the projected unit credit method. Contributions paid for actuarial commitments that have defined contribution characteristics are accrued monthly in the statement of income and are intended to constitute a reserve for programmed retirement. The contributions for the portion of the plan with defined contribution characteristics were US\$ 242 in 2019.

The defined benefit portion of the contributions was suspended from July 1, 2012 to June 30, 2020, as determined by the Executive Council of Petros Foundation, based on advice of the actuarial consultants from Petros Foundation. Therefore, the entire contributions are being applied to the individual accounts of plan participants.

For 2020, the sponsors' expected contributions to the defined contribution portion of the plan are US\$ 257.

The average duration of the actuarial liability related to the plan, as of December 31, 2019 is 23.34 years (19.68 at December 31, 2018, recalculated for better comparability).

c) Petros 3 Plan

On December 18, 2018, the Board of Directors approved a proposal for a new pension plan with defined contribution characteristics to be offered. Its adhesion is voluntary to the participants of Petros Plan –Renegotiated and Petros Plan – Non-renegotiated.

The migration to this new plan will only be possible after the proposal review and approval by all relevant bodies. The proposal has already been approved by the Petros Deliberative Council and the Petrobras Board of Directors and is awaiting approval from PREVIC and SEST.

The participants' new benefit will be recalculated based on future commitments on a participant basis at the time of migration. Therefore, each participant will have an individual account, and the amount of the retirement benefit will depend on the accumulated balance, being recalculated annually in connection with the return on plan assets.

The migration for Petros 3 Plan is expected to be offered in the first half of 2020.

d) Other plans

The Company also sponsors other pension and health care plans of certain of its Brazilian and international subsidiaries. Most of these plans are unfunded and their assets are held in trusts, foundations or similar entities governed by local regulations.

18.2. Pension Plans assets

Pension plans assets follow a long term investment strategy based on the risks assessed for each different class of assets and provide for diversification, in order to lower portfolio risk. The portfolio profile must comply with the Brazilian National Monetary Council (*Conselho Monetário Nacional – CMN*) regulations.

Petros Foundation establishes investment policies for 5-year periods, reviewed annually. Petros uses an asset liability management model (ALM) to address net cash flow mismatches of the benefit plans, based on liquidity and solvency parameters, simulating a 30-year period.

	Petros Renegotiated		Petros Non-renegotiated		Petros plan 2	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Fixed-income	20%	100%	20%	100%	-	100%
Variable-income	-	45%	-	45%	-	45%
Structured investments	-	40%	-	40%	-	40%
Real estate properties	-	10%	-	10%	-	10%
Loans to participants	-	15%	-	15%	-	15%
Investments abroad	-	10%	-	5%	-	10%

The pension plan assets by type of asset are set out as follows:

Type of asset	2019				2018	
	Quoted prices in active markets	Unquoted prices	Total fair value	%	Total fair value	%
Receivables	-	963	963	7%	1,087	9%
Fixed income	6,179	2,607	8,786	62%	7,761	61%
Government bonds	6,179	-	6,179	-	6,522	-
Fixed income funds	-	1,608	1,608	-	940	-
Other investments	-	999	999	-	299	-
Variable income	2,753	152	2,905	21%	2,208	17%
Common and preferred shares	2,753	-	2,753	-	2,081	-
Other investments	-	152	152	-	127	-
Structured investments	-	185	185	1%	237	2%
Real estate properties	-	767	767	6%	829	7%
	8,932	4,674	13,606	97%	12,122	96%
Loans to participants	-	469	469	3%	533	4%
Total	8,932	5,143	14,075	100%	12,655	100%

As of December 31, 2019, the investment portfolio included debentures of US\$ 11 (US\$ 11 in 2018), Company's common shares in the amount of US\$ 1 (US\$ 3 in 2018) and real estate properties leased by the Company in the amount of US\$ 342 (US\$ 344 in 2018).

Loans to participants are measured at amortized cost, which is considered an appropriate estimate of fair value.

18.3. Medical Benefits: Health Care Plan - *Assistência Multidisciplinar de Saúde* ("AMS")

Petrobras, Petrobras Distribuidora S.A., Petrobras Transporte S.A. – Transpetro, Petrobras Biocombustível, Transportadora Brasileira Gasoduto Brasil-Bolívia – TBG and Termobahia operate a medical benefit plan for their employees in Brazil (active and retired) and their dependents: the AMS health care plan. The plan is managed by the Company based on a self-supporting benefit assumption and includes health prevention and health care programs. The plan is mainly exposed to the risk of an increase in medical costs due to new technologies, new types of coverage and to a higher level of usage of medical benefits. The Company continuously improves the quality of its technical and administrative processes, as well as the health programs offered to beneficiaries in order to mitigate such risks.

The employees make fixed monthly contributions to cover high-risk procedures and variable contributions for a portion of the cost of the other procedures, both based on the contribution tables of the plan, which are determined based on certain parameters, such as salary and age levels. The plan also includes assistance towards the purchase of certain medicines in registered drugstores throughout Brazil. There are no health care plan assets.

Benefits are paid and recognized by the Company based on the costs incurred by the participants, of which the Company satisfies 70% of these costs as governed by the collective bargaining agreement.

The average duration of the actuarial liability related to this health care plan, as of December 31, 2019, is 21.64 years (22.24 as of December 31, 2018).

CGPAR resolutions

On January 18, 2018, the Inter-ministerial Commission for Corporate Governance and Administration of Participations of the Union (CGPAR), through CGPAR Resolutions 22 and 23, established guidelines and parameters of governance and cost limits to health care plans operated by state-owned companies.

The main objective of the resolutions is to make feasible the sustainability and the economic, financial and actuarial balance of the health plans operated by state-owned companies.

The company has up to 48 months to adjust the AMS health plan to this new regulation provisions and is assessing the financial impacts it may cause, including among others, a possible decrease in its actuarial liability following the parity basis of contribution, between the Company and the participants, determined by this rule.

18.4. Net actuarial liabilities and expenses, and fair value of plans assets

a) Changes in the actuarial liabilities, in the fair value of the assets and in the amounts recognized in the statement of financial position

						2019
			Pension Plans	Medical Plan		
	Petros Renegotiated (*)	Petros Non-renegotiated (*)	Petros 2	AMS	Other plans	Total
Changes in the present value of obligations						
Obligations at the beginning of the year	16,689	5,372	996	12,236	112	35,405
Discontinued operations	(892)	(304)	(58)	(651)	-	(1,905)
Interest expense	1,357	431	83	1,024	6	2,901
Current service cost	51	6	39	208	2	306
Contributions paid by participants	82	16	-	-	-	98
Benefits paid	(1,097)	(420)	(33)	(442)	(2)	(1,994)
Remeasurement: Experience (gains) / losses (**)	1,165	17	(34)	(2,489)	(7)	(1,348)
Remeasurement: (gains) / losses - demographic assumptions	45	59	(43)	(169)	(1)	(109)
Remeasurement: (gains) / losses - financial assumptions	4,044	957	747	2,747	13	8,508
Others	-	-	-	-	(84)	(84)
Cumulative Translation Adjustment	(525)	(179)	(25)	(478)	(2)	(1,209)
Obligations at the end of the year	20,919	5,955	1,672	11,986	37	40,569
Changes in the fair value of plan assets						
Fair value of plan assets at the beginning of the year	9,537	2,492	585	-	41	12,655
Discontinued operations	(493)	(128)	(42)	-	-	(663)
Interest income	847	226	48	-	2	1,123
Contributions paid by the sponsor (Company)	342	108	-	442	7	899
Contributions paid by participants	82	16	-	-	-	98
Term of financial commitment (TFC) paid by the Company	725	273	-	-	-	998
Benefits Paid	(1,097)	(420)	(33)	(442)	(2)	(1,994)
Remeasurement: Return on plan assets due to lower interest income	1,099	218	143	-	2	1,462
Others	-	-	-	-	(36)	(36)
Cumulative Translation Adjustment	(354)	(94)	(18)	-	(1)	(467)
Fair value of plan assets at the end of the year	10,688	2,691	683	-	13	14,075
Amounts recognized in the Statement of Financial Position						
Present value of obligations	20,919	5,955	1,672	11,986	37	40,569
(-) Fair value of plan assets	(10,688)	(2,691)	(683)	-	(13)	(14,075)
Net actuarial liability as of December 31,	10,231	3,264	989	11,986	24	26,494
Changes in the net actuarial liability						
Balance as of January 1,	7,152	2,880	411	12,236	71	22,750
Discontinued operations	(399)	(176)	(17)	(651)	(1)	(1,244)
Remeasurement effects recognized in other comprehensive income	4,155	815	527	89	3	5,589
Costs incurred in the period	51	6	40	208	2	307
Current service cost	510	205	35	1,024	5	1,779
Contributions paid	(340)	(107)	-	(442)	(7)	(897)
Payments related to Term of financial commitment (TFC)	(717)	(269)	-	-	-	(985)
Others	-	-	-	-	(48)	(48)
Cumulative Translation Adjustment	(181)	(90)	(7)	(478)	(1)	(757)
Balance as of December 31,	10,231	3,264	989	11,986	24	26,494

(*) It includes the changes in Petros plan, PPR and PPNR plans.

(**) It includes additional contributions of participants regarding the deficit settlement plan as set out in note 23.1.

	2018				
	Pension Plan		Medical Plan		
	Petros	Petros 2	AMS	Other plans	Total
Changes in the present value of obligations					
Obligations at the beginning of the year	25,081	887	10,802	85	36,855
Interest expense:	2,111	77	927	4	3,119
Current service cost	83	33	155	7	278
Contributions paid by participants	374	-	-	-	374
Benefits paid	(2,173)	(35)	(456)	(3)	(2,667)
Remeasurement: Experience (gains) / losses (*)	(1,373)	8	(115)	-	(1,480)
Remeasurement: (gains) / losses - demographic assumptions	80	-	176	-	256
Remeasurement: (gains) / losses - financial assumptions	1,577	165	2,412	(2)	4,152
Others	-	-	-	34	34
Cumulative Translation Adjustment	(3,699)	(139)	(1,665)	(13)	(5,516)
Obligations at the end of the year	22,061	996	12,236	112	35,405
Changes in the fair value of plan assets					
Fair value of plan assets at the beginning of the year	14,353	627	-	45	15,025
Interest income	1,203	54	-	-	1,257
Contributions paid by the sponsor (Company)	278	-	321	-	599
Contributions paid by participants	374	-	-	-	374
Term of financial commitment (TFC) paid by the Company	223	-	-	-	223
Benefits Paid	(2,401)	(38)	(504)	(3)	(2,946)
Remeasurement: Return on plan assets due to lower interest income	(233)	35	-	(4)	(202)
Others	-	-	-	3	3
Cumulative Translation Adjustment	(1,768)	(93)	183	-	(1,678)
Fair value of plan assets at the end of the year	12,029	585	-	41	12,655
Amounts recognized in the Statement of Financial Position					
Present value of obligations	22,061	996	12,236	112	35,405
(-) Fair value of plan assets	(12,029)	(585)	-	(41)	(12,655)
Net actuarial liability as of December 31,	10,032	411	12,236	71	22,750
Changes in the net actuarial liability					
Balance as of January 1,	10,728	260	10,802	40	21,830
Remeasurement effects recognized in other comprehensive income	517	138	2,473	2	3,130
Costs incurred in the period	991	56	1,082	11	2,140
Current service cost	908	23	927	4	1,862
Contributions paid	(278)	-	(321)	-	(599)
Payments related to Term of financial commitment (TFC)	(223)	-	-	-	(223)
Others	-	-	-	31	31
Cumulative Translation Adjustment	(2,611)	(66)	(2,727)	(17)	(5,421)
Balance as of December 31,	10,032	411	12,236	71	22,750

(*) It includes additional contributions of participants regarding the deficit settlement plan as set out in note 23.1.

b) Defined benefit costs

						2019
			Pension Plans		Medical Plan	
	Petros Renegotiated	Petros Non - renegotiated	Petros 2	AMS	Other Plans	Total
Related to active employees:	160	27	58	466	4	715
Related to retirees	401	184	17	766	3	1,371
Net expenses for the year	561	211	75	1,232	7	2,086

							2018
	Pension Plans				Medical Plan		
	Petros	Petros Renegotiated	Petros Non - renegotiated	Petros 2	AMS	Other Plans	Total
Related to active employees:	63	132	32	43	340	7	617
Related to retirees	198	386	126	10	678	3	1,401
Net expenses for the year	261	518	158	53	1,018	10	2,018

						2017
			Pension Plans		Medical Plan	
	Petros	Petros 2	AMS	Other Plans	Total	
Related to active employees:	331	60	377	10	778	
Related to retirees	862	12	916	1	1,791	
Net expenses for the year	1,193	72	1,293	11	2,569	

c) Sensitivity analysis of the defined benefit plans

The effect of a 100 basis points (bps) change in the assumed discount rate and medical cost trend rate is as set out below:

2019	Discount Rate				Medical Cost	
	Pension Benefits		Medical Benefits		Medical Benefits	
	+100 bps	-100 bps	+100 bps	-100 bps	+100 bps	-100 bps
Pension Obligation	(3,195)	4,444	(1,623)	2,073	2,063	(1,171)
Current Service cost and interest cost	16	91	(70)	86	228	(121)

2018	Discount Rate				Medical Cost	
	Pension Benefits		Medical Benefits		Medical Benefits	
	+100 bps	-100 bps	+100 bps	-100 bps	+100 bps	-100 bps
Pension Obligation	(1,714)	3,889	(1,498)	1,869	1,994	(1,005)
Current Service cost and interest cost	13	140	(74)	89	248	(117)

d) Actuarial assumptions

Assumptions	2019					
	PPSP-R Pre-70	PPSP-R Post-70	PPSP-NR Pre-70	PPSP-NR Post-70	PP2	AMS
Nominal discount rate (including inflation)(1)	6.82%	7.13%	6.81%	7.10%	7.30%	7.19%
Nominal expected salary growth (including inflation) (2)	4.61%	4.61%	4.34%	4.34%	6.40%	according to security plan
Expected changes in medical and hospital costs (3)	n/a	n/a	n/a	n/a	n/a	10.46% a 3.50% p.a.
Mortality table	EX-PETROS 2016 (bidecremental)	EX-PETROS 2013 (bidecremental)	EX-PETROS 2020 (bidecremental)	EX-PETROS 2020 (bidecremental)	AT-2000 female, smoothed in a 10%	EX-PETROS 2013 (bidecremental)
Disability table	n/a	American group	n/a	American group	American group reduced by 40%	American group
Mortality table for disabled participants	MI 2006, by gender, smoothed in a 20%	AT-49 male	MI 2006, by gender, smoothed in a 20%	AT-49 male	IAPB 1957 strong	AT-49 male
Age of retirement	Male, 56 years / Female, 55 years	Male, 56 years / Female, 55 years	Male, 58 years / Female, 56 years	Male, 58 years / Female, 56 years	1st eligibility	Male, 56 years / Female, 55 years

Assumptions	2018			
	PPR	PPNR	Petros 2	AMS
Nominal discount rate (including inflation)(1)	9.11%	9.08%	9.22%	9.16%
Nominal expected salary growth (including inflation) (2)	For 2019: 5.55%	For 2019: 5.40%	For 2019: 7.28%	according to security plan
Expected changes in medical and hospital costs (3)	As of 2020: 5.33%	As of 2020: 5.24%	As of 2020: 6.84%	
Expected changes in medical and hospital costs (3)	n/a	n/a	n/a	12.03% to 4% p.a.
Mortality table	EX-PETROS 2013 (bidecremental)	EX-PETROS 2017 (bidecremental)	AT-2000 female, smoothed in a 10%	EX-PETROS 2013 (bidecremental)
Disability table	American group	American group	American group reduced by 40%	American group
Mortality table for disabled participants	AT-49 male	AT-49 male	IAPB 1957 strong	AT-49 male
Age of retirement	Male, 56 years / Female, 55 years	Male, 58 years / Female, 56 years	1st eligibility	Male, 56 years / Female, 55 years

(1) Inflation reflects market projections: 3.61% for 2019 and converging to 3.5% in 2026 onwards.

(2) Expected salary growth only of Petrobras, the sponsor, based on the Salaries and Benefits Plan.

(3) Decreasing rate, converging in 30 years to the long-term expected inflation. Refers only to Petrobras (sponsor) rate.

e) Expected maturity analysis of pension and medical benefits

	2019				
	Pension Plan		Medical Plan		Total
	Petros Renegotiated	Petros Non - renegotiated	Petros 2	AMS	
Up to 1 Year	1,064	445	35	378	1,923
1 To 2 Years	5,018	1,990	183	2,109	9,305
2 To 3 Years	4,165	1,554	187	2,134	8,046
3 To 4 Years	3,254	1,121	189	1,889	6,459
Over 4 Years	7,418	845	1,078	5,476	14,836
Total	20,919	5,955	1,672	11,986	40,569

18.5. Other defined contribution plans

Petrobras, through its subsidiaries in Brazil and abroad, also sponsors other defined contribution pension plans for employees. Contributions paid amounting to US\$ 2 in 2019 (US\$ 3 in 2018) were recognized in the statement of income.

18.6. Accounting policy for post-employment defined benefit

Actuarial commitments related to post-employment defined benefit plans and health-care plans are recognized as liabilities in the statement of financial position based on actuarial calculations which are revised annually by an independent qualified actuary (updating for material changes in actuarial assumptions and estimates of expected future benefits), using the projected unit credit method, net of the fair value of plan assets, when applicable, from which the obligations are to be directly settled. Under the projected credit unit method, each period of service gives rise to an additional unit of benefit entitlement and each unit is measured separately to determine the final obligation. Actuarial assumptions include demographic assumptions, financial assumptions, medical costs estimates, historical data related to benefits paid and employee contributions.

Service cost are accounted for within results and comprises: (i) current service cost, which is the increase in the present value of the defined benefit obligation resulting from employee service in the current period; (ii) past service cost, which is the change in the present value of the defined benefit obligation for employee service in prior periods, resulting from a plan amendment (the introduction, modification, or withdrawal of a defined benefit plan) or a curtailment (a significant reduction by the entity in the number of employees covered by a plan); and (iii) any gain or loss on settlement.

Net interest on the net defined benefit liability (asset) is the change during the period in the net defined benefit liability (asset) that arises from the passage of time. Such interest is accounted for in results.

Remeasurement of the net defined benefit liability (asset) is recognized in shareholders' equity, in other comprehensive income, and comprises: (i) actuarial gains and losses and; (ii) the return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset).

The Company also contributes amounts to defined contribution plans, that are expensed when incurred and are computed based on a percentage of salaries.

19. Provisions for legal proceedings

19.1. Provisions for legal proceedings, judicial deposits and contingent liabilities

The Company recognizes provisions based on the best estimate of the costs of proceedings for which it is probable that an outflow of resources embodying economic benefits will be required and that can be reliably estimated. These proceedings mainly include:

- Labor claims, in particular: (i) opt-out claims related to a review of the methodology by which the minimum compensation based on an employee's position and work schedule (*Remuneração Mínima por Nivel e Regime* - RMNR) is calculated; (ii) lawsuits relating to overtime pay and (iii) actions of outsourced employees;
- Tax claims including: (i) claims relating to Brazilian federal tax credits applied that were disallowed; and (ii) alleged misappropriation of VAT (ICMS) tax credits;
- Civil claims relating to: (i) collection of royalties over the shale extraction; (ii) compensation of loss of profits; (iii) penalties applied by ANP relating to measurement systems; and (iv) litigations involving the company Sete Brasil.
- Environmental claims for compensation relating to an environmental accident in the State of Paraná, in 2000.

Provisions for legal proceedings are set out as follows:

	12.31.2019	12.31.2018
Current and Non-current liabilities		
Labor claims	895	1,093
Tax claims	463	491
Civil claims	1,523	5,710
Environmental claims	232	111
Total	3,113	7,405
Current liabilities	–	3,482
Non-current liabilities	3,113	3,923
	Jan-Dec/2019	Jan-Dec/2018
Opening Balance	7,405	7,026
Additions, net of reversals	1,290	1,325
Use of provision (*)	(5,332)	(650)
Accruals and charges	233	736
Transfer to assets held for sale	(289)	–
Others	22	95
Cumulative translation adjustment	(216)	(1,127)
Closing Balance	3,113	7,405

(*) It includes the US\$ 2,866 relating to approval of the Class Action agreement, US\$ 903 relating to an agreement regarding the Parque das Baleias field, and US\$ 656 relating to the proceeding regarding drilling rig Titanium Explorer.

In preparing its consolidated financial statements for the year ended December 31, 2019, the Company considered all available information concerning legal proceedings in which the Company is a defendant, in order to estimate the amounts of obligations and probability that outflows of resources will be required.

The main additions to provisions for legal proceedings in the year ended December 31, 2019 relate to (i) litigations involving the company Sete Brasil, in the amount of US\$ 740, including an arbitration award favorable to Petrobras, in the last quarter of 2019, which reduced the estimate of losses; (ii) the Conduct Adjustment Declaration ("TAC") to close the public civil action requesting the environmental licensing of Comperj, in the amount of US\$ 208, which was transferred to other current liabilities, after the TAC becoming effective; (iii) ICMS debts under the ICMS Agreement 7/2019 in the states of Bahia and Ceará, in the amount of US\$ 94; (iv) compensation relating to an environmental accident in the State of Paraná for US\$ 155; and (v) action for the cancellation of collection of production taxes in the amount of US\$ 66.

19.2. Judicial deposits

Judicial deposits made in connection with legal proceedings are set out in the table below according to the nature of the corresponding lawsuits:

	12.31.2019	12.31.2018
Non-current assets		
Tax	5,926	4,563
Labor	1,056	1,161
Civil	1,082	823
Environmental	160	160
Others	12	4
Total	8,236	6,711

	12.31.2019	12.31.2018
Opening Balance	6,711	5,582
Additions	2,021	1,883
Use	(187)	(86)
Accruals and charges	329	294
Transfer to assets held for sale	(313)	-
Others	(1)	26
Cumulative translation adjustment	(324)	(988)
Closing Balance	8,236	6,711

In 2019, the Company made judicial deposits in the amount of US\$ 2,021, including: (i) US\$ 710 related to the chartering of platforms due to the legal dispute related to the IRRF; (ii) US\$ 456 referring to IRPJ and CSLL for not adding the profits of subsidiaries domiciled abroad to the IRPJ and CSLL calculation base; (iii) US\$ 177 related to questions from the ANP about differences in the calculation of royalties and special participation; (iv) US\$ 177 related to the civil lawsuit related to IPI credit, whose author is Triunfo Agro Industrial. On the other hand, there was a reduction of US\$ 313, mainly due to the sale of interest in BR Distribuidora.

19.3. Contingent liabilities

Contingent liabilities for which either the Company is unable to make a reliable estimate of the expected financial effect that might result from resolution of the proceeding, or a cash outflow is not probable, are not recognized as liabilities in the financial statements but are disclosed in the notes to the financial statements, unless the likelihood of any outflow of resources embodying economic benefits is considered remote.

The estimates of contingent liabilities for legal proceedings are indexed to inflation and updated by applicable interest rates. As of December 31, 2019, estimated contingent liabilities for which the possibility of loss is not considered remote are set out in the following table:

Nature	12.31.2019	12.31.2018
Tax	32,376	37,290
Labor	9,734	8,619
Civil - General	5,977	6,539
Civil - Environmental	1,576	4,221
Total	49,663	56,669

The tables below detail the main causes of tax, civil, environmental and labor nature, whose expectations of losses are classified as possible.

Description of tax matters	Estimate	
	12.31.2019	12.31.2018
Plaintiff: Secretariat of the Federal Revenue of Brazil		
1) Withholding income tax (IRRF), Contribution of Intervention in the Economic Domain (CIDE), Social Integration Program (PIS) and Contribution to Social Security Financing (COFINS) on remittances for payments of vessel charters.		
Current status: The claim about the incidence of withholding income tax (Imposto de Renda Retido na Fonte - IRRF) on remittances for payments of vessel charters, occurred from 1999 to 2002, involves the legality of the normative rule issued by the Federal Revenue of Brazil, which ensured no taxation over those remittances. The Company considers the likelihood of loss as possible, since there are decisions from Superior Courts favorable to the understanding of the Company, and will continue to defend its opinion. The other claims, concerning CIDE and PIS/COFINS, involve lawsuits in different administrative and judicial stages, for which the Company understands there is a possible likelihood of loss, since there are legal predictions in line with the position of the Company.		
	11,632	11,568
2) Income from foreign subsidiaries and associates located outside Brazil not included in the computation of taxable income (IRPJ and CSLL).		
Current status: This claim involves lawsuits in different administrative and judicial stages. The Company considers the likelihood of loss as possible, since there are decisions from Superior Courts favorable to the understanding of the Company. In 2019, the company received a new infraction notice.		
	5,224	5,208
3) Requests to compensate federal taxes disallowed by the Brazilian Federal Tax Authority.		
Current status: This claim involves lawsuits in different administrative and judicial stages. The company obtained a final decision at CARF, canceling part of the debts.		
	1,019	3,156
4) Incidence of social security contributions over contingent bonuses paid to employees.		
Current status: Awaiting defense judgment and appeals at the administrative and judicial levels.		
	992	929
5) Collection of Contribution of Intervention in the Economic Domain (CIDE) on transactions with fuel retailers and service stations protected by judicial injunctions determining that fuel sales were made without gross-up of such tax.		
Current status: This claim involves lawsuits in different judicial stages.		
	579	588
6) Deduction from the basis of calculation of taxable income (income tax - IRPJ and social contribution - CSLL) of several expenses related to employee benefits.		
Current status: The claim involves lawsuits in different administrative and judicial stages.		
	536	542
Plaintiff: Municipal governments of the cities of Anchieta, Aracruz, Guarapari, Itapemirim, Marataízes, Linhares, Vila Velha and Vitória		
7) Alleged failure to withhold and pay tax on services provided offshore (ISSQN) in favor of some municipalities in the State of Espírito Santo, under the allegation that the service was performed in their "respective coastal waters".		
Current status: This claim involves lawsuits in different administrative and judicial stages.		
	1,250	1,123
Plaintiff: States of SP, RJ, BA, PA, AL, MA and PB Finance Departments		
8) VAT (ICMS) and VAT credits on internal consumption of bunker fuel and marine diesel, destined to chartered vessels.		
Current status: This claim involves several tax notices from the states, including two new material notices applied in the third quarter of 2018, which are in different administrative and judicial stages.		
	1,191	1,323
Plaintiff: States of RJ and AL Finance Departments		
9) VAT (ICMS) on dispatch of liquid natural gas (LNG) and C5+ (tax document not accepted by the tax authority), as well as challenges on the rights to this VAT tax credit.		
Current status: This claim involves lawsuits in different administrative and judicial stages.		
	1,098	1,198
Plaintiff: States of RJ, AL, AM, PA, BA, GO, MA, SP and PE Finance Departments		
10) Alleged failure to write-down VAT (ICMS) credits related to zero tax rated or non-taxable sales made by the Company and its customers.		
Current status: This claim involves lawsuits in different administrative and judicial stages. New assessments were added in 2019.		
	1,058	942
Plaintiff: State of Rio de Janeiro Finance Department		
11) The plaintiff alleges that the transfers without segregating VAT (ICMS), under the special regime, reduced the total credits of the central department.		
Current status: The Company presented administrative defense from the notices issued, pending court assessment.		
	989	800
Plaintiff: States of SP and RS Finance Departments		
12) Collection of VAT (ICMS) related to natural gas imports from Bolivia, alleging that these states were the final destination (consumers) of the imported gas.		
Current status: This claim involves lawsuits in different administrative and judicial stages, as well as three civil lawsuits in the Federal Supreme Court.		
	640	740
Plaintiff: States of RJ, SP, PR, RO and MG Finance Departments		
13) Additional VAT (ICMS) due to differences in rates on jet fuel sales to airlines in the domestic market, among other questions relating to the use of tax benefits.		
Current status: This claim involves lawsuits in different administrative and judicial stages.		
	634	965
Plaintiff: States of RJ Finance Departments		

14) Appropriation of ICMS credit on the acquisition of goods (products in general) that, in the understanding of the inspection, would fit into the concept of material for use and consumption, being the tax credit undue.		
Current status: The issue involves several administrative and judicial proceedings. There were new infraction notices in 2019, partially offset by the inclusion of ICMS debts in state amnesty programs.	602	589
Plaintiff: States of PR, AM, BA, ES, PA, PE, SP, PB and AL Finance Departments		
15) Incidence of VAT (ICMS) over alleged differences in the control of physical and fiscal inventories.		
Current status: This claim involves lawsuits in different administrative and judicial levels. Exposure reduction due to the inclusion of VAT (ICMS) debts in state amnesty programs.	571	890
Plaintiff: State of SP Finance Department		
16) Deferral of payment of VAT (ICMS) taxes on B100 Biodiesel sales and the charge of a 7% VAT rate on B100 on Biodiesel interstate sales, including states in the Midwest, North and Northeast regions of Brazil and the State of Espírito Santo.		
Current status: This claim involves lawsuits in different administrative and judicial stages. In 2019, the company obtained final favorable decisions, contributing to the partial reduction of the exposure.	565	659
Plaintiff: States of RJ, SP, ES, BA, PE, RS, AL, SE, CE and RN Finance Departments		
17) Misappropriation of VAT tax credit (ICMS) on the acquisitions of goods that, per the tax authorities, are not related to property, plant and equipment.		
Current status: This claim involves lawsuits in different judicial stages. Exposure reduction due to the inclusion of ICMS debts in state amnesty programs.	562	900
Plaintiff: States of RJ, SP, SE and BA Finance Departments		
18) Misappropriation of VAT tax credit (ICMS) on the acquisitions of drills and chemicals used in the formulation of drilling fluid, per the tax authorities.		
Current status: This claim involves lawsuits in different administrative and judicial stages. In 2019, the company obtained final favorable decisions, contributing to the partial reduction of the exposure.	511	567
Plaintiff: State of BA Finance Department		
19) Alleged incorrect application of VAT (ICMS) tax base with respect to interstate sales of natural gas transport through city-gates in the State of Pernambuco destined to the distributors in that State. The Finance Department of the State of Pernambuco understands that activity as being an industrial activity which could not be characterized as an interstate sale transaction (considering that the Company has facilities located in Pernambuco), consequently charging the difference on the tax levied on the sale and transfer transactions.		
Current status: This claim involves lawsuits in different judicial stages. Exposure reduction due to the inclusion of ICMS debts in state amnesty programs.	8	304
Plaintiff: States of GO, PA, RJ, RR, SC, SP and TO.		
20) Charge of VAT (ICMS) on remittance and symbolic return of jet fuel to retail establishment which, in the understanding of the tax authority, should have retention and collection of the ICMS for the subsequent operations, since it is considered a remittance to a retail taxpayer established in the State.		
Current status: The exposure was zeroed due to the Petrobras Distribuidora follow-on in July 2019.	-	373
21) Other tax matters	2,715	3,926
Total for tax matters	32,376	37,290

Description of civil matters	Estimate	
	12.31.2019	12.31.2018
Plaintiff: Agência Nacional de Petróleo, Gás Natural e Biocombustíveis - ANP		
1) Administrative proceedings challenging an ANP order requiring Petrobras to pay additional special participation fees and royalties (production taxes) with respect to several fields. It also includes contention about fines imposed by ANP due to alleged failure to comply with the minimum exploration activities program, as well as alleged irregularities relating to compliance with oil and gas industry regulation.		
Current status: The claims involve lawsuits in different administrative and judicial stages.	1,520	1,663
2) Proceedings challenging an ANP order requiring Petrobras to unite Lula and Cernambi fields on the BM-S-11 joint venture; to unite Baúna and Piracicaba fields; to unite Tartaruga Verde and Mestiça fields; and to unite Baleia Anã, Baleia Azul, Baleia Franca, Cachalote, Caxaréu, Jubarte and Pirambu, in the Parque das Baleias complex, which would cause changes in the payment of special participation charges.		
Current status: This list involves claims that are disputed in court and in arbitration proceedings, as follows: a) Lula and Cernambi: initially, the Company made judicial deposits for the alleged differences resulting from the special participation. However, with the reversal of the favorable injunction, the payment of these alleged differences were made directly to ANP, and such judicial deposits were resumed in the 2nd Quarter of 2019. Arbitration remains suspended by court decision; b) Baúna and Piracicaba: the Court reassessed previous decision that disallowed judicial deposits, therefore the Company is currently depositing the controversial amounts. The arbitration is stayed. c) Tartaruga Verde and Mestiça: The Company has authorization to make the judicial deposits relating to these fields. The Regional Federal Court of the Second Region has the opinion that the Chamber of Arbitration has jurisdiction on this claim and the arbitration is ongoing.	391	287
Plaintiff: Several plaintiffs in Brazil and EIG Management Company in USA		
3) Arbitration in Brazil and lawsuit in the USA regarding Sete Brasil.		
Current status: This list involves claims that are disputed in court and in arbitration proceedings, as follows: a) Lula and Cernambi: initially, the Company made judicial deposits for the alleged differences resulting from the special participation. However, with the reversal of the favorable injunction, the arbitration is stayed and currently the payment of these alleged differences have been made directly to ANP, until a final judicial decision is handed down. b) Baúna and Piracicaba: the Court reassessed previous decision that disallowed judicial deposits, therefore the Company is currently depositing the controversial amounts. The arbitration is stayed. c) Tartaruga Verde and Mestiça: The Company has authorization to make the judicial deposits relating to these fields. The Regional Federal Court of the Second Region has the opinion that the Chamber of Arbitration has jurisdiction on this claim and the arbitration is ongoing. On both parties initiative, the arbitration is stayed. d) Parque das Baleias complex: the Judiciary stated decisions allowing the arbitration with ANP. Therefore, the Chamber of Arbitration disallowed ANP to charge for special participation, establishing that Petrobras should provide collateral on the debt to be negotiated. On both parties initiative, the arbitration is stayed, with the objective of seeking an alternative to solve this dispute, which amounts to US\$ 2.8 billion at December 31, 2018. In December 2018, the ANP held a hearing presenting a draft of the preliminary agreement developed by the technical departments of Petrobras and ANP, including the calculation of the updated amounts of special participation due up the last quarter of 2018, totaling US\$ 0.9 billion. Therefore, the Company believes, as of December 31, 2018, that an outflow of resources in this amount is probable to settle the controversy with the ANP and, as a result, recognized a provision for this proceeding in 2018.	1,024	2,082
Plaintiff: Agência Estadual de Regulação de Serviços Públicos de Energia, Transportes e Comunicações da Bahia (AGERBA)		
4) Public Civil Action (ACP) to discuss the alleged illegality of the gas supply made by the company to its Nitrogenated Fertilizer Production Unit (FAFEN / BA).		
Current status: The lawsuit is at the Bahia Court of Justice awaiting judgment of an appeal filed by the company.	299	278
5) Other civil matters	2,743	2,229
Total for civil matters	5,977	6,539

Description of labor matters	Estimate	
	12.31.2019	12.31.2018
Plaintiff: Employees and Sindipetro Union of ES, RJ, BA, MG, SP, PE, PB, RN, CE, PI, PR and SC.		
1) Actions requiring a review of the methodology by which the minimum compensation based on an employee's position and work schedule (Remuneração Mínima por Nível e Regime - RMNR) is calculated. Current status: In 2018, the Superior Labor Court (Tribunal Superior do Trabalho - TST) denied the special appeal filed by the Company. Petrobras filed a Motion for Clarification on the decision, which was denied by the TST. The Company will file the appropriate appeal. On July 26, 2018, a minister of the Superior Federal Court (Superior Tribunal Federal - STF) granted Petrobras' request to prevent the effects of the judgment of the TST, determining the suspension of individual and class actions on this subject, pending the deliberation on this matter in the Supreme Court or further deliberation of the rapporteur minister assigned to this case. On August 13, 2018, the rapporteur confirmed the decision of the minister and extended the decision to the ongoing actions on the matter, suspending all cases relating to this subject.		
	7,732	6,254
Plaintiff: Sindipetro of Norte Fluminense – SINDIPETRO/NF		
2) The plaintiff claims Petrobras failed to pay overtime for standby work exceeding 12-hours per day. It also demands that the Company respects a 12-hour limit of standby work per workday, as well as an 11-hour period for rest between workdays, subject to a daily fine. Current status: Transfer to remote loss due to the decision of the TST that denied to follow up the appeal of the SINDIPETRO / NF.		
	14	352
3) Other labor matters	1,988	2,013
Total for labor matters	9,734	8,619
Description of environmental matters	Estimate	
	12.31.2019	12.31.2018
Plaintiff: Ministério Público do Estado do Rio de Janeiro.		
1) Legal proceeding related to specific performance obligations, indemnification and compensation for damages related to an environmental accident that occurred in the State of Paraná on July 16, 2000. Current status: The court partially ruled in favor of the plaintiff. However, both parties (the plaintiff and the Company) filed an appeal. In the third quarter of 2019, there was a reduction on the contingent liability, with a provision of US\$ 150 being recognized as other income and expenses.		
	470	901
Plaintiff: Instituto Brasileiro de Meio Ambiente - IBAMA and Ministério Público Federal		
2) Administrative proceedings arising from environmental fines related to exploration and production operations (Upstream) contested because of disagreement over the interpretation and application of standards by IBAMA, as well as a public civil action filed by the Ministério Público Federal for alleged environmental damage due to the accidental sinking of P-36 Platform. Current status: A number of defense trials and the administrative appeal regarding the fines are pending, and others are under judicial discussion. With respect to the civil action, the Company appealed the ruling that was unfavorable in the lower court and monitors the use of the procedure that will be judged by the Regional Federal Court.		
	326	400
Plaintiff: Ministério Público do Estado do Rio de Janeiro.		
3) Five public civil actions filed by the Public Prosecutor's Office of the State of Rio de Janeiro against Petrobras, the State Environmental Institute - INEA and Rio de Janeiro State, requesting proof of compliance with regulation relating to the environmental licensing of COMPERJ, complementation of technical researches, as well as compensation for collective material and moral damages. Current status: The main claim was closed due to the signing of the conduct adjustment term (TAC) between the parties, resulting in an obligation of US\$ 208, while, in the remaining four actions, the parties are in negotiations for solution through again TAC, which resulted in the transfer of exposure to remote loss and a provision of US\$ 13.		
	-	2,096
4) Other environmental matters	780	824
Total for environmental matters	1,576	4,221

19.4. Class action and related proceedings

19.4.1. Class action and related proceedings in the USA

Under the Class action Settlement, Petrobras (together with its subsidiary PGF) agreed to pay US\$ 2,950 to resolve claims in two installments of US\$ 983 and a further installment of US\$ 984. Accordingly, the Company charged US\$ 3,449 to its statement of income for the last quarter of 2017 as other income and expenses, taking into account the gross up of tax related to Petrobras's portion of the settlement. The three installments were deposited on March 1, 2018, July 2, 2018 and January 15, 2019 into an escrow account designated by the lead plaintiff and accounted for as other current assets. However, certain objectors had appealed the District Court's final decision to approve the Class Action Settlement.

On August 30, 2019, the United States Court of Appeals for the Second Circuit confirmed the decision approving the agreement for the Class Action Settlement and, therefore, the agreement is no longer subject to appeals.

On September 24, 2019, the District Court authorized the beginning of the distribution of the amounts deposited in the escrow account designated by the lead plaintiff to investors who had their claims admitted by that Court.

Thus, the installments deposited in the escrow account were offset with the liability accounted for as current provision for legal proceedings.

In connection with consummated settlements of Individual Actions, the company charged US\$ 456, during the years 2016 to 2018, to the statement of income as other income and expenses. In 2019, there were no new payments.

19.4.2. Class action in the Netherlands

On January 23, 2017, the Stichting Petrobras Compensation Foundation ("Foundation") filed a class action before the district court in Rotterdam, in the Netherlands, against Petrobras parent company and Petrobras International Braspetro B.V. (PIBBV), Petrobras Global Finance B.V. (PGF), Petrobras Oil & Gas B.V. (PO&G) and some former managers of Petrobras.

The Foundation allegedly represents the interests of an unidentified group of investors and alleges that based on the facts uncovered by the Lava Jato investigation the defendants acted unlawfully towards investors. Based on the allegations, the Foundation seeks a number of declaratory relieves from the Dutch court.

The Company filed their first response to the claim on May 3, 2017 (first docket date), presenting the law firms that will defend these companies and requesting a hearing to discuss some aspects of the case.

On August 23, 2017, a hearing was held at the District Court in Rotterdam ("Court") to establish the timeframe for proceedings. Petrobras (and other defendants) presented preliminary defenses on November 29, 2017 and the Foundation presented its response on March 28, 2018. On June 28, 2018, a hearing was held for the parties to present oral arguments. On September 19, 2018, the Court rendered its interim decision in the motion proceedings in which it accepted jurisdiction in most of 7 claims of the Foundation, without any assessment on the merits of the case.

On April 16, 2019, a hearing was held to present oral arguments on some procedural issues of this Class action.

On January 29, 2020, the Court determined that shareholders who understand Portuguese and / or who bought shares through intermediaries or other agents who understand that language, among other shareholders, are subject to the arbitration clause provided for in the Company's Bylaws, remaining out of the collective action proposed by the Foundation. The Court also considered the binding effect of the agreement signed to close the United States' Class action. In this way, the Foundation needs to demonstrate that it represents a sufficient number of investors to justify pursuing collective action in the Netherlands. The Foundation must answer some questions raised by the Court by May 6, 2020. After the presentation of the answers by the Foundation, Petrobras will have 12 weeks to respond.

This collective action involves complex issues that are subject to substantial uncertainties and depend on a number of factors such as the standing of the Foundation as the alleged representative of the investors' interests, the applicable rules to this complaint, the information produced the evidentiary phase of the proceedings, analysis by experts, the timing of court decisions and rulings by the court on key issues, and the Foundation only seeks declaratory reliefs in this collective action. Currently, it is not possible to determine if the Company will be found responsible for the payment of compensation in subsequent individual complaints after this action as this assessment depends on the outcome of these complex issues. Moreover, it is uncertain which investors will be able to file subsequent individual complaints related to this matter against the Company.

In addition, the allegations asserted are broad, span a multi-year period and involve a wide range of activities, and, at the current stage, the impacts of such allegations are highly uncertain. The uncertainties inherent in all such matters affect the amount and timing of the ultimate resolution of these actions. As a result, the Company is unable to make a reliable estimate of eventual loss arising from this action. The company is victim of the corruption scheme uncovered by the Lava Jato investigation and aims to present and prove this before the Dutch Court.

The uncertainties inherent in all such matters do not enable the company to identify possible risks related to this action. Compensation for the alleged damages will only be determined by court rulings on complaints to be filed by individual investors. The Foundation is not able to demand compensation for damages.

The Company denies the allegations presented by the Foundation and intend to defend themselves vigorously.

19.4.3. Arbitrations in Brazil

Petrobras is also currently a party to 5 arbitration proceedings brought by Brazilian and foreign investors that purchased Petrobras' shares traded in Brazilian Stock Exchange (B3), alleging financial losses caused by facts uncovered in the Lava Jato investigation.

These claims involve complex issues that are subject to substantial uncertainties and depend on a number of factors such as the novelty of the legal theories, the timing of the Chamber of Arbitration decisions, the information produced in discovery and analysis by retained experts.

Moreover, the claims asserted are broad and span a multi-year period. The uncertainties inherent in all such matters affect the amount and timing of their ultimate resolution. As a result, the Company is unable to make a reliable estimate of eventual loss arising from such arbitrations asserted. The Company denies the allegations presented by these investors and intends to defend these claims vigorously.

Depending on the outcome of these complaints, the Company may have to pay substantial amounts, which may cause a significant effect on its financial condition, its financial statements or consolidated cash flow in a certain period.

On September 17, 2019, the Brazilian Federal Supreme Court (STF) abrogated the Commitment Assumption Agreement signed with the Brazilian Prosecutor's Office (MPF). Thus, the Company has no longer the possibility of using half of the amount of US\$ 683 paid on January 30, 2019 to the Brazilian authorities, as provided for in the agreement, in compliance with the subsequently abrogated agreement, in the event of any convictions in these arbitrations. The new allocation of the amount paid is described in the "Allocation Agreement" between the Brazilian Attorney General's Office and the Presidency of the Chamber of Deputies, with the intervention of the Presidency of the Federal Senate and the Attorney General of the National Treasury, which was approved by the STF and whose negotiation was not attended by Petrobras.

19.4.4. Arbitrations in Argentina

On September 11, 2018, Petrobras was served of an arbitral claim filed by Consumidores Financieros Asociación Civil para su Defensa ("Association") against the company and other individuals and legal entities, before the "Tribunal de Arbitraje General de la Bolsa de Comercio de Buenos Aires". Among other issues, the Association alleges Petrobras' liability for a supposed loss of market value of Petrobras' shares in Argentina, due to proceedings related to Lava Jato investigation.

On June 14, 2019, the Company informed that the Chamber of Arbitration recognized the withdrawal of the arbitration due to the fact that the Association had not paid the arbitration fee within the established period. The Association appealed to the Argentine Judiciary against this decision, which was rejected on November 20, 2019. The Association filed a new appeal addressed to the Argentine Supreme Court, pending a final decision.

Petrobras denies the allegations presented by the Association and intends to defend itself vigorously.

19.5. Other arbitrations in Argentina

Petrobras was included as a defendant in criminal actions in Argentina:

- Criminal action related to an alleged fraudulent offer of securities for alleged non-compliance with the obligation to publish "press release" in the Argentine market about the existence of a class action filed by Consumidores Financieros Asociación Civil para su Defensa before the Commercial Court, according to the provisions of the Argentine capital market law. Petrobras was never mentioned in the scope of the referred collective action. Petrobras presented procedural defenses in the criminal action that have not yet been judged by the court. This criminal action is pending before the Criminal Economic Court No. 3 of the city of Buenos Aires;
- Criminal action related to an alleged fraudulent offer of securities, when Petrobras allegedly declared false data in its financial statements prior to 2015. Petrobras presented procedural defenses that have not yet been judged by the court. This criminal action is pending before the Criminal Economic Court No. 2 of the city of Buenos Aires.

19.6. Accounting policy for provisions for legal proceedings and contingent liabilities

Provisions are recognized when: (i) the company has a present obligation as a result of a past event; (ii) it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and (iii) the amount of the obligation can be reliably estimated.

Contingent liabilities are not recognized but are disclosed in explanatory notes when the likelihood of outflows is possible, including those whose amounts cannot be estimated.

The methodology used to estimate the provisions is described in note 4.5.

19.7. Tax recoveries under dispute

19.7.1. Deduction of VAT tax (ICMS) from the basis of calculation of PIS and COFINS

The Company filed complaints against Brazilian Federal Government challenging the constitutionality of the inclusion, from 2001 to 2017, of VAT tax within the calculation basis of PIS and COFINS.

The Brazilian Supreme Court ruled on this matter, on March 2017, determining that such tax must not be included in the computation. However, the Brazilian Federal Government filed a motion to clarification in October 2017, and its assessment by the court is still pending.

The Regional Federal Court ruled in favor to the Company in August 2018, reinforcing the decision of the Brazilian Supreme Court.

The Company is gathering all the amounts involved in this matter, which covers a long period of time, and is not yet able to reasonably estimate this contingent asset prior to the issuance of these financial statements. In January 2019, the Company's appeal was fully upheld to cover the period claimed in the lawsuit. Currently, the appeal filed by the Brazilian Government is awaiting judgment.

Considering that judicial discussions about the methodology for calculating the credit are still pending, the contingent asset could not be estimated.

19.7.2. Accounting policy for contingent assets

Contingent assets are not recognized, but are disclosed in explanatory notes when the inflow of economic benefits is considered probable. However, if the inflow of economic benefits is virtually certain, the related asset is not a contingent asset and it is recognized.

20. Provision for decommissioning costs

Non-current liabilities	Jan-Dec/2019	Jan-Dec/2018
Opening balance	15,133	14,143
Adjustment to provision	5,642	4,129
Transfers related to liabilities held for sale (*)	(3,071)	(1,221)
Payments made	(502)	(481)
Interest accrued	699	649
Others	3	51
Cumulative translation adjustment	(444)	(2,137)
Closing balance	17,460	15,133

(*) In 2018, it includes transfer to held for sale related to Campos basin (US\$ 850); Potiguar basin (US\$ 70) and Lapa field (US\$ 11), as set out in note 7.

The estimates for abandonment and dismantling of oil and natural gas producing properties are revised annually at December 31 along with the annual process of oil and gas reserves certification and whenever an indication of significant change in the assumptions used in the estimates occurs.

In 2019, the adjustment to this provision in the amount of US\$ 5,642 primarily reflects (i) anticipation of timing of abandonments in some projects, (ii) reduction in the risk-adjusted discount rate from 5.17% p.a. in 2018 to 4.22% p.a. in 2019, due to the decrease in the country risk; and (iii) the revision of estimates of wells and equipment costs and the decrease in the average-term of abandonment of some producing fields.

20.1. Accounting policy for decommissioning costs

Decommissioning costs are future obligations to perform environmental restoration, dismantle and remove a facility when the Company terminates its operations due to the exhaustion of the area or economic feasibility. Its most significant asset removal obligations involve removal and disposal of offshore oil and gas production facilities in Brazil and abroad. The Company recognizes these obligations at present value of the expected future cash outflows, using a risk-free discount rate, adjusted to the Company's credit risk. Due to the long periods until the abandonment date, variations in the discount rate can cause large variations in the recognized amount.

These estimates require performing complex calculations that involve significant judgment since: i) the obligations are long-term; ii) the contracts and regulations contain subjective definitions of the removal and remediation practices and criteria involved when the events actually occur; and iii) asset removal technologies and costs are constantly changing, along with regulations, environmental, safety and public relations considerations.

The Company is constantly conducting studies to incorporate technologies and procedures to optimize the process of abandonment, considering industry best practices. However, the timing and amounts of future cash flows are subject to significant uncertainty.

The estimates of decommissioning costs are reviewed annually based on current information on expected costs and recovery plans. When the revision of the estimates results in an increase in the provision for decommissioning costs, there is a corresponding increase in assets. Otherwise, when there is a decrease in the provision, there is a corresponding reduction in assets, without exceeding its book value. Any excess portion is immediately recognized in the statement of income within other expenses.

21. The “Lava Jato (Car Wash) Operation” and its effects on the Company

In the preparation of these annual consolidated financial statements, the Company did not identify any additional information that would affect the adopted calculation methodology to write off, in the third quarter of 2014, US\$ 2,527 of capitalized costs representing overpayments for the acquisition of property, plant and equipment. The Company will continue to monitor these investigations for additional information in order to assess their potential impact on the adjustment made.

The Company has been closely monitoring the investigations and cooperating fully with the Brazilian Federal Police (*Polícia Federal*), the Brazilian Public Prosecutor's Office (*Ministério Público Federal*), the Federal Auditor's Office (*Tribunal de Contas da União – TCU*) and the General Federal Inspector's Office (*Controladoria Geral da União*) in the investigation of all crimes and irregularities.

In addition, the Company has been taking the necessary procedural steps to seek compensation for damages suffered from the improper payments scheme, including those related to its reputation.

To the extent that any of the proceedings resulting from the Lava Jato investigation involve leniency agreements with cartel members or plea agreements with individuals pursuant to which they agree to return funds, the Company may be entitled to receive a portion of such funds. Nevertheless, the Company is unable to reliably estimate further recoverable amounts at this moment. Any recoverable amount will be recognized as income when received or when their economic benefits become virtually certain.

In addition to US\$ 912 recovered from Lava Jato investigation through December 31, 2018 (US\$ 457 in 2018, US\$ 252 in 2017, US\$ 131 in 2016 and US\$ 72 in 2015), new leniency and plea agreements in 2019 entitled the Company to receive funds with respect to compensation for damages in the amount of US\$ 220. This amounts were accounted for as other income and expenses. Thus, the total amount recovered from Lava Jato investigation through December 31, 2019 was US\$ 1,132.

21.1. Investigations involving the Company

21.1.1. U.S. Securities and Exchange Commission and Department of Justice inquiries

On September 27, 2018, the Company settled the open matters with the U.S. Department of Justice (DoJ) and the U.S. Securities and Exchange Commission (SEC) investigation which encompassed the Company's internal controls, books and records, and financial statements from 2003 to 2012.

These agreements fully resolve the inquiries carried out by these authorities. Following this agreement, the Company paid US\$ 85 to the DoJ in 2018 and the same amount to the SEC in the first quarter of 2019. Additionally, the agreements also credit a remittance of US\$ 683 to the Brazilian authorities, which Petrobras deposited in January 2019 into a court deposit account. The Company fully recognized the effects of these settlements as other income and expenses in the third quarter of 2018.

This resolution met the best interest of the Company and its shareholders, and eliminated uncertainties, risks, burdens and costs of potential litigations in the United States.

21.1.2. U.S. Commodity Futures Trading Commission - CFTC

In May 2019, the U.S. Commodity Futures Trading Commission (“CFTC”) contacted Petrobras with an inquiry regarding trading activities related to the Lava Jato Operation. Petrobras reiterates that it continues to cooperate with the regulatory authorities, including the CFTC, regarding any inquiry.

21.1.3. Order of civil inquiry - Brazilian Public Prosecutor's Office

On December 15, 2015, the State of São Paulo Public Prosecutor's Office issued the Order of Civil Inquiry 01/2015, establishing a civil proceeding to investigate the existence of potential damages caused by Petrobras to investors in the Brazilian stock market. The Brazilian Attorney General's Office (*Procuradoria Geral da República*) assessed this civil proceeding and determined that the São Paulo Public

Prosecutor's Office has no authority over this matter, which must be presided over by the Brazilian Public Prosecutor's Office. The Company has provided all relevant information requested by the authorities.

22. Commitment to purchase natural gas

The Company has an active GSA agreement (Gas Supply Agreement) entered into with Yacimientos Petrolíferos Fiscales Bolivianos – YPFB to purchase certain minimum volumes of natural gas at prices linked to the international fuel oil price. This contract will be outstanding until all contracted volume has been delivered, based on an extension clause.

Thus, as of December 31, 2019, the total amount of the GSA for 2020 is nearly 11.01 billion cubic meters of natural gas (equivalent to 30.08 million cubic meters per day) and corresponds to a total estimated value of US\$ 1.82 billion. Based on the aforementioned extension clause, the Company expects purchases to continue through October 2022, on the same volume basis according to current indicators, representing an estimated additional amount of US\$ 5.6 billion, for the period from January 1, 2020 to October 30, 2022.

23. Property, plant and equipment

23.1. By class of assets

	Land, buildings and improvement	Equipment and other assets (*)	Assets under construction (**)	Exploration and development costs (oil and gas producing properties) (***)	Right-of-use assets	Total
Balance at January 1, 2018	6,665	75,002	42,521	52,462	-	176,650
Additions	4	1,751	8,707	6	-	10,468
Additions to / review of estimates of decommissioning costs	-	-	-	4,778	-	4,778
Capitalized borrowing costs	-	-	1,810	-	-	1,810
Write-offs	(61)	(16)	(327)	(27)	-	(431)
Transfers	(93)	13,720	(18,667)	4,086	-	(954)
Depreciation, amortization and depletion	(359)	(6,529)	-	(5,028)	-	(11,916)
Impairment recognition	-	(742)	(250)	(1,686)	-	(2,678)
Impairment reversal	-	309	23	226	-	558
Cumulative translation adjustment	(946)	(7,467)	(4,891)	(7,598)	-	(20,902)
Balance at December 31, 2018	5,210	76,028	28,926	47,219	-	157,383
Cost	7,829	128,711	28,926	77,141	-	242,607
Accumulated depreciation, amortization and depletion	(2,619)	(52,683)	-	(29,922)	-	(85,224)
Balance at December 31, 2018	5,210	76,028	28,926	47,219	-	157,383
Adoption of IFRS 16	-	-	-	-	26,575	26,575
Additions	-	2,784	5,269	145	2,332	10,530
Additions to / review of estimates of decommissioning costs (note 20)	-	-	-	5,497	-	5,497
Capitalized borrowing costs	-	-	1,336	-	-	1,336
Reimbursement under the Transfer of Rights Agreement	-	-	-	(8,319)	-	(8,319)
Write-offs	(3)	(92)	(293)	(407)	(21)	(816)
Transfers	478	6,055	(10,466)	4,879	126	1,072
Transfers to assets held for sale	(803)	(4,942)	(621)	(1,204)	(1,339)	(8,909)
Depreciation, amortization and depletion	(231)	(6,106)	-	(4,756)	(5,019)	(16,112)
Impairment recognition (note 25)	(2)	(1,298)	(1,453)	(743)	(161)	(3,657)
Impairment reversal (note 25)	-	236	80	459	-	775
Cumulative translation adjustment	(199)	(2,287)	(826)	(1,873)	(905)	(6,090)
Balance at December 31, 2019	4,450	70,378	21,952	40,897	21,588	159,265
Cost	6,856	119,993	21,952	70,647	26,440	245,888
Accumulated depreciation, amortization and depletion	(2,406)	(49,615)	-	(29,750)	(4,852)	(86,623)
Balance at December 31, 2019	4,450	70,378	21,952	40,897	21,588	159,265
Weighted average useful life in years	40 (25 to 50) (except land)	20 (3 to 31)		Units of production method	8 (2 to 47)	

(*) It is composed of platforms, refineries, thermoelectric power plants, natural gas processing plants, pipelines, rights of use and other operating, storage and production plants, also including exploration and production assets depreciated based on the units of production method.

(**) See note 31 for assets under construction by operating segment.

(***) It is composed of exploration and production assets related to wells, abandonment and dismantling of areas, signature bonuses associated to proved reserves and other costs directly associated with the exploration and production of oil and gas.

For the year ended December 31, 2019, additions to property, plant and equipment primarily relate to the development of oil and gas production in the pre-salt area, mainly the entry into operation of two new production systems: FPSO P-77, located in the Búzios field; and FPSO P-68, located in the Berbigão field.

At the adoption of IFRS 16, the Company recognized right-of-use assets at an amount equal to the lease liability. The rights-of-use at December 31, 2019 comprise the following underlying assets:

	Platforms	Vessels	Properties	Others	Total
Balance at December 31, 2018					
Adoption of IFRS 16	15,111	9,775	798	891	26,575
Additions	881	1,412	27	12	2,332
Write-offs	-	(11)	(4)	(6)	(21)
Transfers	-	-	-	126	126
Transfers to assets held for sale	(1,037)	-	-	(302)	(1,339)
Depreciation, amortization and depletion	(2,230)	(2,489)	(101)	(199)	(5,019)
Impairment recognition	-	-	-	(161)	(161)
Cumulative translation adjustment	(529)	(352)	(29)	5	(905)
Balance at December 31, 2019	12,196	8,335	691	366	21,588
Cost	14,378	10,698	778	586	26,440
Accumulated depreciation, amortization and depletion	(2,182)	(2,363)	(87)	(220)	(4,852)
Without contractual readjustment clauses	(624)	(1,942)	-	(49)	(2,615)
With contractual readjustment clauses - Brazil	(11)	(308)	(87)	(168)	(574)
With contractual readjustment clauses – abroad	(1,547)	(113)	-	(3)	(1,663)
Balance at December 31, 2019	12,196	8,335	691	366	21,588

23.2. Estimated useful life

Estimated useful life	Buildings and improvements, equipment and other assets		
	Cost	Accumulated depreciation	Balance at December 31, 2019
5 years or less	4,413	(3,248)	1,165
6 - 10 years	9,633	(6,468)	3,165
11 - 15 years	1,200	(562)	638
16 - 20 years	37,176	(17,162)	20,014
21 - 25 years	25,576	(5,272)	20,304
25 - 30 years	9,054	(2,753)	6,301
30 years or more	23,940	(8,827)	15,113
Units of production method	15,687	(7,729)	7,958
Total	126,679	(52,021)	74,658
Buildings and improvements	6,686	(2,406)	4,280
Equipment and other assets	119,993	(49,615)	70,378

23.3. Accounting policy for Property, plant and equipment

Property, plant and equipment are measured at the cost to acquire or construct, including all costs necessary to bring the asset to working condition for its intended use and the estimated cost of dismantling and removing the asset and restoring the site, reduced by accumulated depreciation and impairment losses.

A condition for continuing to operate certain items of property, plant and equipment, such as industrial plants, offshore plants and vessels is the performance of regular major inspections and maintenance. Those expenditures are capitalized if a maintenance campaign is expected to occur, at least, 12 months later. Otherwise, they are expensed when incurred. The capitalized costs are depreciated over the period through the next major maintenance date.

Spare parts are capitalized when they are expected to be used during more than one period and can only be used in connection with an item of property, plant and equipment. These are depreciated over the useful life of the item of property, plant and equipment to which they relate.

Borrowing costs directly attributable to the acquisition or construction of qualifying assets are capitalized as part of the costs of these assets. General borrowing costs are capitalized based on the Company's weighted average cost of borrowings outstanding applied over the balance of assets under construction. Loans directly attributable to the construction of assets are only considered at this average rate when their financial charges are incurred upon completion of the specific construction. In general, the Company suspends capitalization of borrowing to the extent investments in a qualifying asset hibernates during a period greater than one year or whenever the asset is prepared for its intended use.

Assets directly associated to oil and gas production of a contract area without useful life lower than the estimated length of reserves depletion, such as signature bonuses, are depreciated or amortized based on the unit-of-production method.

The unit-of-production method of depreciation (amortization) is computed based on a unit of production basis (monthly production) over the proved developed oil and gas reserves, except for signature bonuses for which unit of production method takes into account the monthly production over the total proved oil and gas reserves on a field-by-field basis.

Assets related to oil and gas production with useful lives shorter than the life of the field; floating platforms and other assets unrelated to oil and gas production are depreciated on a straight-line basis over their useful lives, which are reviewed annually. Note 23.2 provides further information on the estimated useful life by class of assets. Lands are not depreciated.

Right-of-use assets are presented as property, plant and equipment and, according to the useful lives of their respective underlying assets and the characteristics of lease agreements (term, asset transfer or exercise of call option), are depreciated using the straight-line method based on contractual terms.

23.4. Concession for exploration of oil and natural gas – Transfer of Rights Agreement (“Cessão Onerosa”)

On November 1, 2019, Petrobras signed with the Brazilian Federal Government the Amendment to the Transfer of Rights Agreement, which provides for the reimbursement to the Company of US\$ 9,058, as established in the Resolution 5/2019 enacted in April 2019 by the National Energy Policy Council (*Conselho Nacional de Política Energética* – CNPE). The signing of the Amendment occurred prior to the surplus bidding round related to this agreement, after reaching the budget solution for the payment by the Federal Government to Petrobras and after meeting other conditions established by the Company's Board of Directors.

At this signing, the Company recognized accounts receivable offsetting property, plant and equipment, in the amount of US\$ 8,319 (considering the average exchange rate prevailing in the fourth quarter of the year).

On December 11, 2019, the Brazilian Federal Government paid this amount to the Company, bearing interest at SELIC rate from the date of the signing, in the amount of US\$ 43, accounted for as finance income.

Information on the result of the Bidding Round for the Oil Surplus of the Transfer of Rights Agreement is presented in note 24.1.

23.5. Oil and Gas fields operated by Petrobras returned to ANP

In 2019, the following oil and gas fields were returned to ANP: Juruá, Iraúna, Barra do Ipiranga, Lagoa Branca, Nativo Oeste, Jacupemba, Mariricu Oeste, Rio Barra Seca, Rio Itaúnas Leste, Rio São Mateus Oeste and Sul de Sapinhoá. These fields were returned to ANP mainly due to their economic unfeasibility and, as a consequence, the Company wrote off the amount of US\$ 74 in addition to impairments recognized in prior years.

In 2018, the following oil and gas fields were returned to ANP: Japiim, Camarão Norte, part of Espadarte and part of Sibite. These fields were returned to ANP mainly due to their economic unfeasibility and, as a consequence, the Company wrote off the amount of US\$ 0.1 in addition to impairments recognized in prior years.

In 2017, the Mosquito, Siri and Saíra oil and gas fields were returned to ANP also due to economic unfeasibility. However, due to impairment losses recorded for these assets in prior years, these write-offs amounted to US\$ 0.1.

23.6. Capitalization rate used to determine the amount of borrowing costs eligible for capitalization

The capitalization rate used to determine the amount of borrowing costs eligible for capitalization was the weighted average of the borrowing costs applicable to the borrowings that were outstanding during the period, other than borrowings made specifically for the purpose of obtaining

a qualifying asset. For the year ended December 31, 2019, the capitalization rate was 6.40% p.a. (6.35% p.a. for the year ended December 31, 2018).

24. Intangible assets

24.1. By class of assets

	Rights and Concessions	Software	Goodwill	Total
Balance at January 1, 2018	1,801	321	218	2,340
Addition	841	85	-	926
Capitalized borrowing costs	-	4	-	4
Write-offs	(15)	-	-	(15)
Transfers	(42)	6	14	(22)
Amortization	(14)	(98)	-	(112)
Cumulative translation adjustment	(241)	(46)	(29)	(316)
Balance at December 31, 2018	2,330	272	203	2,805
Cost	2,549	1,592	203	4,344
Accumulated amortization	(219)	(1,320)	-	(1,539)
Balance at December 31, 2018	2,330	272	203	2,805
Addition	1,339	74	-	1,413
Concession for exploration of oil and natural gas – Oil Surplus on the Transfer of rights agreement	15,341	-	-	15,341
Capitalized borrowing costs	-	4	-	4
Write-offs	(11)	(6)	-	(17)
Transfers	(83)	(47)	(137)	(267)
Amortization	(10)	(60)	-	(70)
Impairment recognition	(1)	-	-	(1)
Impairment reversal	-	-	-	-
Cumulative translation adjustment	263	5	(3)	265
Balance at December 31, 2019	19,168	242	63	19,473
Cost	19,290	1,469	63	20,822
Accumulated amortization	(122)	(1,227)	-	(1,349)
Balance at December 31, 2019	19,168	242	63	19,473
Estimated useful life in years	(*)	5	Indefinite	

(*) Mainly composed of assets with indefinite useful lives, which are reviewed annually to determine whether events and circumstances continue to support an indefinite useful life assessment.

At December 31, 2019 and 2018, no impairment was identified on goodwill.

Result of the 16th ANP Bidding Round

On October 10, 2019, Petrobras acquired one offshore block in the 16th Bidding Round under the Concession Regime, held by the ANP. Petrobras will hold a 70% stake and will be the operator of the block C-M-477, located in deep waters in the Campos basin, in partnership with BP Energy do Brasil Ltda. The total amount of the signature bonus paid in the last quarter of 2019 was US\$ 348.

Result of Bidding Round for the Surplus Volume of the Assignment Agreement

On November 6, 2019, the ANP held the Bidding Round for the Surplus Volume of the Assignment Agreement, when the Company acquired, in partnership with CNODC Brasil Petróleo e Gás Ltda. (5%) and CNOOC Petroleum Brasil Ltda. (5%), the exploration and production rights of the surplus volume of Búzios field from the Assignment Agreement. The Company will hold a 90% interest and will be the operator of the field, whose signature bonus corresponding to the Company's interest was US\$ 14,912, paid in December 2019. The co-participation agreement should be finalized by September 2021, and until this date, partners in the consortium have the right to acquire an additional 5% interest each or, on the deadline, if the agreement has not been signed with Pré-Sal Petróleo S.A. (PPSA), to leave the consortium.

Petrobras also acquired the exploration and production rights of the surplus volume of Itapu field, whose signature bonus, paid in December 2019, was US\$ 429.

24.2. Exploration rights - production sharing contract

On June 7, 2018, the Company acquired three offshore blocks (*Uirapuru, Dois Irmãos and Três Marias*) in partnership with other companies through the 4th ANP Bidding Round under the production-sharing regime. The Company will be the operator of all these blocks and the total amount of the signature bonus paid by the Company in September 2018 was US\$ 254.

On September 28, 2018, the Company acquired the *Sudoeste de Tartaruga Verde* block through the 5th ANP Bidding Round under the production-sharing regime. The Company offered the minimum profit oil set forth in this bidding and a bonus of US\$ 17 was paid in November 2018.

On November 7, 2019, the ANP held the 6th Bidding Round under the production sharing regime. Petrobras acquired, in partnership with CNODC Brasil Petróleo e Gás Ltda. (20%), the Aram block, located in the Santos Basin. Petrobras will be the operator of the field with an 80% interest. The signature bonus corresponding to the Company's interest was US\$ 982, paid in December 2019.

24.2.1. Accounting policy for intangible assets

Intangible assets are measured at the acquisition cost, less accumulated amortization and impairment losses and comprise rights and concessions, including the signature bonus paid for concessions and production sharing agreements for exploration and production of oil and natural gas (capitalized acquisition costs), public service concessions, trademarks, patents, software and goodwill.

Internally-generated intangible assets are not capitalized and are expensed as incurred, except for development costs that meet the recognition criteria related to the completion and use of assets, probable future economic benefits, and others.

Signature bonuses paid for obtaining concessions for exploration of crude oil and natural gas are initially capitalized within intangible assets and are transferred to property, plant and equipment when the technical and commercial feasibility can be demonstrated. They are not amortized before their transference to property, plant and equipment. In the event of a signature bonus encompassing an area in which exploration activities occur in different locations, a portion of the signature bonus is transferred to property, plant and equipment whenever the technical and commercial feasibility can be demonstrated for a specific location, based on the ratio between the oil in place at this location and total reservoir volume of the area. Intangible assets with a finite useful life, other than amounts paid for obtaining concessions for exploration of oil and natural gas of producing properties, are amortized over the useful life of the asset on a straight-line basis.

Intangible assets with an indefinite useful life are not amortized but are tested annually for impairment. Their useful lives are reviewed annually.

24.3. Exploration rights returned to the Brazilian Agency of Petroleum, Natural Gas and Biofuels - Agência Nacional de Petróleo, Gás Natural e Biocombustíveis (ANP)

In 2019, 12 exploration areas were returned to the ANP, in Sergipe-Alagoas, Potiguar, Recôncavo and Parnaíba basins (9 in 2018 in Recôncavo and Parnaíba basins), totaling US\$ 3 (US\$ 6 in 2018).

25. Impairment

The Company annually tests its assets for impairment or when there is an indication that their carrying amount may not be recoverable. In 2019, impairment losses and reversals were primarily recognized in the last quarter reflecting assets management and updates of mid and long-term assumptions used in the Company's Strategic Plan for the 2020-2024 period, approved on November 27, 2019.

A higher estimate in decommissioning costs of E&P fields contributed significantly to the recognition of impairment losses, notably in CGUs Papa-Terra, in Campos basin, Uruguá group (Uruguá and Tambaú fields), in Santos basin, and CVIT group (Canapu and Golfinho fields), in Espírito Santo basin. This increase is mainly due to: (i) reduction in Brent's projections bringing forward the expected date of abandonment of the producing fields; and (ii) reduction in the discount rate, reflecting an improvement in the yields of the Company's bonds throughout 2019. Such losses were offset by the reversals associated with gains in sales (realized and expected) of producing fields in Brazil.

These losses were partially offset by the effects of reversals relating to the disposal of producing fields in Brasil.

Additionally, impairment losses were recognized due to: the postponing of project to conclude the second refining unit of Abreu e Lima refining plant (RNEST); the decision to discontinue the use of P-37 platform in Marlim field; the sale of the drillship Sonda Vitória 10,000 (NS-30); the investments made due to the Conduct Adjustment Declaration ("TAC") to close the public civil action requesting the environmental licensing of Comperj.

The table below shows the impairment losses, net of reversals, recognized within the statement of income in 2019, 2018 and 2017:

Petróleo Brasileiro S.A. – Petrobras
Notes to the financial statements
(Expressed in millions of US Dollars, unless otherwise indicated)


Assets or CGU by nature (*)	Carrying amount	Recoverable amount (**)	Impairment (***)	Business segment	Comments
2019					
Property, plant and equipment and intangible assets					
Producing properties relating to oil and gas activities in Brazil (several CGUs)	105,532	196,994	1,859	E&P - Brazil	item (a1)
Transpetro's fleet of vessels	1,347	1,453	(103)	RTM - Brazil	item (b1)
Oil and gas production and drilling equipment in Brazil	314	-	307	E&P - Brazil	item (c1)
UFN III	204	-	200	RTM - Brazil	item (d1)
Comperj	330	117	209	RTM - Brazil	item (e1)
Second refining unit in RNEST	1,043	498	534	RTM - Brazil	item (f1)
Oil and gas production and drilling equipment abroad	343	15	333	E&P - Abroad	item (g1)
Others	33	-	67	Several	
			3,406		
Assets classified as held for sale					
Producing properties Pampo and Enchova fields	328	808	(494)	E&P - Brazil	item 25.2
Producing properties Pampo and Frade field	19	105	(84)	E&P - Brazil	item 25.2
Producing properties Pampo and Maromba field	-	68	(67)	E&P - Brazil	item 25.2
PO&G BV	444	354	89	E&P - Abroad	item 25.2
Others	592	468	(2)	Several	
Total			2,848		
2018					
Property, plant and equipment and intangible assets					
Producing properties relating to oil and gas activities in Brazil (several CGUs)	7,019	9,923	524	E&P - Brazil	item (a2)
Transpetro's fleet of vessels	1,721	1,300	428	RTM - Brazil	item (b2)
Oil and gas production and drilling equipment in Brazil	199	6	197	E&P - Brazil	item (c2)
UFN III	312	200	114	RTM - Brazil	item (d2)
Producing properties relating to oil and gas activities Abroad (several CGUs)	2,258	1,554	715	E&P - Brazil	item (h1)
GASFOR II	58	-	59	Gas & Power - Brazil	item (i)
Comperj	46	-	47	RTM - Brazil	item (e2)
Second refining unit RNEST	1,114	1,092	22	RTM - Brazil	item (f2)
Others	666	756	14	Several Segments	
			2,120		
Assets classified as held for sale					
Producing properties relating to oil and gas activities in Riacho da Forquilha	98	459	(34)	E&P - Brazil	
Others	25	109	(81)	Several Segments	
Total			2,005		
2017					
Property, plant and equipment and intangible assets					
Producing properties relating to oil and gas activities in Brazil (several CGUs)	11,826	16,070	(870)	E&P - Brazil	item (a3)
Second refining unit in RNEST	1,716	1,261	464	RTM - Brazil	item (f3)
Fertilizer Plants	412	-	412	Gas & Power - Brazil	item (j)
Oil and gas production and drilling equipment in Brazil	360	4	363	E&P - Brazil	item (c3)
Producing properties relating to oil and gas activities abroad (several CGUs)	215	89	128	E&P - Abroad	item (h2)
Panamax vessels - Transpetro	112	-	112	RTM - Brazil	item (k)
Araucária	70	-	70	Gas & Power - Brazil	item (l)
Comperj	51	-	51	RTM - Brazil	item (e3)
Conecta and DGM	38	-	38	Distribution- Abroad	item (m)
Others	1,863	1,797	68	Several Segments	
			836		
Assets classified as held for sale					
Producing properties relating to oil and gas activities in Roncador	3,164	2,766	405	E&P - Brazil	
Others	317	366	(50)	Several Segments	
Total			1,191		

(*) It only includes carrying amounts and recoverable amounts of impaired assets or assets for which reversals were recognized.

(**) The recoverable amounts of assets for impairment computation were their value in use, except for oil and gas production and drilling equipment that were based on their fair value.

(***) Reversals are presented in brackets.

25.1. Impairment of property, plant and equipment and intangible assets

For impairment testing purposes, the Company bases its cash flow projections on:

- The estimated useful life of the asset or assets grouped into the CGU, based on the expected use of those assets, considering the Company's maintenance policy;
- Assumptions and financial budgets/forecasts approved by management for the period corresponding to the expected life cycle of each different business; and
- Pre-tax discount rates derived from the Company's post-tax weighted average cost of capital (WACC), adjusted by specific risk-premiums in case of projects postponed for an extended period, or specific country-risks, in case of assets abroad. The use of post-tax discount rates in determining value in use does not result in materially different recoverable amounts if pre-tax discount rates had been used.

Information on key assumptions for impairment testing and the definition of Company's CGUs are presented in notes 4.2 and 4.3, respectively.

During 2019, management identified and assessed the following changes in CGUs:

a) CGUs of E&P: (i) Transfer of Rights Agreement group (extinction of this CGU and formation of six new ones - CGU Itapu; CGU Búzios group; CGU Sépia group; CGU Atapu group; CGU Lula group and CGU Berbigão-Sururu group, following the conclusion of the revision of the Transfer of Rights Agreement and the definition of a new business and management model for assets); (ii) Parques da Baleias group (due to the redefinition of the Jubarte field, approved by the ANP, the Baleia Anã and Cacharéu fields remain in this CGU and the Cachalote and Pirambu fields were removed due to the lack of interdependence of these assets in the generation of cash inflows); (iii) North group (excluding the Corvina field and the P-37 platform, both due to the end of the productive useful life);

b) CGU Natural Gas: the sale of 90% of Transportadora Associada de Gás (TAG) resulted in its exclusion as an asset of the CGU; and

c) CGU Energy: with the failure to sell the Termobahia e Termocamaçari thermoelectric plants, the Company's management reversed the classification of assets held for sale to property, plant and equipment. Termobahia plant returned to the CGU due to the perspective of its use by Petrobras and its interdependence in cash generation with the other plants of the CGU, while Termocamaçari plant is now assessed separately due to the lack of perspective of operation.

The cash flow projections used to measure the value in use of the CGUs in 2019 were mainly based on average Brent prices and Brazilian real/U.S. dollar average exchange rate:

2019

	2020	2021	2022	2023	2024	Long term Average
Average Brent (US\$/bbl)	65	65	65	65	65	65
Average Brazilian Real (excluding inflation) - Real /U.S. dollar exchange rate	3.85	3.79	3.75	3.72	3.7	3.6

2018

	2019	2020	2021	2022	2023	Long term Average
Average Brent (US\$/bbl)	66	67	72	75	75	73
Average Brazilian Real (excluding inflation) - Real /U.S. dollar exchange rate	3.64	3.56	3.5	3.46	3.44	3.37

2017

	2018	2019	2020	2021	2022	Long term Average
Average Brent (US\$/bbl)	53	58	66	70	73	71
Average Brazilian Real (excluding inflation) - Real /U.S. dollar exchange rate	3.44	3.47	3.47	3.46	3.49	3.4

Information on the main impairment losses and reversals of property, plant and equipment and intangible assets are described below:

a1) Producing properties in Brazil – 2019

Impairment assessment for producing properties in Brazil resulted in US\$ 1,859 impairment losses. Cash flow projections were based on financial budgets/forecasts approved by management and the post-tax discount rates (excluding inflation) derived from the WACC for the E&P business of 6.7% p.a. at December 31, 2019. This amount comprises:

Impairment losses in the amount of US\$ 2,092, mainly related to the CGUs of Papa-Terra (US\$ 369), Uruguá group (US\$ 344), CVIT group (US\$ 206), Corvina (US\$ 158), Piranema (US\$ 128), Camorim (US\$ 109), Pirambu (US\$ 102), Merluza group (US\$ 98), Miranga group (US\$ 76), Guaricema (US\$ 76) and Água Grande group (US\$ 72), mainly due to the decrease in estimates for the average Brent price on the projection horizon, to higher estimates for future decommissioning costs, due to the reduction in risk-free discount rates, and to changes in the schedule for removal and treatment of oil and gas production facilities;

Impairment reversals totaling US\$ 53 primarily relating to Peroá group (US\$ 30) and Castanhal (US\$ 12), mainly due to gains in the production curve and accelerated depreciation tax benefit related to Repetro's new tax model.

a2) Producing properties in Brazil – 2018

Impairment assessment for producing properties in Brazil under the concession regime for oil and gas resulted in a net reversal of impairment losses of US\$ (103). Cash flow projections were based on financial budgets/forecasts approved by management and the post-tax discount rates (excluding inflation) derived from the WACC for the E&P business of 7.4% p.a. at December 31, 2018. This amount comprises:

Impairment losses totaling US\$ 1,054 primarily related to CGUs Camorim (US\$ 140), Linguado (US\$ 139), Piranema (US\$ 93), Guaricema (US\$ 92), Juruá (US\$ 91), Bicudo (US\$ 83), Caioba (US\$ 61), Pper-1 group (US\$ 49), Garoupinha (US\$ 39), Frade (US\$ 39), Castanhal (US\$ 36) and Papa Terra (US\$ 35). These losses were substantially due to higher estimates of future decommissioning costs driven by costs related to subsea facilities and equipment and depreciation of the Brazilian real against the U.S. dollar.

Reversals of impairment totaling US\$ 530 primarily from the CGUs Cvit group (US\$ 158), Uruguá group (US\$ 151), Ceará Mar group (US\$ 50), Dom João (US\$ 23), Miranga group (US\$ 16), Fazenda Belém group (US\$ 13) and Bijupirá-Salema group (US\$ 13), due to upward revision in the estimated production curves following a review of certain projects investments, as set out in the BMP 2019-2023.

a3) Producing properties in Brazil – 2017

Impairment assessment for producing properties in Brazil under the concession regime for oil and gas resulted in a net reversal of impairment losses of US\$ 870. Cash flow projections were based on financial budgets/forecasts approved by management and the post-tax discount rates (excluding inflation) derived from the WACC for the E&P business of 7.6% p.a. at December 31, 2017. This amount comprises:

- Reversals of impairment totaling US\$ 1,733 primarily from North group (US\$ 912), *Espadarte and Papa-Terra* fields (US\$ 125 and US\$ 122), *Uruguá* group (US\$ 100), *Pampo* field (US\$ 91), *Fazenda Alegre* group (US\$ 45), *Cidade de São Mateus* group (US\$ 44), *Riachuelo* field (US\$ 40), *Fazenda Imbé* group (US\$ 28), *Fazenda Bálamo* field (US\$ 26), *Peroá* group (US\$ 25), *São Mateus* group (US\$ 19) and *Riacho da Forquilha* field (US\$ 18). These reversals substantially reflected the lower post-tax real discount rate, the approval of investments in enhancing recovery of mature fields and the lower tax burden set forth in the new tax rules applicable to the oil and gas industry (see note 21.4).
- Impairment losses totaling US\$ 863 mainly related to CGUs *Piranema* (US\$ 227), *Salgo* (US\$ 104) *Ceara Mar* group (US\$ 95), *Cvit* group (US\$ 63), *Miranga* group (US\$59), *Fazenda Belém* group (US\$ 49), *Frade* (US\$ 40) *Dom João* (US\$ 27) and *Candeias* (US\$ 18). These losses were substantially driven by an expected acceleration of production cessation reflecting an optimization of investment portfolio, as well as by a lower risk-adjusted discount rate for decommissioning costs, which also increased the costs of assets related to the abandonment and dismantling of these areas.

b1) Transpetro's fleet of vessels – 2019

The depreciation of Reais against U.S. Dollars used in the projections of the Strategic Plan 2020-2024, compared to the assumptions used in the previous plan, had a positive effect on the cash generation projected in Reais for the CGU, given that freight rates (cash inflows) are quoted in U.S. dollars. Thus, a US\$ 103 reversal of impairment was accounted for in 2019. The post-tax discount rate (excluding inflation) in constant currency applied to the transportation sector ranged from 4.3% p.a. to 5.8% p.a.

b2) Transpetro's fleet of vessels – 2018

The lower freight rates projected in PNG 2019-2023 significantly affected impairment assessment of the Transpetro's fleet of vessels, resulting in the recognition of impairment losses in the amount of US\$ 428 in 2018. The post-tax discount rates (excluding inflation) applied to the transportation sector ranged from 3.8% p.a. to 6.6% p.a.

c1) Oil and gas production and drilling equipment in Brazil – 2019

The Company decided to discontinue the use of P-37 platform in Marlim field, resulting in its exclusion of North group and its independent assessment for impairment, resulting in losses in the amount of US\$ 307.

c2) Oil and gas production and drilling equipment in Brazil – 2018

In 2018, impairment losses for oil and gas production and drilling equipment in Brazil that were not directly related to oil and gas producing properties amounted to US\$ 197, as a result of: i) ceased operation of the single buoy mooring Monobóia 2 – PDET (US\$ 172); ii) lower fair value of certain equipment related to the FPSO P-72 and P- 73 that could not be committed to other projects, when compared to their carrying amount (US\$ 24).

c3) Oil and gas production and drilling equipment in Brazil – 2017

In 2017, impairment losses amounted to US\$ 363 as a result of: i) lower fair value of certain equipment related to the FPSO P-72 and P- 73 that could not be committed to other projects, when compared to their carrying amount (US\$ 127); ii) decommissioning of a crane and launch ferry (US\$ 114) and iii) hibernation of equipment of Inhaúma Shipyard excluded from the initial scope of Inhauma logistic center (US\$ 125).

d1) Fertilizer Plant - UFN III – 2019

Following the Company's decision to quit the conclusion of this plant, this asset was written-off, in the amount of US\$ 200.

d2) Fertilizer Plant - UFN III – 2018

An impairment loss of US\$ 114 was recognized for the fertilizer plant UFN III (*Unidade de Fertilizantes e Nitrogenados III*) due to its lower fair value.

e1) Comperj - 2019

Impairment losses amounted to US\$ 209, the investments made due to the Conduct Adjustment Declaration ("TAC") to close the public civil action requesting the environmental licensing of Comperj, as well as to the investments made in the first refining unit facilities of Comperj, which are part of the infrastructure for transporting and processing natural gas from the pre-salt layer in the Santos Basin.

e2) Comperj - 2018

As set forth in BMP 2019-2023, the resumption of the Comperj project still depends on new partnerships. However, the construction of Comperj's first refining unit facilities that will also support the natural gas processing plant (UPGN) are in progress as the facilities are part of the infrastructure for transporting and processing natural gas from the pre-salt layer in the Santos Basin. Nevertheless, due to the interdependence between such infrastructure and Comperj first refining unit, the Company recognized additional impairment charges, totaling US\$ 47 in 2018.

e3) Comperj - 2017

In 2017, the resumption of the Comperj project was still depending on new partnerships. Accordingly, due to the same aforementioned reasons, the Company recognized impairment charges, in 2017, totaling US\$ 51.

f1) Second refining unit in RNEST – 2019

The cash flows to measure the value in use of the second refining unit in RNEST take into account the postponing of the beginning of the operation to three years and eight months, triggering impairment losses in the amount of US\$ 534. The real discount rate applied was 7.8% p.a. post-tax discount rate derived from the WACC for the refining business, reflecting a specific risk premium for the postponed project.

f2) Second refining unit in RNEST – 2018

The impairment assessment over the second refining unit in RNEST resulted in the recognition an impairment loss amounting to US\$ 22, as its start-up was postponed by five months. The real discount rate applied was 7.3% p.a. post-tax discount rate derived from the WACC for the refining business, reflecting a specific risk premium for the postponed project.

f3) Second refining unit in RNEST - 2017

An impairment loss of US\$ 464 was recognized for the second refining unit in RNEST. Cash flow projections were based on: financial budgets/forecasts approved by Management; and an 7.7% p.a. post-tax discount rate (excluding inflation) derived from the WACC for the refining business, reflecting a specific risk premium for the postponed project. The impairment loss was mainly attributable to: (i) higher costs of raw materials and ii) lower refining margin, as set forth in BMP 2018-2022.

g1) Oil and gas production and drilling equipment abroad - 2019

In January 2020, the sale of drillship Sonda Vitória 10,000 (NS-30), owned by Drill Ship International B.V. - DSI, a subsidiary of PIB BV, was closed. Thus, impairment losses in the amount of US\$ 333 were reconized, due to the difference between the expected sale value and its carrying amount.

h1) Producing properties abroad – 2018

The Company recognized an impairment loss in the amount of US\$ 715 with respect to producing properties of oil and gas activities in the Gulf of Mexico. The impairment loss was primarily driven by changes in operational assumptions and discount rate considering the terms of the agreement between the Company and Murphy Oil Corporation in order to establish a joint venture through such assets.

h2) Producing properties abroad – 2017

In 2017, impairment losses of US\$ 128 were recognized for E&P assets located in the United States, principally reflecting the expected cessation of production and definitive abandonment of operation in Hadrian South field. Cash flow projection were based on: financial budgets/forecasts approved by Management; 5.7% p.a. post-tax real discount rate (5.5% p.a. in 2016) derived from the WACC for the E&P business in United States.

i) GASFOR II – 2018

Management decided to halt the development of the GASFOR II project, carried out by TAG, for an extended period. Accordingly, this asset was excluded from the Natural Gas CGU and its impairment test was performed separately. Due to its halt, it is not possible to estimate future cash flows arising from the use of this asset, resulting in the recognition of impairment losses in the amount equal to the carrying amount thereof (US 59).

j) Fertilizer Plants - 2017

The Company decided to halt its operations in the fertilizer plants Camaçari-BA (FAFEN-BA) and Laranjeiras-SE (FAFEN-SE), following its plans to optimize its investment portfolio as set out in BMP 2018-2022, thereby, being removed from the Gas & Power CGU, assessed for impairment separately and their cash flow projections for the period covered by the BMP 2018-2022 were not able to be estimated. Accordingly, an impairment loss amounting to US\$ 412 was recognized in 2017 with respect to these fertilizer plants.

k) Panamax vessels – Transpetro - 2017

In December 2017, the decision to hibernate the construction of three vessels of PANAMAX project (EI-512, EI-513 and EI-514) triggered their removal from the Transpetro's fleet of vessels CGU. These assets were assessed for impairment separately and, as a result, the Company accounted for an impairment loss for the total carrying amounts of these assets (US\$ 112).

l) Araucária - 2017

Indications of impairment were identified during this period, such as lower sales volume and prices, as well as higher production costs. Therefore, the Company assessed the related assets for impairment and, as a result, an impairment charge of US\$ 70 was recognized primarily in the second quarter of 2017 due to negative cash flow projections that were based on financial budget and forecasts approved by the management and a post-tax real discount rate of 6.6% p.a. derived for the weighted average cost of capital (WACC) for the fertilizer business.

i) Conecta and DGM – 2017

Following prices forecast and current agreements of natural gas supply in Uruguay, the Company recognized impairment losses for intangible assets and property, plant and equipment, in the amount of US\$ 38, with respect to concession agreements for natural gas distribution carried out by the subsidiaries Conecta and DGM.

25.1.1. Assets most sensitive to future impairment

Whenever the recoverable amount of an asset or CGU falls below the carrying amount, an impairment loss is recognized to reduce the carrying amount to the recoverable amount. The following table presents the assets and CGU most sensitives to future impairment losses, presenting recoverable amounts up to 10% higher than their current carrying amount. Changes in material assumptions for impairment testing may result in the recognition of additional impairment charges on such assets in future periods.

12.31.2019				
	Business segment	Carrying amount	Recoverable amount	Sensitivity (*)
Producing properties relating to oil and gas activities in Brazil (7 CGUs)	E&P	10,149	10,626	(585)
Thermoelectric plants	G&P	1,948	2,051	(102)

(*) It is based on a 10% reduction in the recoverable amount of CGUs.

25.1.2. Accounting policy for impairment of property, plant and equipment and intangible assets

Property, plant and equipment and intangible assets with definitive lives are tested for impairment when there is an indication that the carrying amount may not be recoverable. Assets are assessed for impairment at the smallest identifiable group that generates largely independent cash inflows from other assets or groups of assets (CGU). Note 4.3 presents detailed information about the Company's CGUs.

Assets related to development and production of oil and gas assets (fields or group of fields) that have indefinite useful lives, such as goodwill, are tested for impairment annually, irrespective of whether there is any indication of impairment.

Considering the existing synergies between the Company's assets and businesses, as well as the expectation of the use of its assets for their remaining useful lives, value in use is generally used by the Company for impairment testing purposes. When specifically indicated, the Company assesses differences between its assumptions and assumptions that would be used by market participants in the determination of the fair value of an asset or CGU.

Value in use is estimated based on the present value of the risk-adjusted (for specific risks) future cash flows expected to arise from the continuing use of an asset or cash-generating unit, discounted at pre-tax discount rates obtained from the Company's post-tax weighted average cost of capital (WACC). Cash flow projections are mainly based on the following assumptions: foreign exchange rates and prices

based on the Company's most recent strategic plan; production curves associated with existing projects in the Company's portfolio, operating costs reflecting current market conditions, and investments required for carrying out the projects.

Reversal of previously recognized impairment losses may occur for assets other than goodwill.

25.2. Assets classified as held for sale

In 2019, as a result of the Company's Board of Director approvals for the sale of several assets of the E&P segment, according to note 30, the Company recognized reversals in the amount of US\$ 558, considering the net fair value of disposal expenses, mainly in the following assets:

. Pampo and Enchova Project - 10 concessions located in shallow waters in the Campos Basin with impairment reversal of US\$ 494 in Badejo, Bicudo, Linguado, Pampo and Trilha fields;

. Bispo Project – impairment reversal in the amount of US\$ 84 in Frade field;

. Mangalarga 2 Project - impairment reversal in the amount of US\$ 67 in Maromba field;

. PO&G B.V. - Sale of Petrobras Oil & Gas B.V. (PO & GBV), a subsidiary of PIB BV, with impairment losses in the amount of US\$ 89;

In 2018, following the Company's Board of Director approvals for the disposal of certain assets, impairment reversals were accounted for amounting to US\$ 115 for assets held for sale, including the effects arising from the sale of onshore producing fields located in Potiguar basin.

In 2017, impairment losses amounting to US\$ 355 on assets held for sale were primarily attributable to the sale of 25% interest in Roncador field.

The accounting policy for assets and liabilities held for sale is set out in note 30.4.

25.3. Investments in associates and joint ventures (including goodwill)

Value in use is generally used for impairment test of investments in associates and joint ventures (including goodwill). The basis for estimates of cash flow projections includes: projections covering a period of 5 to 12 years, zero-growth rate perpetuity, budgets, forecasts and assumptions approved by management and a post-tax discount rate derived from the WACC or the Capital Asset Pricing Model (CAPM), when applicable.

25.3.1. Accounting policy for impairment of associates and joint ventures

Investments in associates and joint ventures are tested individually for impairment. When performing impairment testing of an equity-accounted investment, goodwill, if it exists, is also considered part of the carrying amount to be compared to the recoverable amount.

Except when specifically indicated, value in use is generally used by the Company for impairment testing purposes in proportion to the Company's interests in the present value of future cash flow projections via dividends and other distributions.

25.3.2. Investment in publicly traded associate

Braskem S.A.

Braskem's shares are publicly traded on stock exchanges in Brazil and abroad. As of December 31, 2019, the quoted market value of the Company's investment in Braskem was US\$ 2,223 based on the quoted values of both Petrobras' interest in Braskem's common stock (47% of the outstanding shares), and preferred stock (22% of the outstanding shares). However, there is extremely limited trading of the common shares, since non-signatories of the shareholders' agreement hold only approximately 3% of the common shares.

Given the operational relationship between Petrobras and Braskem, the recoverable amount of the investment for impairment testing purposes was determined based on value in use, considering future cash flow projections and the manner in which the Company can derive value from this investment via dividends and other distributions to arrive at its value in use. As the recoverable amount was higher than the carrying amount, no impairment losses were recognized for this investment.

Cash flow projections to determine the value in use of Braskem were based on the following key assumptions:

- Estimated average exchange rate of R\$ 3.85 to U.S.\$1.00 in 2019 (converging to R\$ 3.60 in the long-term);

- Average Brent crude oil price at US\$ 65 in 2020, same price in the long-term;
- Prices of feedstock and petrochemical products reflecting projected international prices;
- Petrochemical products sales volume estimates reflecting projected Brazilian and global G.D.P growth;
- Post-tax real discount rate (excluding inflation) of 8.9%p.a., considering cash flows from dividends; and
- Increases in the EBITDA margin during the growth cycle of the petrochemical industry in the next years and declining in the long-term.

BR Distribuidora

In July 2019, Petrobras further reduced its stake in BR Distribuidora in a follow-on secondary offering of its shares, following which BR Distribuidora became an associate. The equity-accounted investment in BR Distribuidora at December 31, 2019 amounted to US\$ 2,684, equivalent to US\$ 6.14 (R\$ 24.76) per common share. Information on the market value since the date of the transaction presents the following values per common share:

- On December 30, 2019 – US\$ 7.46
- Average through the period – US\$ 6.87
- Highest quotation in the period – US\$ 7.55 (December 27, 2019)
- Lowest quotation in the period – US\$ 6.45 (July 23, 2019)

As the fair value of BR is higher than the investment accounted for on the period, the Company estimate this investment is recoverable.

25.3.3. Investments in state-controlled natural gas distributors

In 2019, impairment assessments on investments in state-controlled natural gas distributors did not give rise to any indication that these assets would be impaired, which carrying amount is US\$ 1,313. Post-tax real discount rate (excluding inflation) used in such assessment was 5.3% p.a..

25.3.4. Impairment losses on equity-method investments

In 2019, the Company recognized an impairment loss of US\$ 4 as results in equity-accounted investments.

In 2018, the Company accounted for a US\$ 28 reversal of impairment losses previously recognized as results in equity-accounted investments, substantially attributable to POGBV and Riograndense refinery (RPR).

In 2017, the Company recognized an impairment loss of US\$ 20 as results in equity-accounted investments, substantially attributable to the investees Logum, Belém Bioenergia Brasil and Refinaria de Petróleo Riograndense.

26. Exploration and evaluation of oil and gas reserves

The exploration and evaluation activities include the search for oil and gas reserves from obtaining the legal rights to explore a specific area to the declaration of the technical and commercial viability of the reserves.

Changes in the balances of capitalized costs directly associated with exploratory wells pending determination of proved reserves and the balance of amounts paid for obtaining rights and concessions for exploration of oil and natural gas (capitalized acquisition costs) are set out in the following table:

Capitalized Exploratory Well Costs / Capitalized Acquisition Costs (*)	12.31.2019	12.31.2018
Property plant and equipment		
Opening Balance	4,132	4,522
Additions to capitalized costs pending determination of proved reserves	510	379
Capitalized exploratory costs charged to expense	(216)	(10)
Transfers upon recognition of proved reserves	-	(95)
Cumulative translation adjustment	(164)	(664)
Closing Balance	4,262	4,132
Intangible Assets (**)	18,919	1,980
Capitalized Exploratory Well Costs / Capitalized Acquisition Costs	23,181	6,112

(*) Amounts capitalized and subsequently expensed in the same period have been excluded from this table.

(**) The signature bonuses related to the results of the 16th ANP bidding round and Surplus Oil of Transfer of Rights Agreement are described in note 24.

Exploration costs recognized in the statement of income and cash used in oil and gas exploration and evaluation activities are set out in the following table:

	2019	2018 Reclassified	2017 Reclassified
Exploration costs recognized in the statement of income			
Geological and geophysical expenses	477	330	361
Exploration expenditures written off (includes dry wells and signature bonuses)	308	87	279
Contractual penalties	4	91	152
Other exploration expenses	10	16	8
Total expenses	799	524	800
Cash used in :			
Operating activities	485	346	371
Investment activities	17,265	1,273	1,794
Total cash used	17,750	1,619	2,165

For the year ended December 31, 2019, the Company recognized a provision in the amount of US\$ 4 (US\$ 91 in US\$ 2018 and US\$ 152 in 2017) arising from potential contractual penalties for non-compliance with minimum percentages of local content in 125 blocks for which the exploratory phases were concluded.

26.1. Accounting policy for exploration and evaluation of oil and gas reserves

The costs incurred in connection with the exploration, appraisal and development of crude oil and natural gas production are accounted for using the successful efforts method of accounting, as set out below:

- Geological and geophysical costs related to exploration and appraisal activities incurred until economic and technical feasibility can be demonstrated are expensed.
- Amounts paid for obtaining concessions for exploration of crude oil and natural gas (capitalized acquisition costs) are initially capitalized as intangible assets and are transferred to property, plant and equipment once the technical and commercial feasibility can be demonstrated.
- Costs directly attributable to exploratory wells, including their equipment and installations, pending determination of proved reserves are capitalized within property, plant and equipment. In some cases, exploratory wells have discovered oil and gas reserves, but at the moment the drilling is completed they are not yet able to be classified as proved. In such cases, the expenses continue to be capitalized

if the well has found a sufficient quantity of reserves to justify its completion as a producing well and progress on assessing the reserves and the economic and operating viability of the project is under way. An internal commission of technical executives of the Company reviews these conditions monthly for each well, by analysis of geoscience and engineering data, existing economic conditions, operating methods and government regulations. For additional information on proved reserves estimates, see note 4.1.

- Costs related to exploratory wells drilled in areas of unproved reserves are charged to expense when determined to be dry or uneconomic by the aforementioned internal commission.

- Costs related to the construction, installation and completion of infrastructure facilities, such as drilling of development wells, construction of platforms and natural gas processing units, construction of equipment and facilities for the extraction, handling, storing, processing or treating crude oil and natural gas, pipelines, storage facilities, waste disposal facilities and other related costs incurred in connection with the development of proved reserve areas are capitalized within property, plant and equipment.

26.2. Aging of Capitalized Exploratory Well Costs

The following tables set out the amounts of exploratory well costs that have been capitalized for a period of one year or more after the completion of drilling, the number of projects whose costs have been capitalized for a period greater than one year, and an aging of those amounts by year (including the number of wells relating to those costs):

Aging of capitalized exploratory well costs (*)

	2019	2018
Exploratory well costs capitalized for a period of one year	219	85
Exploratory well costs capitalized for a period greater than one year	4,043	4,047
Total capitalized exploratory well costs	4,262	4,132
Number of projects relating to exploratory well costs capitalized for a period greater than one year	43	49

	Capitalized costs (2019)	Number of wells
2018	54	1
2017	48	1
2016	292	4
2015	852	14
2014 and previous years	2,797	46
Exploratory well costs that have been capitalized for a period greater than one year	4,043	66

(*) Amounts paid for obtaining rights and concessions for exploration of oil and gas (capitalized acquisition costs) are not included.

Exploratory well costs that have been capitalized for a period greater than one year since the completion of drilling amount to US\$ 4,047. Those costs relate to 43 projects comprising (i) US\$3,834 for wells in areas in which there has been ongoing drilling or firmly planned drilling activities in the near term and for which an evaluation plan (“*Plano de Avaliação*”) has been submitted for approval by ANP; and (ii) US\$213 relate to costs incurred to evaluate the reserves and their potential development.

27. Collateral for crude oil exploration concession agreements

The Company has granted collateral to ANP in connection with the performance of the Minimum Exploration Programs established in the concession agreements for petroleum exploration areas in the total amount of US\$ 2,801 of which US\$ 2,042 were still in force as of December 31, 2019, net of commitments undertaken. The collateral comprises crude oil from previously identified producing fields, pledged as collateral, amounting to US\$ 1,639 and bank guarantees of US\$ 403.

28. Joint ventures in E&P activities

In line with its strategic objectives, Petrobras operates in association with other companies in joint ventures in Brazil as holder of oil and natural gas exploration and production rights in concessions and production sharing regimes.

As of December 31, 2019, the Company holds interests in 112 joint ventures in partnership with 42 partners, among which Petrobras is the operator in 64 (in 2018, 124 joint ventures, with 44 partners and operator in 72). The partnerships formed in 2018 and 2019 are described below:

Consortium	Location	% Petrobras	% Partners	Operator	Year	Additional Information	ANP Bonus Petrobras portion
Tartaruga Verde Módulo III Espadarte Búzios	Campos Basin	50%	Petronas – 50%	Petrobras	2019	Concession – Disposal of 50% to Petronas	N/A
	Santos basin pre-salt	90%	CNODC – 5% CNOOC – 5%	Petrobras	2019	Production sharing – Transfer of Rights Surplus Production ANP Bidding Round	14,912
C-M-477	Campos Basin	70%	BP – 30%	Petrobras	2019	Concession - 16ª ANP Bidding Round	348
Aram	Santos basin pre-salt	80%	CNODC – 20%	Petrobras	2019	Production sharing - 6ª ANP Bidding Round	982
Roncador	Campos Basin	75%	Equinor – 25%	Petrobras	2018	Concession – Disposal of 25% to Equinor	N/A
Uirapuru	Santos basin pre-salt	30%	ExxonMobil – 28% Equinor – 28% Petrogal – 14%	Petrobras	2018	Production sharing - 4ª ANP Bidding Round	201
Dois Irmãos	Campos basin pre-salt	45%	BP – 30% Equinor – 25%	Petrobras	2018	Production sharing - 4ª ANP Bidding Round	46
Três Marias	Santos basin pre-salt	30%	Shell – 40%	Petrobras	2018	Production sharing - 4ª ANP Bidding Round	8
C-M-657	Campos Basin	30%	Chevron – 30%	Petrobras	2018	Concession - 15ª ANP Bidding Round	162
C-M-709	Campos Basin	40%	Exxon – 40%	Petrobras	2018	Concession - 15ª ANP Bidding Round	152
C-M-789	Campos Basin	30%	Equinor – 20% Exxon – 40%	Exxon	2018	Concession - 15ª ANP Bidding Round	215
C-M-753	Campos Basin	30%	Qatar – 30%	Exxon	2018	Concession - 15ª ANP Bidding Round	25
POT-M-859	Potiguar basin	60%	Exxon – 40%	Petrobras	2018	Concession - 15ª ANP Bidding Round	5
POT-M-952			Qatar – 30%				
Lapa (BM-S-9A)	Santos basin pre-salt	10%	Shell – 40%	Total	2018	Concession - Disposal of 35% to Total	N/A
			Total – 35% Shell – 30% Repsol Sinopec – 25%				
Iara (BM-S-11A)	Santos basin pre-salt	42,50%	Shell – 25% Total – 22,50% Petrogal – 10%	Petrobras	2018	Concession - Disposal of 22,50% to Total	N/A

Partnerships brings benefits through risk sharing, increased investment capacity, technical and technological interchange, aiming at the growth in oil and gas production. The following table presents the production referring to Petrobras's participation in the joint ventures in which it is an operator:

Field	Location	% Petrobras	% Partners	Operator	Petrobras production portion in 2019 (boed)	Regime
Lula	Santos basin pre-salt	67,50%	Shell – 23,2% Petrogal – 9,3%	Petrobras	768.225	Concession
Roncador	Campos basin	75%	Equinor – 25%	Petrobras	144.870	Concession
Sapinhoá	Santos basin pre-salt	45%	Shell – 30% Repsol Sinopec – 25%	Petrobras	134.666	Concession
Albacora Leste	Campos basin	90%	Repsol Sinopec – 10%	Petrobras	20.010	Concession
Mero	Santos basin pre-salt	40%	Total – 20% Shell – 20% CNODC – 10% CNOOC – 10%	Petrobras	17.326	Production sharing
Papa-Terra	Campos basin	62,50%	Chevron – 37,5%	Petrobras	10.911	Concession
Manati	Camamu basin	35%	Enauta Energia S.A. – 45% Brasoil – 10% Geopark – 10%	Petrobras	7.903	Concession
Berbigão	Santos basin pre-salt	42,50%	Shell – 25% Total – 22,5% Petrogal – 10%	Petrobras	765	Concession

28.1. Accounting policy for joint operations

The E&P partnerships are classified as joint operations, where the Company recognizes according to its interests: i) its assets, including its stake in any assets held jointly ii) its liabilities, including its stake in any liabilities assumed jointly; iii) its sales revenues corresponding to the proportion of its participation in the production resulting from the joint operation; iv) its portion on sales revenues realized directly by the joint operation; and v) its expenses, including the portion of any expenses incurred together.

Assets, liabilities, revenues and expenses relating to the participation in a joint operation are accounted for in accordance with the specific accounting policies applicable to assets, liabilities, revenues and expenses.

28.2. Unitization Agreements

Since 2018, Petrobras has entered into Production Individualization Agreements (*Acordos de Individualização da Produção* - AIPs) with Pré-Sal Petróleo S.A. (PPSA) and the Company's partners (Shell, Petrogal, Repsol and Total) in certain E&P consortiums, submitting these agreements to ANP for approval. As of December 31, 2019, a US\$ 113 provision is accounted for within other current liabilities. These agreements provide for cost equalization and production volumes referring to the Berbigão, Sururu, Atapu and Albacora Leste fields. During 2019, Petrobras paid US\$ 92 relating to these agreements.

The table below presents the effects of the agreements:

	12.31.2019	12.31.2018
Opening balance	159	49
Additions/(Write-offs) on PP&E	50	(62)
Indexation charges	4	2
Payments made	(92)	(100)
Other income and expenses	(2)	279
Cumulative translation adjustments	(6)	(9)
Closing balance	113	159

28.3. Accounting Policy for unitization agreements

A unitization agreement occurs when a reservoir extends across two or more license or contract areas. In this case, partners pool their individual interests in return for an interest in the overall unit and determine their new stake in the single producing unit.

Events that occurred prior to the unitization agreement may lead to the need for compensation between the partners. At the signing of the AIP, an amount to be reimbursed to the Company will be recognized as an asset only when there is a contractual right to reimbursement or when the reimbursement is practically certain. An amount to be reimbursed by the Company will be recognized as a liability when it derives from a contractual obligation or, when the outflow of funds is deemed probable and the amount can be reliably estimated.

29. Investments

29.1. Information on direct subsidiaries, joint arrangements and associates

	Main business segment	% Petrobras' ownership	% Petrobras' voting rights	Shareholders' equity (deficit)	Net income (loss) for the year	Country
Subsidiaries						
Petrobras International Braspetro - PIB BV (i)	Several	100.00	100.00	41,150	2,350	Netherlands
Petrobras Transporte S.A. - Transpetro	RT&M	100.00	100.00	884	155	Brazil
Petrobras Logística de Exploração e Produção S.A. - PB-LOG	E&P	100.00	100.00	907	232	Brazil
Petrobras Gás S.A. - Gaspetro	Gas & Power	51.00	51.00	538	89	Brazil
Petrobras Biocombustível S.A.	Corporate, others	100.00	100.00	314	62	Brazil
Liquigás Distribuidora S.A.	RT&M	100.00	100.00	243	31	Brazil
Araucária Nitrogenados S.A.	Gas & Power	100.00	100.00	(69)	(138)	Brazil
Termomacacé Ltda.	Gas & Power	100.00	100.00	104	40	Brazil
Braspetro Oil Services Company - Brasoil (i)	Corporate, others	100.00	100.00	107	1	Cayman Islands
Breitener Energética S.A.	Gas & Power	93.66	93.66	177	(17)	Brazil
Termobahia S.A.	Gas & Power	98.85	98.85	155	20	Brazil
Baixada Santista Energia S.A.	Gas & Power	100.00	100.00	76	3	Brazil
Petrobras Comercializadora de Energia Ltda. - PBEN	Gas & Power	100.00	100.00	26	5	Brazil
Fundo de Investimento Imobiliário RB Logística - FII	E&P	99.20	99.20	22	12	Brazil
Petrobras Negócios Eletrônicos S.A. - E-Petro	Corporate, others	100.00	100.00	11	2	Brazil
Termomacacé Comercializadora de Energia Ltda	Gas & Power	100.00	100.00	3	-	Brazil
5283 Participações Ltda.	Corporate, others	100.00	100.00	-	-	Brazil
Transportadora Brasileira Gasoduto Bolívia - Brasil S.A. - TBG	Gas & Power	51.00	51.00	142	53	Brazil
Joint operations						
Fábrica Carioca de Catalizadores S.A. - FCC	RT&M	50.00	50.00	59	12	Brazil
Ibiritermo S.A.	Gas & Power	50.00	50.00	32	8	Brazil
Joint ventures						
Logum Logística S.A.	RT&M	30.00	30.00	259	(19)	Brazil
Cia Energética Manauara S.A.	Gas & Power	40.00	40.00	49	7	Brazil
Petrocoque S.A. Indústria e Comércio	RT&M	50.00	50.00	48	18	Brazil
Refinaria de Petróleo Riograndense S.A.	RT&M	33.20	33.20	19	8	Brazil
Brasympe Energia S.A.	Gas & Power	20.00	20.00	19	3	Brazil
Brentech Energia S.A.	Gas & Power	30.00	30.00	23	1	Brazil
Metanol do Nordeste S.A. - Metanor	RT&M	34.54	34.54	12	5	Brazil
Eólica Mangue Seco 1 - Geradora e Comercializadora de Energia Elétrica S.A.	Gas & Power	49.00	49.00	5	-	Brazil
Eólica Mangue Seco 2 - Geradora e Comercializadora de Energia Elétrica S.A.	Gas & Power	51.00	51.00	9	-	Brazil
Eólica Mangue Seco 3 - Geradora e Comercializadora de Energia Elétrica S.A.	Gas & Power	49.00	49.00	10	-	Brazil
Eólica Mangue Seco 4 - Geradora e Comercializadora de Energia Elétrica S.A.	Gas & Power	49.00	49.00	11	1	Brazil
Companhia de Coque Calcinado de Petróleo S.A. - Coquepar	RT&M	45.00	45.00	-	-	Brazil
Participações em Complexos Bioenergéticos S.A. - PCBIOS	Corporate, others	50.00	50.00	-	-	Brazil
Associates						
Sete Brasil Participações S.A. (iii)	E&P	5.00	5.00	(6,662)	(29)	Brazil
Fundo de Investimento em Participações de Sondas - FIP Sondas	E&P	4.59	4.59	-	-	Brazil
Braskem S.A. (iv)	RT&M	36.20	47.03	1,840	70	Brazil
UEG Araucária Ltda.	Gas & Power	18.80	18.80	83	(22)	Brazil
Petrobras Distribuidora S.A. - BR (iv)	Corporate, others	37.50	37.50	2,382	313	Brazil
Transportadora Associada de Gás S.A. - TAG	Gas & Power	10.00	10.00	2,438	535	Brazil
Deten Química S.A.	RT&M	27.88	27.88	124	19	Brazil
Energética SUAPE II	Gas & Power	20.00	20.00	99	37	Brazil
Termoelétrica Potiguar S.A. - TEP	Gas & Power	20.00	20.00	55	8	Brazil
Nitroclor Ltda.	RT&M	38.80	38.80	-	-	Brazil
Bioenergética Britarumã S.A.	Gas & Power	30.00	30.00	-	-	Brazil
Nova Transportadora do Sudeste - NTS	Gas & Power	10.00	10.00	655	562	Brazil
GNL Gemini LTDA	Gas & Power	40.00	40.00	33	1	Brazil

(i) Companies abroad with financial statements prepared in foreign currencies.

(ii) Cover segments abroad in E&P, RTM and Gas & Power segments.

(iii) Despite the negative amount of net assets, allowance for losses was not recognized as the Company's obligations with Sete Brasil are limited to the investments made in this associate.

(iv) Equity and net income at September 30, 2019, most current public information.

In 2019, the Company had the following corporate restructuring:

i) Petrobras Distribuidora S.A. (BR) and Transportadora Associada de Gás S.A. (TAG) became associates.

ii) Petrobras Logística de Gás (Logigás) was incorporated in Petrobras and Petrobras Netherlands B.V. (PNBV) became a subsidiary of PIB BV.

iii) Petrobras holds now direct interest in Transportadora Brasileira Gasoduto Bolívia - Brasil S.A. and GNL Gemini LTDA and Transportadora Sulbrasileira de Gás S.A., former subsidiaries of Logigás.

The main investees of PIB BV are the wholly-owned subsidiaries Petrobras Global Trading B.V. – PGT (in the Netherlands), Petrobras Global Finance B.V. – PGF (Netherlands); Petrobras America Inc. – PAI (United States), and PNBV (Netherlands). PGT is dedicated to the trade of oil, oil products, biofuels and LNG (liquefied natural gas), as well as to the funding of its activities in light of Petrobras Group. PGF is the finance subsidiary of Petrobras Group, raising funds through bonds issued in the international capital market. PAI is dedicated to E&P (MP Gulf of Mexico, LLC). PNBV operates through joint operations in Tupi BV (65%), Guará BV (45%), Agri Development BV (90%), Libra (40%), Papa Terra BV (62.5%), Roncador BV (75%), Iara BV (42.5%) and Lapa BV (10%). They are dedicated to construction and lease of equipment and platforms for Brazilian E&P consortia and are incorporated under the law of the Netherlands. PNBV's interests in these entities comprise the voting shares.

Gaspetro holds interests in several natural gas distributors in Brazil that carry out, by means of concessions, public service of distribution of piped natural gas.

29.2. Investments in associates and joint ventures

	Balance at 12.31.2018	Investments	Transfer to assets held for sale	Restructuring, capital decrease and others (*)	Results in equity- accounted investments	CTA	OCI	Dividends	Balance at 12.31.2019
Joint Ventures	1,170	31	(6)	28	205	(21)	-	(215)	1,192
MP Gulf of Mexico, LLC	622	-	-	-	83	-	-	(128)	577
State-controlled natural gas distributors	308	-	-	49	87	(12)	-	(52)	380
Compañia Mega S.A. - MEGA	78	-	-	-	10	1	-	(10)	79
Other joint ventures	162	31	(6)	(21)	25	(10)	-	(25)	156
Associates									
Nova Transportadora do Sudeste	263	-	-	(16)	56	(9)	-	(55)	239
Transportadora Associada de Gás S.A.	-	-	-	306	11	(15)	10	(29)	283
Others Associates (**)	1,310	7	(6)	2,672	(119)	(86)	59	(57)	3,780
Other investments	16	-	-	(10)	-	(1)	-	-	5
Total	2,759	38	(12)	2,980	153	(132)	69	(356)	5,499

(*) It includes the transfer of the 10% remaining interest in TAG and the 37.5% remaining interest in BR Distribuidora to Associates (previously consolidated subsidiaries).

(**) It includes Petrobras Distribuidora and Braskem.

29.3. Investments in non- consolidated listed companies

	Thousand-share lot		Type	Quoted stock exchange prices (US\$ per share)		Market value	
	12.31.2019	12.31.2018		12.31.2019	12.31.2018	12.31.2019	12.31.2018
Associate							
Petrobras Distribuidora	1,165,000	1,165,000	Common	7.46	6.39	8,691	7,447
						8,691	7,447
Associate							
Braskem S.A.	212,427	212,427	Common	8	12	1,662	2,495
Braskem S.A.	75,762	75,762	Preferred A	7	12	561	926
						2,223	3,421

The market value of these shares does not necessarily reflect the realizable value upon sale of a large block of shares.

On June 4, 2019, the Company was informed by Odebrecht S.A that the negotiations with LyondellBasell for a potential transaction involving the transfer of Odebrecht's entire interest in Braskem had not succeeded.

Information on the main estimates used in the cash flow projections to determine the value in use of Braskem is set out in Note 25.3.

29.4. Non-controlling interest

The total amount of non-controlling interest at December 31, 2019 is US\$ 892 (US\$ 1,631 in 2018) primarily comprising US\$ 263 of Gaspetro (US\$ 255 in 2018), US\$ 70 of Transportadora Brasileira Gasoduto Brasil-Bolívia – TBG (US\$ 65 in 2018), and US\$ 203 refer to Consolidated Structured Entities (US\$ 206 in 2018).

Condensed financial information is set out as follows:

	Gaspetro		Consolidated Structured entities (*)		FIDC			TBG	BR Distribuidora
	2019	2018	2019	2018	2019	2018	2019	2018	2018
Current assets	91	79	793	826	16,377	6,622	154	174	3,304
Long-term receivables	61	58	586	781	-	-	-	1	1,609
Investments	380	360	-	-	-	-	-	-	9
Property, plant and equipment	1	1	-	-	-	-	430	463	1,496
Other non-current assets	73	76	-	-	-	-	3	2	123
	606	574	1,379	1,607	16,377	6,622	587	640	6,541
Current liabilities	40	26	8	75	6	4	105	173	1,177
Non-current liabilities	28	29	1,104	1,326	-	-	340	334	2,864
Shareholders' equity	538	519	267	206	16,371	6,618	142	133	2,500
	606	574	1,379	1,607	16,377	6,622	587	640	6,541
Sales revenues	136	114	-	-	-	-	426	425	26,753
Net income	89	74	41	(142)	910	489	180	160	874
Increase (decrease) in cash and cash equivalents	7	(7)	16	128	786	(181)	3	7	704

Gaspetro, a Petrobras' subsidiary, holds interests in several state distributors of natural gas in Brazil. The Company holds 51% of interests in this indirect subsidiary.

TBG is an indirect subsidiary which operates in natural gas transmission activities mainly through Bolivia-Brazil Gas Pipeline. The Company holds 51% of interests in this indirect subsidiary.

Structured entities include Charter Development LLC – CDC, dedicated to construct, acquirer and charter FPSOs, and Companhia de Desenvolvimento e Modernização de Plantas Industriais – CDMPI, which is dedicated to coking and hydrotreating of coke naptha from Henrique Lage refinery (REVAP).

On May 22, 2019, the Company's Board of Directors approved the sale of a further portion of its interest in Petrobras Distribuidora (BR), carried out through a secondary public offering (follow-on). After the closing of this operation, in July 25, Petrobras's interest in BR's capital stock was reduced to 37.50%, and, Petrobras is no longer the controlling shareholder of BR. For more information see note 30.

29.5. Summarized information on joint ventures and associates

The Company invests in joint ventures and associates in Brazil and abroad, whose activities are related to petrochemical companies, gas distributors, biofuels, thermoelectric power plants, refineries and other activities. Condensed financial information is set out below:

	2019				2018			
	Joint ventures		Associates		Joint ventures		Associates	
	In Brazil	MP Gulf of Mexico, LLC	Other companies abroad	Other companies in Brazil	In Brazil	MP Gulf of Mexico, LLC	Other companies abroad	Other companies in Brazil
Current assets	1,147	372	165	9,226	1,162	151	158	6,314
Non-current assets	486	–	5	4,880	520	–	10	1,388
Property, plant and equipment	641	3,131	48	20,210	866	3,643	45	12,932
Other non-current assets	634	–	–	1,579	633	–	1	863
	2,908	3,503	218	35,895	3,181	3,794	214	21,497
Current liabilities	790	237	74	6,751	1,163	86	72	6,159
Non-current liabilities	808	373	19	28,878	673	599	23	17,566
Shareholders' equity	1,270	2,317	79	255	1,354	2,487	79	(2,168)
Non-controlling interest	40	577	46	11	(9)	622	40	(60)
	2,908	3,504	218	35,895	3,181	3,794	214	21,497
Sales revenues	1,610	1,300	–	40,218	3,975	92	136	18,954
Net Income (loss) for the year	246	423	17	2,416	92	48	17	1,888
Ownership interest - %	20 to 51.5%	20%	34 to 45%	4.59 to 40%	20 to 83%	20%	34 to 50%	5 to 49%

29.6. Accounting policy for investments in subsidiaries, joint operations, joint ventures and associates

Basis of consolidation

The consolidated financial statements include the financial information of Petrobras and the entities it controls (subsidiaries), joint operations (at the level of interest the Company has in them) and consolidated structured entities.

Control is achieved when Petrobras: i) has power over the investee; ii) is exposed, or has rights, to variable returns from involvement with the investee; and iii) has the ability to use its power to affect its returns.

Subsidiaries are consolidated from the date on which control is obtained until the date that such control no longer exists, by using accounting policies consistent with those adopted by Petrobras. Note 11 sets out the consolidated entities and other direct investees.

Investments structured through a separate vehicle are set up so that the voting rights, or similar rights, are not the dominant factor to determine who controls the entity. At December 31, 2019, Petrobras controls and consolidates the following structured entities: Charter Development LLC - CDC (U.S.A., E&P); Companhia de Desenvolvimento e Modernização de Plantas Industriais - CDMPI (Brazil, RT&M) and, Fundo de Investimento em Direitos Creditórios Não-padronizados do Sistema Petrobras (Brazil, Corporate).

Intragroup balances and transactions, including unrealized profits arising from intragroup transactions, are eliminated in the consolidation of the financial statements.

Investments in other companies

An associate is an entity over which the Company has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee but not the ability to exercise control or joint control over those policies. The definition of control is set out in note 4.1.

A joint arrangement is an arrangement over which two or more parties have joint control (pursuant to contractual provisions). A joint arrangement is classified either as a joint operation or as a joint venture depending on the rights and obligations of the parties to the arrangement.

In a joint operation, the parties have rights to the assets and obligations for the liabilities related to the arrangement, while in a joint venture the parties have rights to the net assets of the arrangement. Some of the Company's activities in the E&P segment are conducted through joint operations.

Profit or loss, assets and liabilities related to joint ventures and associates are accounted for by the equity method. In a joint operation the Company recognizes the amount of its assets, liabilities and related income and expenses.

Accounting policies of joint ventures and associates have been adjusted, where necessary, to ensure consistency with the policies adopted by Petrobras. Distributions received from an investee reduce the carrying amount of the investment.

Business combination and Goodwill

A business combination is a transaction in which the acquirer obtains control of another business, regardless its legal form. Acquisitions of businesses are accounted for using the acquisition method when control is obtained. Combinations of entities under common control are accounted for at cost. The acquisition method requires that the identifiable assets acquired and the liabilities assumed be measured at the acquisition-date fair value, with limited exceptions.

Goodwill is measured as the excess of the aggregate amount of: (i) the consideration transferred; (ii) the amount of any non-controlling interest in the acquiree; and (iii) in a business combination achieved in stages, the fair value of the acquirer's previously held equity interest in the acquiree at the acquisition-date; over the net of the amounts of the identifiable assets acquired and the liabilities assumed. When this aggregate amount is lower than the net of the amounts of the identifiable assets acquired and the liabilities assumed, a gain on a bargain purchase is recognized in the statement of income.

Changes in ownership interest in subsidiaries that do not result in loss of control of the subsidiary are equity transactions. Any excess of the amounts paid/received, including directly attributable costs, over the carrying value of the ownership interest acquired/disposed of is recognized in shareholders' equity as changes in interest in subsidiaries.

30. Disposal of assets and other changes in organizational structure

The Company has an active partnership and divestment portfolio, which takes into account opportunities for disposal of non-strategic assets in several areas in which it operates. The partnerships provide for the sharing and development of new technologies, strengthening corporate governance, and sharing future risks and investments. The divestment and partnership portfolio is dynamic, since the development of transactions also depends on conditions beyond the control of the Company. The divestment projects and strategic partnerships follow the procedures aligned with the guidelines of the Brazilian Federal Auditor's Office (*Tribunal de Contas da União – TCU*) and the current legislation. In 2019, partnerships and divestments resulted in US\$ 10,413 million of cash inflows to the Company.

The major classes of assets and liabilities classified as held for sale are shown in the following table:

	Operating segment			12.31.2019	12.31.2018
	E&P	RT&M	Corporate	Total	Total
Assets classified as held for sale					
Cash and Cash Equivalents	1	4	-	5	40
Trade receivables	1	67	-	68	39
Inventories	-	13	-	13	47
Investments	351	4	-	355	973
Property, plant and equipment	1,773	273	-	2,046	745
Others	-	77	-	77	102
Total	2,126	438	-	2,564	1,946
Liabilities on assets classified as held for sale					
Trade Payables	-	27	-	27	1
Finance debt	-	-	142	142	-
Provision for decommissioning costs	2,961	-	-	2,961	932
Dividends	-	-	-	-	-
Pension and medical benefits	-	-	-	-	-
Others	-	116	-	116	50
Total	2,961	143	142	3,246	983

Details on transactions not closed as of December 31, 2019 and, therefore, classified as held for sale are presented as follows.

30.1. Transactions pending closing at December 31, 2019

The corresponding assets and liabilities of this transactions are classified as held for sale as of December 31, 2019.

a) Sale of Petrobras's interest in Petrobras Oil & Gas B.V. (PO&GBV)

On October 31, 2018, the wholly owned subsidiary Petrobras International Braspetro BV (PIBBV) entered into an agreement to sale its 50% interest in PO&GBV to Petrovida Holding B.V. PO&GBV is a joint venture in the Netherlands consisting of assets located in Nigeria. PO&GBV does not operate any of these fields.

In the last quarter of 2019, an impairment losses in the amount of US\$ 89 was accounted for within equity-accounted investments, (an impairment reversal in the amount of US\$ 45, in the last quarter of 2018, following the signing of the agreement).

On January 14, 2020, the transaction was closed, in the amount of US\$ 1,454, reflecting price adjustments and the deduction of Petrobras' portion from the payment of fees to the Nigerian Government for approval of the transaction. From this total, Petrobras has received US\$ 1,030 as dividends from PO&GBV, since the beginning of the transaction (January 1, 2018). At the closing, the Company received US\$ 276, with an additional US\$ 25 to be received up to June 30, 2020, and the remaining US\$ 123 to be received as soon as the Abgami field redetermination process is implemented.

b) Strategic alliance with Total

Petrobras and Total have a Strategic Alliance based on a master agreement signed in 2016. In 2018, the Company exercised a put option, transferring its remaining 10% stake in Lapa field to Total, in block BM-S-9, as provided in the contract signed in January 2018. This transaction amounts to US\$ 50 and is still subject to some conditions precedent.

With respect to the sale of the Company's 50% interest in Termobahia S.A, including the power plants Termobahia (former Celso Furtado) and Termocamaçari (former Rômulo Almeida), as set out in the master agreement signed in 2016, there is no expectation that the negotiation will be concluded in the next 12 months. Thus, these assets are no longer classified as held for sale.

c) Sale of Baúna field

On July 24, 2019, Petrobras signed a contract for the sale of 100% of its interest in the Baúna field (awarded area BM-S-40), located in shallow waters in the Santos Basin, to Karoon Petróleo & Gás Ltda., a subsidiary of Karoon Energy Ltd. This transaction amounts to US\$ 665, of which US\$ 50 was paid at the signing date and the remaining US\$ 615 will be paid at the closing of this transaction, including price adjustments.

This transaction is subject to customary conditions precedent, such as approval by the Brazilian Agency of Petroleum, Natural Gas and Biofuels (ANP).

d) Sale of Pampo and Enchova groups of fields

On July 24, 2019, Petrobras signed a contract for the sale of 100% of its interest in the Pampo and Enchova groups, located in shallow waters in the Campos Basin, comprising Enchova, Enchova Oeste, Marimbá, Piraúna, Bicudo, Bonito, Pampo, Trilha, Linguado and Badejo fields, to Trident Energy do Brasil LTDA, a subsidiary of Trident Energy L.P. ("Trident Energy").

This transaction amounts to US\$ 851, of which US\$ 53 was paid at the signing date and the remaining US\$ 798 will be paid at the closing of this transaction, including price adjustments.

The transaction closing is subject to the fulfillment of some conditions precedent, such as the approval by the ANP and a license to be issued by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA).

e) Sale of producing fields in Macau group of fields in the Potiguar Basin

On August 9, 2019, Petrobras signed a contract for the sale of its interest in a set of onshore and offshore producing fields in the Potiguar Basin, denominated the Macau group of fields, located in the state of Rio Grande do Norte, to SPE 3R Petroleum S.A., a wholly owned subsidiary of 3R Petroleum e Participações S.A.

The Macau group comprises the Aratum, Macau, Serra, Salina Cristal, Lagoa Aroeira, Porto Carão and Sanhaçu fields. Petrobras holds a 100% interest in all these concessions, except for the Sanhaçu field, in which it is the operator with a 50% interest, and the remaining 50% interest belongs to Petrogal.

The sale price is US\$ 191, of which US\$ 48 was paid upon signature of the contract and the remaining US\$ 143 will be paid upon transaction closing, including price adjustments.

This transaction is subject to customary conditions precedent, such as approval by the ANP.

f) Disposal of Liquigás Distribuidora S.A.

On November 19, 2019, Petrobras entered into an agreement with Copagaz and Nacional Gás Butano for the sale of its whole interest in Liquigás Distribuidora S.A., in the amount of US\$ 918 (R\$ 3.7 billion), to be adjusted according to contract conditions and paid upon transaction closing.

This transaction is subject to customary conditions precedent, such as approval by the Brazilian Antitrust Regulator (CADE).

g) Sale of Frade producing field

On November 28, 2019, Petrobras signed with PetroRio Jaguar Petróleo Ltda., subsidiary of Petro Rio S.A., a contract for the sale of its 30% stake in the Frade field, located in the Campos Basin, north coast of the state of Rio de Janeiro.

The transaction also included the sale of the entire stake held by Petrobras Frade Inversões S.A. (PFISA), a subsidiary of Petrobras, in the company Frade BV, which owns the offshore assets used in the development of production in Frade field.

The sale price of US\$ 100 comprises US\$ 7.5 paid at the signing of the contract and the remaining at the closing of the transaction, subject to price adjustments. In addition, Petro Rio is subject to pay US\$ 20 conditioned to a potential new discovery of reservoirs in the field.

The transaction closing is subject to the fulfillment of some conditions precedent, such as the approval by the CADE and ANP.

h) Contingent installment of the exploratory block BM-S-8 sale

On July 28, 2016, the Board of Directors of Petrobras approved the disposal of the Company's 66% interest in the exploratory block BM – S-8 to Statoil Brasil Óleo e Gás Ltda, which includes the Bacalhau field (former Carcará area located in the pre-salt of Santos Basin, for the amount of US\$ 2,500.

The first installment (US\$ 1,250) was received on November 22, 2016, and the second installment (US\$ 300) on March 21, 2018.

The third installment (US\$ 950) is still pending the approval of the Production Individualization Agreements (AIP) by the ANP or twelve months after its submission to this agency, what happens first.

30.2. Closed transactions at of December 31, 2019

a) Sale of distributors in Paraguay

On June 26, 2018 the Company entered into a Sale and Purchase Agreement (SPA) related to the sale to Copetrol Group of its entire interest held through its wholly-owned subsidiary Petrobras International Braspetro B.V. (PIB BV) in Petrobras Paraguay Distribución Limited (PPDL UK), Petrobras Paraguay Operaciones y Logística SRL (PPOL) and Petrobras Paraguay Gas SRL (PPG).

On March 8, 2019, this sale was completed after the fulfillment of all conditions precedent and the payment of US\$ 332 to the Company, which includes US\$ 45 of cash and cash equivalents of the companies and US\$ 7 relating to working capital adjustment. This amount sums to the US\$ 49 deposited in an escrow account at the signing date (June 27, 2018). As a result of this transaction, the Company recognized a US\$ 141 gain within other income and expenses. In addition, a US\$ 34 loss relating to cumulative translation adjustment previously recognized in shareholders' equity was reclassified to the statement of income, within other income and expenses, due to the depreciation of the Paraguayan Guarani against the US dollar, accumulated since the acquisition of the investment.

b) Sale of interest in three offshore producing fields in Campos basin

On November 28, 2018, the Company's Board of Directors approved the sale of 100% interest in Pargo, Carapeba and Vermelho fields (the Nordeste group of fields), located in shallow waters on the coast of the state of Rio de Janeiro, to Perenco company, which paid US\$ 74 at the contract signing.

On October 8, 2019, after all conditions precedent had been met, the sale was closed with the additional payment of US\$ 324 to Petrobras, totaling US\$ 398, and the Company recorded a US\$ 787 gain within other income and expenses, mainly due to the reversal of decommissioning costs.

c) Sale of onshore producing fields in Potiguar basin

On December 27, 2018, the Company's Board of Directors approved the sale of its total interest in 34 onshore producing fields, located in Potiguar basin, in the state of Rio Grande do Norte, to the company 3R Petroleum, in the amount of US\$ 453. However, the transaction was not consummated.

Accordingly, the Company promptly reassessed the other offers and accepted PetroRecôncavo's offers in the amount of US\$ 384, which was the second highest amount offered for this sale. Of this amount, US\$ 61 is conditioned on the extension of the concession to be granted by the ANP and its present value is US\$ 47. The agreement was signed on April 25, 2019, when PetroRecôncavo disbursed US\$ 29 in advance.

On December 9, 2019, the transaction was closed after the fulfillment of all conditions precedent, with the payment of additional US\$ 266 to Petrobras. Additionally, Petrobras assumes the obligation to reimburse PetroRecôncavo regarding abandonment costs, which present value is US\$ 5. The gain on this operation was US\$ 221, accounted for as other income and expenses.

d) Sale of 50% working interest in Tartaruga Verde and Module III of Espadarte fields

On April 25, 2019, Petrobras entered into an agreement with Petronas Petróleo Brasil Ltda., for the sale of 50% working interest in Tartaruga Verde field (BM-C-36 Concession) and Module III of Espadarte field. Petrobras will maintain a 50% working interest and the operation of the fields. The transaction amounts to US\$ 1,294, of which US\$ 259 was paid at the signing date.

On December 27, 2019, the transaction was closed with the payment of US\$ 692 to Petrobras, after the fulfillment of all conditions precedent and price adjustments provided for in the contract. The remaining US\$ 343 was compensated based on proceeds obtained by Petrobras from January 1 to the closing, considering Petronas's stake during this period. At the transaction closing, US\$ 74 loss was accounted for as other income and expenses.

e) Sale of Pasadena Refinery

On January 30, 2019, Petrobras America Inc. (PAI) entered into a SPA with Chevron USA Inc. for the sale of the shares held by PAI on Pasadena Refining System Inc. (PRSI) and PRSI Trading LLC (PRST), which comprise the Pasadena refining system in the United States.

On May 1, 2019, this sale was concluded after the fulfillment of conditions precedent. Accordingly, the amount of US\$ 467 was received by the Company, of which US\$ 350 relates to shares of the Pasadena refinery and the remaining US\$ 117 to its working capital, subject to price adjustments.

At the transaction closing, in the second quarter of 2019, a US\$ 49 loss was accounted for as other income and expenses.

f) Sale of interest in Transportadora Associada de Gás - TAG

On April 25, 2019, the Company entered into an agreement for the sale of a 90% interest in TAG to a group formed by ENGIE and the Canadian fund Caisse de Dépôt et Placement du Québec, acting through Aliança Transportadora de Gás Participações S.A. ("Aliança"), a Brazilian private company, to take over the control of TAG.

On June 13, 2019, after the fulfillment of all conditions precedent, this sale was closed for US\$ 8.5 billion, with the settlement as follows:

- US\$ 7.5 billion for the acquisition of 90% of TAG's shares;
- US\$ 0.5 billion relating to the sale of additional shares, so that the Company will preserve a 10% interest in TAG after the corporate restructuring carried out by the new controlling shareholder of TAG.
- Aliança made a loan to TAG, to repay the remaining debt with BNDES, in the amount of US\$ 0.5 billion.

On September 2, 2019, TAG incorporated Aliança, when Petrobras transferred 64,016 common shares issued by TAG to the new controlling shareholders in return for the US\$ 0.5 billion received in June 2019.

Following the closing of the transaction, a US\$ 5.458 gain, including the remeasurement of the remaining interest in the amount of US\$ 546, was accounted for in the second quarter of 2019, within other income and expenses.

In the scope of this transaction, Petrobras remained responsible for certain TAG contingencies, in the amount of US\$ 645, classified as contingent liabilities.

Petrobras will continue to use natural gas transportation services rendered by TAG, through contracts already in force between the two companies, with no impacts on its operations.

g) Public offer of shares of Petrobras Distribuidora (BR)

On May 22, 2019, the Company's Board of Directors approved the sale of a further portion of its interest in Petrobras Distribuidora (BR), to be carried out through a secondary public offering (follow-on).

On July 23, 2019, the Board of Directors approved the sale of 349,500,000 shares at a price per share of US\$ 6.5123 (R\$ 24.50).

On July 25, 2019, an overallotment option was fully exercised and the number of shares offered increased by 43,687,500, under the same conditions and at the same price per share initially offered. Thus, the offering amount totaled US\$ 2,561 and Petrobras' interest in BR's capital stock was reduced to 37.50%. After the closing of this operation, Petrobras is no longer the controlling shareholder of BR.

The Company recognized a US\$ 2,221 gain (US\$ 3,349 before taxes), including the remeasurement of the remaining interest in the amount of US\$ 1,780, as a result of this operation, accounted for as net income from discontinued operations in the third quarter of 2019.

The supply relationship will continue after the disposal as this transaction does not change the current supply contracts.

As BR represented a separate major line of business, the disposed interest is considered a discontinued operation, for which the statements of income and cash flows are presented below (including restatement of previous years):

	Jan-Jul/2019	2018	2017
Sales revenues	5,735	10,946	10,943
Cost of sales	(4,886)	(9,334)	(8,949)
Gross profit	849	1,612	1,994
Income (expenses)			
Selling expenses	(439)	(804)	(924)
General and administrative expenses	(116)	(216)	(261)
Other taxes	(14)	(82)	(54)
Other income and expenses	(15)	133	(89)
	(584)	(969)	(1,328)
Income before finance income (expense) and income taxes	265	643	666
Net finance income (expense)	138	628	(175)
Results of equity-accounted investments	–	–	(1)
Net income before income taxes	403	1,271	490
Income taxes	(150)	(428)	(131)
Net income for the year from discontinued operation - BR	253	843	359
Gain on sale of interest	3,515	–	–
Income taxes on the gain on sale of interest	(1,208)	–	–
Net income for the period from discontinued operation	2,560	843	359
Attributable to:			
Shareholders of Petrobras	2,560	843	359
Net income for the period from discontinued operation	2,560	843	359

	Jan-Jul/2019	Jan-Dec/2018	Jan-Dec/2017
Cash flows from Operating activities			
Net income for the year	2,560	843	359
Adjustments for:			
Pension and medical benefits (actuarial expense)	73	121	158
Depreciation, depletion and amortization	76	115	142
Foreign exchange, indexation and finance charges	(132)	(644)	188
Deferred income taxes, net	136	395	68
Others	105	7	-
Decrease (Increase) in assets			
Trade and other receivables, net	451	467	(50)
Other assets	(159)	103	(265)
Increase (Decrease) in liabilities			
Trade payables	(171)	(168)	9
Pension and medical benefits	(138)	(3)	(43)
Other liabilities	(45)	(325)	(139)
Income taxes paid	(102)	(5)	(30)
Net income from discontinued operations	(2,331)	-	-
Net cash provided by operating activities	323	906	397
Cash flows from Investing activities			
Acquisition of PP&E and intangibles assets	(81)	(116)	(93)
Proceeds from disposal of assets - Divestment	1,829	-	-
Divestment (Investment) in marketable securities	61	72	817
Others	3	-	3
Net cash (used in) provided by investing activities	1,812	(44)	727
Cash flows from Financing activities			
Proceeds from financing	-	244	1,944
Repayment of principal	(30)	(49)	(2,478)
Repayment of interest	(60)	(88)	(481)
Dividends paid to Shareholders of Petrobras	(387)	(263)	(210)
Others	(31)	-	48
Net cash used in financing activities	(508)	(156)	(1,177)
Effect of exchange rate changes on cash and cash equivalents	(136)	(66)	1
Net increase (decrease) in cash and cash equivalents	1,491	640	(52)
Cash and cash equivalents at the beginning of the year	789	149	201
Cash and cash equivalents at the end of the year	2,280	789	149

30.3. Cash flows from sales of interest with loss of control

In 2019 and 2018, the Company disposed of its interest in certain subsidiaries over which control was lost. The following table summarizes cash flows arising from losing control in subsidiaries:

	Cash received	Cash in subsidiary before losing control	Net Proceeds
2019			
Petrobras Paraguay	381	(45)	336
TAG	8,206	(174)	8,033
BR (*)	2,509	(591)	1,917
Total	11,096	(810)	10,286
2018			
Petroquímica Suape e Citepe	435	(14)	421
Total	435	(14)	421

(*) Discontinued operation.

30.4. Accounting Policy for assets and liabilities held for sale

Non-current assets, disposal groups and liabilities directly associated with those assets are classified as held for sale if their carrying amounts will, principally, be recovered through the sale transaction rather than through continuing use.

The condition for classification as held for sale is met only when the sale is approved by the Company's Board of Directors and the asset or disposal group is available for immediate sale in its present condition and there is the expectation that the sale will occur within 12 months after its classification as held for sale. However, an extended period required to complete a sale does not preclude an asset (or disposal group) from being classified as held for sale if the delay is caused by events or circumstances beyond the Company's control and there is sufficient evidence that the Company remains committed to its plan to sell the assets (or disposal groups).

Assets (or disposal groups) classified as held for sale and the associated liabilities are measured at the lower of their carrying amount and fair value less costs to sell. Assets and liabilities are presented separately in the statement of financial position.

When a component of the Company is disposed of or classified as held for sale, and it represented a separate major line of business, the disposed interest is considered a discontinued operation, thus its net income, operating, investing and financing cash flows are presented in separate line items until the date of the closing of the operation.

31. Assets by operating segment

	Exploration and Production	Refining, Transportation & Marketing	Gas & Power	Corporate	Eliminations	Total
Consolidated assets by operating segment - 12.31.2019						
Current assets	5,734	12,273	1,932	12,700	(4,827)	27,812
Non-current assets	148,546	31,248	10,781	11,390	(37)	201,928
Long-term receivables	6,456	3,299	1,369	6,567	–	17,691
Investments	592	1,109	1,067	2,731	–	5,499
Property, plant and equipment	122,496	26,710	8,181	1,915	(37)	159,265
Operating assets	106,331	23,630	5,605	1,784	(37)	137,313
Under construction	16,165	3,080	2,576	131	–	21,952
Intangible assets	19,002	130	164	177	–	19,473
Total Assets	154,280	43,521	12,713	24,090	(4,864)	229,740
Consolidated assets by operating segment - 12.31.2018						
Current assets	5,324	11,964	2,027	21,404	(3,657)	37,062
Non-current assets	126,989	32,119	13,582	12,120	196	185,006
Long-term receivables	8,115	3,286	1,525	8,898	235	22,059
Investments	650	1,303	757	49	–	2,759
Property, plant and equipment	116,153	27,356	11,057	2,856	(39)	157,383
Operating assets	93,172	24,347	8,517	2,460	(39)	128,457
Under construction	22,981	3,009	2,540	396	–	28,926
Intangible assets	2,071	174	243	317	–	2,805
Total Assets	132,313	44,083	15,609	33,524	(3,461)	222,068

32. Finance debt

32.1. Balance by type of finance debt

	12.31.2019	12.31.2018
In Brazil		
Banking Market	5,322	9,576
Capital Market	3,468	3,320
Development banks	1,927	3,346
Others	13	9
Total	10,730	16,251
Abroad		
Banking Market	16,555	24,124
Capital Market	32,476	39,627
Development banks	40	41
Export Credit Agency	3,233	3,881
Others	226	251
Total	52,530	67,924
Total finance debt	63,260	84,175
Current	4,469	3,667
Non-current	58,791	80,508

32.2. Changes in finance debt and reconciliation with cash flows from financing activities

	Balance at 12.31.2017	Adoption of IFRS 9	Additions	Principal amortization (*)	Interest amortization (*)	Accrued interest (**)	Foreign exchange/ inflation indexation charges	Cumulative translation adjustment (CTA)	Modification of contractual cash flows	Balance at 12.31.2018
In Brazil	21,930	65	2,442	(5,451)	(1,220)	1,338	27	(2,880)	-	16,251
Abroad	87,116	177	8,644	(27,988)	(4,465)	4,400	1,409	(1,357)	(12)	67,924
	109,046	242	11,086	(33,439)	(5,685)	5,738	1,436	(4,237)	(12)	84,175

	Balance at 12.31.2018	Additions	Principal amortization (*)	Interest amortization (*)	Accrued interest (**)	Foreign exchange/ inflation indexation charges	Cumulative translation adjustment (CTA)	Transfer to liabilities classified as held for sale	Modification of contractual cash flows	Balance at 12.31.2019
In Brazil	16,251	2,181	(5,663)	(745)	829	111	(352)	(1,882)	-	10,730
Abroad	67,924	5,362	(20,788)	(3,853)	3,878	538	(560)	-	29	52,530
	84,175	7,543	(26,451)	(4,598)	4,707	649	(912)	(1,882)	29	63,260
PP&E on credit		(76)	-	-						
Debt restructuring		-	(861)	-						
Deposits linked to financing		-	-	47						
Discontinued operations		(3)	39	50						
Net cash used in financing activities		7,464	(27,273)	(4,501)						

(*) It includes pre-payments.

(**) It includes premium and discount over notional amounts, as well as gains and losses by modifications in contractual cash flows.

In the year ended December 31, 2019, proceeds from financing amounted to US\$ 7,464, principally reflecting: (i) global notes issued in the capital market in the amount of US\$ 2,980, of which US\$ 737 relates to the reopening of bonds maturing in 2029, and the remaining relates to new bonds issued maturing in 2049; and (ii) debentures issued amounting to US\$ 1,685.

In addition, the Company repaid several finance debts, in the amount of US\$ 31,774 notably: (i) US\$ 9,994 relating to repurchase of global bonds previously issued by the Company in the capital market, with net premium paid to bond holders amounting to US\$ 855; (ii) pre-payment of banking loans in the domestic and international market totaling US\$ 13,446; and (iii) pre-payment of US\$ 578 with respect to financings with the Brazilian Development Bank (*Banco Nacional de Desenvolvimento Econômico e Social – BNDES*).

In September 2019, the Company made an offer to exchange Global Notes maturing between 2023 and 2029, in the amount of US\$ 3,650, for new Global Notes maturing in 2030 in the amount of US\$ 4,115, with net premium amounting to US\$ 465 to the bond holders.

Issuance of debentures

In 2019, the Company made, through public offers, two issuances of simple, non-convertible and unsecured debentures, totaling US\$ 1,685 in local currency (R\$ 6,608 million). The tables below present a summary containing the final conditions of the debentures:

6th issuance – Bookbuilding finalized on January 31, 2019

Interests paid in January and July of each year.

Serie	Maturity	Rate on Bookbuilding	Amounts issued (US\$ million)
1 st Serie	01/15/2026	IPCA+ 4.0460% p.a.	238
2 nd Serie	01/15/2029	IPCA+ 4.2186% p.a.	450
3 rd Serie	01/15/2026	106.25% of CDI	267

7th issuance – Bookbuilding finalized on September 25, 2019

Interests paid in March and September of each year.

Serie	Maturity	Rate on Bookbuilding	Amounts issued (US\$ million)
1 st Serie	09/15/2029	IPCA + 3.6% p.a.	371
2 nd Serie	09/15/2034	IPCA + 3.9% p.a.	359

32.3. Summarized information on current and non-current finance debt

Maturity in	2020	2021	2022	2023	2024	2025 onwards	Total (**)	Fair Value
Financing in U.S.Dollars (US\$)(*):	3,512	3,157	2,777	5,842	6,509	26,474	48,271	55,905
Floating rate debt	2,745	1,731	2,154	4,454	4,977	3,847	19,908	
Fixed rate debt	767	1,426	623	1,388	1,532	22,627	28,363	
Average interest rate	5.3%	5.4%	5.5%	5.5%	5.6%	6.6%	6.2%	
Financing in Brazilian Reais (R\$):	771	611	1,524	1,783	2,015	3,800	10,504	11,089
Floating rate debt	338	375	1,211	1,571	1,558	1,675	6,728	
Fixed rate debt	433	236	313	212	457	2,125	3,776	
Average interest rate	3.8%	4.1%	4.5%	4.3%	3.8%	2.8%	3.7%	
Financing in Euro (€):	137	203	388	411	13	1,410	2,562	3,418
Fixed rate debt	137	203	388	411	13	1,410	2,562	
Average interest rate	4.7%	4.7%	4.8%	4.6%	4.6%	4.6%	4.7%	
Financing in Pound Sterling (£):	48	-	-	-	-	1,874	1,922	2,388
Fixed rate debt	48	-	-	-	-	1,874	1,922	
Average interest rate	6.2%	-	-	-	-	6.3%	6.3%	
Financing in other currencies:	1	-	-	-	-	-	1	1
Fixed rate debt	1	-	-	-	-	-	1	
Average interest rate	10.1%	-	-	-	-	-	10.1%	
Total as of December 31, 2019	4,469	3,971	4,689	8,036	8,537	33,558	63,260	72,801
Average interest rate	5.1%	5.2%	5.3%	5.3%	5.3%	6.3%	5.9%	
Total as of December 31, 2018	3,667	3,921	7,012	10,317	11,951	47,307	84,175	85,929
Average interest rate	5.5%	5.9%	5.9%	5.8%	5.8%	6.4%	6.1%	

(*) Includes debt raised in Brazil (in Brazilian reais) indexed to the U.S. dollar.

(**)The average maturity of outstanding debt as of December 31, 2019 is 10.79 years (9.14 years as of December 31, 2018).

The fair value of the Company's finance debt is mainly determined and categorized into a fair value hierarchy as follows:

Level 1- quoted prices in active markets for identical liabilities, when applicable, amounting to US\$ 34,992 as of December 31, 2019 (US\$ 39,057 as of December 31, 2018); and

Level 2 – discounted cash flows based on discount rate determined by interpolating spot rates considering financing debts indexes proxies, taking into account their currencies and also Petrobras' credit risk, amounting to US\$ 37,809 as of December 31, 2019 (US\$ 46,872 as of December 31, 2018).

The sensitivity analysis for financial instruments subject to foreign exchange variation is set out in note 36.2.

32.4. Lines of credit

					Amount	
Company	Financial institution	Date	Maturity	Available (Lines of Credit)	Used	Balance
Abroad						
PGT BV	Syndicate of banks	3/7/2018	2/7/2023	4,350	–	4,350
PGT BV	Syndicate of banks	3/27/2019	2/27/2024	3,250	–	3,250
PGT BV	BNP Paribas	12/22/2016	1/9/2021	350	310	40
PGT BV	The Export - Import Bank of China	12/23/2019	12/27/2021	750	–	750
Petrobras	New Development Bank	8/27/2018	8/27/2022	200	40	160
Total				8,900	350	8,550
In Brazil						
Petrobras	Banco do Brasil	3/23/2018	1/26/2023	496	–	496
Petrobras	Bradesco	6/1/2018	5/31/2023	496	–	496
Petrobras	Banco do Brasil	10/4/2018	9/5/2025	496	–	496
Transpetro	Caixa Econômica Federal	11/23/2010	Not defined	82	–	82
Total				1,570	–	1,570

32.5. Covenants and Collateral

32.5.1. Covenants

The Company has covenants that were not in default at December 31, 2019 in its loan agreements and notes issued in the capital markets requiring, among other obligations i) the presentation of interim financial statements within 90 days of the end of each quarter (not reviewed by Independent Registered Public Accounting Firm) and audited financial statements within 120 days of the end of each fiscal year, with a grace period ranging from 30 to 60 days, depending on the agreement; ii) Negative Pledge / Permitted Liens clause; iii) clauses of compliance with the laws, rules and regulations applicable to the conduct of its business including (but not limited to) environmental laws; (iv) clauses in financing agreements that require both the borrower and the guarantor to conduct their business in compliance with anti-corruption laws and anti-money laundering laws and to institute and maintain policies necessary for such compliance; (v) clauses in financing agreements that restrict relations with entities or even countries sanctioned primarily by the United States (including, but not limited to, the Office of Foreign Assets Control (OFAC), Department of State and Department of Commerce), the European Union and United Nations; and vi) covenants with respect to debt level in some of its loan agreements with the Brazilian Development Bank (Banco Nacional de Desenvolvimento Econômico e Social - BNDES).

32.5.2. Collateral

Most of the Company's debt is unsecured, but certain specific funding instruments to promote economic development are collateralized.

A Financing agreement with China Development Bank (CDB) maturing in 2026 is also collateralized based on future oil exports for specific buyers limited to 200 thousand barrels per day. This collateral may not exceed the amount of the related debt (US\$ 5,006 at December 31, 2019 and US\$ 10,020 at December 31, 2018).

On December 16, 2019, the Company prepaid a US\$ 5,000 debt with CDB, maturing in 2027, which was also collateralized.

The loans obtained by structured entities are collateralized based on the projects' assets, as well as liens on receivables of the structured entities. Bonds issued by the Company in the capital market are unsecured.

The global notes issued by the Company in the capital market through its wholly-owned subsidiary Petrobras Global Finance B.V. – PGF are unsecured. However, Petrobras fully, unconditionally and irrevocably guarantees these notes, as set out in note 35.

32.6. Accounting policy

Loans and finance debt are initially recognized at fair value less transaction costs that are directly attributable to its issue and subsequently measured at amortized cost using the effective interest method. When the contractual cash flows of a financial liability measured at amortized cost are renegotiated or modified and this change is not substantial, its gross carrying amount will reflect the discounted present value of its cash flows under the new terms using the original effective interest rate. The difference between the book value immediately prior to such modification and the new gross carrying amount is recognized as gain or loss in the statement of income. When such modification is substantial, the original liability is extinguished and a new liability is recognized, impacting the statement of income for the period.

33. Lease liabilities

The Company is the lessee in agreements primarily including oil and gas producing units, drilling rigs and other exploration and production equipment, vessels and support vessels, helicopters, lands and buildings.

Changes in the balance of lease liabilities are presented below:

	Balance at 12.31.2018	Adoption of IFRS 16	Remeasurem ent / new contracts	Payment of principal and interest (*)	Interest expense	Foreign exchange gains and losses	Cumulative translation adjustment (CTA)	Transfer to assets and liabilities held for sale	Balance at 12.31.2019
In Brazil	185	5,628	1,239	(1,597)	376	160	(246)	(241)	5,504
Abroad	-	20,947	1,060	(3,655)	1,138	479	(445)	(1,167)	18,357
Total	185	26,575	2,299	(5,252)	1,514	639	(691)	(1,408)	23,861
Payments relating to liabilities held for sale				(84)					
Amounts received				110					
Payments relating to discontinued operations				19					
Net cash used in financing activities				(5,207)					

The following table presents main information by class of underlying assets:

Present Value of Future Payments	Initial Application	Closing Balance	Recoverable taxes	Discount rate (%)	Average Period
Without readjustment					
Vessels	7,162	7,199	271	4.4173 p.a.	5.1 years
Platforms	4,213	3,283	-	6.1264 p.a.	15.5 years
Others	472	319	7	2.8723 p.a.	2.3 years
With readjustment - abroad (*)					
Vessels	1,123	1,050	-	5.4336 p.a.	8.7 years
Platforms	10,898	9,658	-	5.8219 p.a.	11.7 years
Others	86	45	-	2.3401 p.a.	0.9 years
With readjustment - Brazil					
Vessels	1,489	1,147	101	6.8919 p.a.	4.5 years
Properties	798	859	16	8.4804 p.a.	20.7 years
Others	334	301	20	6.9033 p.a.	3.2 years
TOTAL	26,575	23,861	415	6.0033 p.a.	9.8 years

For information regarding depreciation, additions and carrying amount by class of underlying assets, see note 23.

A maturity schedule of the lease arrangements (nominal amounts) is set out as follows:

Nominal Future Payments	2020	2021	2022	2023	2024	2025 onwards	Total	Recoverable taxes
Without readjustment								
Vessels	2,390	1,943	1,347	954	619	945	8,198	300
Platforms	563	397	321	306	306	3,285	5,178	–
Others	151	123	10	18	1	30	333	8
With readjustment - abroad (*)								
Vessels	169	155	155	155	156	556	1,346	–
Platforms	1,911	1,808	1,281	892	847	6,846	13,585	–
Others	41	3	1	–	–	–	45	–
With readjustment - Brazil								
Vessels	406	327	215	164	126	133	1,371	121
Properties	116	138	134	111	104	1,248	1,851	20
Others	153	90	47	36	5	14	345	15
TOTAL	5,900	4,984	3,511	2,636	2,164	13,057	32,252	464

(*) Contracts signed in the U.S. Dollars.

Payments in certain lease agreements vary due to changes in facts or circumstances occurring after their inception other than the passage of time. Such payments are not included in the measurement of the lease obligations. Variable lease payments in the year ended December 31, 2019 amounted to US\$ 671, representing 13% in relation to fixed payments.

All extension options were included in the measurement of lease obligations.

The sensitivity analysis of financial instruments subject to exchange variation is presented in note 36.2.

In the year ended December 31, 2019, the Company recognized lease expenses in the amount of US\$ 674 relating to short-term leases.

At December 31, 2019, the balance of lease agreements for which the lease term has not commenced, as they relate to assets under construction or not yet available for use, is US\$ 50,130.

33.1. Accounting policy for lease liabilities

Lease liabilities, including those whose underlying assets are of low value, are measured at the present value of lease payments, which includes recoverable taxes, non-cancellable periods and options to extend a lease when they are reasonably certain. These payments are discounted at the Company's nominal incremental rate on loans, as the interest rates implicit in lease agreements with third parties usually cannot be readily determined.

Lease remeasurements reflect changes arising from contractual rates or indexes, as well as lease terms due to new expectations of lease extensions or terminations.

Unwinding of discount on the lease liability is classified as finance expense, while payments reduce their carrying amount. According to the Company's foreign exchange risk management, foreign exchange variations on lease liabilities denominated in U.S. dollars are designated as instruments to protect cash flow hedge relationships from highly probable future exports (see note 36.2).

In the E&P segment, some activities are conducted by joint operations where the company is the operator. In cases where all parties to the joint operation are primarily responsible for the lease payments, the Company recognizes the lease liability in proportion to its share. In addition, underlying assets arising from a specific contract in which the Company is solely responsible for the lease payments may be used in a joint operation. In such cases, the lease liabilities remain fully recognized and the partners are charged in proportion to their interests.

Payments associated with short-term leases (term of 12 months or less) are recognized as an expense over the term of the lease.

34. Equity

34.1. Share capital (net of share issuance costs)

As of December 31, 2019, subscribed and fully paid share capital, net of issuance costs, was US\$ 107,101, represented by 7,442,454,142 common shares and 5,602,042,788 preferred shares, all of which are registered, book-entry shares with no par value.

Preferred shares have priority on returns of capital, do not grant any voting rights and are non-convertible into common shares.

34.2. Accounting policy on share capital

Share capital comprises common shares and preferred shares. Incremental costs directly attributable to the issue of new shares (share issuance costs) are presented (net of tax) in shareholders' equity as a deduction from the proceeds.

34.3. Capital reserve

Capital reserve comprises treasury shares owned by Petrobras, in the amount of US\$ 2, at December 31, 2019.

34.4. Capital transactions

34.4.1. Incremental costs directly attributable to the issue of shares

It includes any transaction costs directly attributable to the issue of new shares, net of taxes.

34.4.2. Change in interest in subsidiaries

It includes any excess of amounts paid/received over the carrying value of the interest acquired/disposed. Changes in interests in subsidiaries that do not result in loss of control of the subsidiary are equity transactions.

34.4.3. Treasury shares

Shares held in treasury in the amount of US\$ 2, represented by 222,760 common shares and 72,909 preferred shares.

34.5. Profit reserves

34.5.1. Legal reserve

It represents 5% of the net income for the year, calculated pursuant to article 193 of the Brazilian Corporation Law.

34.5.2. Statutory reserve

Appropriated by applying a minimum of 0.5% of the year-end share capital and is retained to fund technology research and development programs. The balance of this reserve may not exceed 5% of the share capital, pursuant to article 55 of the Company's bylaws.

34.5.3. Tax incentives reserve

Government grants are recognized in the statement of income and are appropriated from retained earnings to the tax incentive reserve in the shareholders' equity pursuant to article 195-A of Brazilian Corporation Law. This reserve may only be used to offset losses or increase share capital.

In 2019, US\$ 179 was appropriated to this reserve (US\$ 203 in 2018), of which US\$ 177 relates to subventions from agencies *Superintendência de Desenvolvimento do Nordeste* (SUDENE) and *Superintendência de Desenvolvimento da Amazônia* (SUDAM).

34.5.4. Accounting policy on tax incentives reserve

A government grant is recognized when there is reasonable assurance that the grant will be received and the Company will comply with the conditions attached to the grant.

34.5.5. Profit retention reserve

It Includes funds intended for capital expenditures, primarily in oil and gas exploration and development activities, as per the capital budget of the Company, pursuant to article 196 of the Brazilian Corporation Law.

The Board of Directors proposes to retain in the shareholder's equity, within the profit retention reserve, the amount of US\$ 6,549 in order to partially fund the annual investment program determined in the capital budget for 2019, to be approved at the Shareholder's General Meeting.

34.6. Other comprehensive income

In 2019, the Company primarily recognized as other comprehensive income the following effects:

- Cumulative translation adjustment loss of US\$ 1,431 primarily reflecting translations from the main functional currency of Petrobras group (Brazilian real) into the presentation currency (U.S. dollar);
- Actuarial loss on post-employment defined benefit plans in the amount of US\$ 4,098, after taxes.
- Foreign exchange rate variation loss of US\$ 248 after taxes and amounts reclassified to the statement of income, recognized in the Company's equity, as a result of its cash flow hedge accounting policy. In 2018, the cumulative balance of foreign exchange variation losses, net of tax effects, was US\$ 13,292 (see note 29.2).

34.7. Distributions to shareholders

Pursuant to Brazilian Corporation Law, the Company's shareholders are entitled to receive minimum mandatory dividends (and/or interest on capital) of 25% of the adjusted net income for the year in proportion to the number of common and preferred shares held by them.

To the extent the Company proposes dividend distributions, preferred shares have priority in dividend distribution, which is based on the highest of 3% of the preferred shares' net book value or 5% of the preferred share capital. Preferred shares participate under the same terms as common shares in capital increases resulting from the capitalization of profit reserves or retained earnings. However, this priority does not necessarily grant dividend distributions to the preferred shareholders in the event of loss for a year.

On August 28, 2019, the Company's Board of Directors approved a new policy on distribution to shareholders, in which the main change is the definition that in the event of total debt lower than US\$ 60,000, the Company may distribute to its shareholders 60% of the difference between net cash flow from operating activities and capital expenditures (comprising investments for the acquisition of PP&E and intangibles assets and in investees). In the event of total debt exceeding US\$ 60,000, the Company may distribute to its shareholders the minimum mandatory dividends provided for by relevant regulation and the Company's bylaws.

The General Shareholders Meeting held on April 26, 2018 amended provisions in the Company's bylaws governing distribution to shareholders (dividends and interest on capital) on a quarterly basis. The quarterly distributions were included in the Company's minimum mandatory distribution for 2018 and were updated by Selic rate from the date of the payments to the end of the fiscal year.

Distributions to shareholders for 2019 amounts to US\$ 2,687, most of it proposed as interest on capital, to be approved at the 2020 Shareholder's General Meeting, are consistent with the minimum mandatory dividend of 25% of the adjusted income and withholding income tax rate of 15%. This proposal meets the priority rights of the preferred shareholders, whose criteria of 5% on the proportion of the capital represented by this class of shares prevailed for 2019.

Payment	Date of approval by the Board of Directors	Date of register	Date of Payment	Common Shares		Preferred Shares		Total Amount
				Amount(*)	Amount per Share	Amount(*)	Amount per Share	
1st payment of interest on capital	05.07.2019	05.21.2019	07.05.2019	187	0.0251	140	0.0251	327
2nd payment of interest on capital	08.01.2019	08.12.2019	10.04.2019	389	0.0522	293	0.0522	681
3 rd payment of interest on capital	10.24.2019	11.11.2019	02.07.2020	371	0.0499	279	0.0499	650
4 th payment of interest on capital	12.18.2019	12.26.2019	02.07.2020	-	-	580	0.1035	580
Indexation charges on paid anticipations				9	0.0012	7	0.0012	16
Complement of minimum mandatory dividends	02.19.2020	(**)	(**)	431	0.0580	1	0.0001	432
Total for 2019				1,387	0.1864	1,300	0.2320	2,687
Total for 2018				507	0.0681	1,343	0.2397	1,850

(*) Amounts translated into U.S. dollar based on the exchange rate prevailing at the date of the approval, except for the complement of minimum mandatory dividends, based on the closing exchange rate at the date of the financial statements.

(**) To be settled within 60 days after the Shareholder's General Meeting.

Dividends payable attributable to shareholders of Petrobras amounts to US\$ 1,530 as of December 31, 2019 (US\$ 1,005 as of December 31, 2018), and comprise the minimum mandatory dividend of 25% of the adjusted income, including indexation charges based on Selic rate, net of the advances made during the year. In addition to the dividends payable to Petrobras' shareholders, there are dividends payable to non-

controlling shareholders for US\$ 28, totaling US\$ 1,558 accounted for in the statement of financial position as of December 31, 2019 (US\$ 1,109 as of December 31, 2018).

34.8. Earnings per share

	2019			2018			2017		
	Common	Preferred	Total	Common	Preferred	Total	Common	Preferred	Total
Net income attributable to shareholders of Petrobras	5,790	4,361	10,151	4,093	3,080	7,173	(52)	(39)	(91)
Continuing operations	4,369	3,291	7,660	3,750	2,822	6,572	(198)	(149)	(347)
Discontinued operations	1,421	1,070	2,491	343	258	601	146	110	256
Weighted average number of outstanding shares	7,442,454,142	5,602,042,788	13,044,496,930	7,442,454,142	5,602,042,788	13,044,496,930	7,442,454,142	5,602,042,788	13,044,496,930
Basic and diluted earnings (losses) per share - in U.S. dollars	0.78	0.78	0.78	0.55	0.55	0.55	(0.01)	(0.01)	(0.01)
Continuing operations	0.59	0.59	0.59	0.50	0.50	0.50	(0.03)	(0.03)	(0.03)
Discontinued operations	0.19	0.19	0.19	0.05	0.05	0.05	0.02	0.02	0.02
Basic and diluted earnings (losses) per ADS equivalent - in U.S. dollars^(*)	1.56	1.56	1.56	1.10	1.10	1.10	(0.02)	(0.02)	(0.02)
Continuing operations	1.18	1.18	1.18	1.00	1.00	1.00	(0.06)	(0.06)	(0.06)
Discontinued operations	0.38	0.38	0.38	0.10	0.10	0.10	0.04	0.04	0.04

(*) Petrobras' ADSs are equivalent to two shares.

35. Fair value of financial assets and liabilities

	Fair value measured based on			Total fair value recorded
	Level I	Level II	Level III	
Assets				
Marketable securities	1.352	-	-	1.352
Commodity derivatives	56	3	-	59
Foreign currency derivatives	-	15	-	15
Interest rate derivatives	-	10	-	10
Balance at December 31, 2019	1.408	18	-	1.426
Balance at December 31, 2018	1.464	29	-	1.493
Liabilities				
Foreign currency derivatives	-	(333)	-	(333)
Commodity derivatives	-	3	-	(3)
Interest rate derivatives	-	-	-	-
Balance at December 31, 2019	-	(330)	-	(336)
Balance at December 31, 2018	-	(349)	-	(349)

The estimated fair value for the Company's long-term debt, computed based on the prevailing market rates, is set out in note 10.

The fair values of cash and cash equivalents, short-term debt and other financial assets and liabilities are equivalent or do not differ significantly from their carrying amounts.

36. Risk management

The Company is exposed to a variety of risks arising from its operations, including price risk (related to crude oil and oil products prices), foreign exchange rates risk, interest rates risk, credit risk and liquidity risk. Corporate risk management is part of the Company's commitment to act ethically and comply with the legal and regulatory requirements of the countries where it operates. To manage market and financial risks the Company prefers structuring measures through adequate capital and leverage management. While managing risks, the Company considers its corporate governance and controls, technical departments and statutory committees monitoring, under the guidance of the Board of Executive Officers and the Board of Directors. The Company takes account of risks in its business decisions and manages any such risk in an integrated manner in order to enjoy the benefits of diversification.

A summary of the positions of the derivative financial instruments held by the Company and recognized in other current assets and liabilities as of December 31, 2019, as well as the amounts recognized in the statement of income and other comprehensive income and the guarantees given is set out as follows:

	Statement of Financial Position				
	Notional value		Fair value Asset Position (Liability)		Maturity
	12.31.2019	12.31.2018	12.31.2019	12.31.2018	
Derivatives not designated for hedge accounting					
Future contracts - total (*)	(10,383)	(14,043)	(28)	108	
Long position/Crude oil and oil products	9,865	40,017	-	-	2020
Short position/Crude oil and oil products	(20,248)	(54,060)	-	-	2020
Forward contracts					
Long position/Foreign currency forwards (BRL/USD) (**)	US\$ 273	US\$ 137	-	(2)	2020
Short position/Foreign currency forwards (BRL/USD) (**)	US\$ 0	US\$ 92	-	(1)	2020
Long position/Foreign currency forwards (EUR/USD) (**)	EUR 2245	EUR 3000	(45)	(123)	2020
Long position/Foreign currency forwards (GBP/USD) (**)	GBP 505	GBP 450	11	(11)	2020
Short position/Foreign currency forwards (GBP/USD) (**)	GBP 282	GBP 31	(14)	-	2020
Swap					
Foreign currency / Cross-currency Swap (**)	GBP 700	GBP 700	32	1	2026
Foreign currency / Cross-currency Swap (**)	GBP 600	GBP 600	(50)	(70.5)	2034
Interest / Swap	3,008	-	6	-	2029/2034
Foreign currency / Cross-currency Swap (**)	US\$ 240	-	11	-	2024/2029
Total recognized in the Statement of Financial Position			(77)	(99)	

(*) Notional value in thousands of bbl.

(**) Amounts in US\$, GBP and EUR are presented in million.

	Gains/(losses) recognized in the statement of income			Gains/(losses) recognized in Shareholders' Equity (*)		
	2019	2018	2017	2019	2018	2017
		Reclassified	Reclassified		Reclassified	Reclassified
	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	n/a
Commodity derivatives	(370)	(416)	(121)	-	-	-
Foreign currency derivatives	(166)	(370)	89	-	-	-
Interest rate derivatives	6	-	(9)	-	-	-
	(530)	(786)	(41)	-	-	-
Cash flow hedge on exports (**)	(3,136)	(3,315)	(3,154)	(5,060)	(5,635)	(5,635)
Total	(3,666)	(4,101)	(3,195)	(5,060)	(5,635)	(5,635)

(*) Amounts recognized as other comprehensive income

(**) Using non-derivative financial instruments as designated hedging instruments, as set out in note 28.2.

	Guarantees given as collateral	
	12.31.2019	12.31.2018
Commodity derivatives	57	(48)
Foreign currency derivatives	230	70
Total	287	22

A sensitivity analysis of the derivative financial instruments for the different types of market risks as of December 31, 2019 is set out as follows:

Financial Instruments	Risk	Probable Scenario (*)	Reasonably possible scenario (*)	Remote Scenario (*)
Derivatives not designated for hedge accounting				
Future contracts	Crude oil and oil products - price changes	-	(128)	(256)
Forward contracts	Foreign currency - depreciation BRL x USD	(3)	(68)	(136)
		(3)	(196)	(392)

(*) The probable scenario was computed based on the following risks: oil and oil products prices: fair value at December 31, 2019; Real x U.S. Dollar - 1.2% depreciation of the Real. Source: Focus. Reasonably possible and remote scenarios consider 25% and 50% deterioration in the associated risk variables, respectively.

36.1. Risk management of crude oil and oil products prices

The Company is usually exposed to commodity price cycles, although it may use derivative instruments to hedge exposures related to prices of products purchased and sold to fulfill operational needs and in specific circumstances depending on business environment analysis and assessment of whether the Business and Management targets are being met.

Crude Oil

In March 2019, Petrobras implemented a hedge strategy for part of its oil exports foreseen for 2019. Over-the-Counter (OTC) put options referenced in the average Brent oil prices from April to the end of 2019 were purchased with strike price of US\$ 60/barrel, with premium of US\$ 320. In 2018, a similar strategy was implemented, with an average strike price of US\$ 65/barrel and total cost of approximately US\$ 445.

However, in the third quarter of 2019, based on the significant reduction in cash flow uncertainties concerning the Business and Management Plan for 2019, Petrobras sold the put options at a strike price of US\$ 60/barrel, totaling US\$ 101 received.

In the year ended December 31, 2019, due to the mark to market of these put options and the increase of the commodity price in the international market, a US\$ 216 loss was accounted as other income and expenses (a US\$ 401 loss in the year ended December 31, 2018).

Gasoline

Since September 2018, the Company also has executed a hedge strategy related to gasoline prices and foreign exchange rates by using commodity derivatives and non-deliverable forwards (NDF), in order to give flexibility on its pricing policy for this oil product, allowing the Company to hold gasoline prices constant in the domestic market for periods of up to 15 days. The Company recognized a US\$ 11 gain arising from this strategy in the year ended December 31, 2019, recorded in other income and expenses.

Diesel

With the objective of giving additional flexibility to the pricing policy, in December 2018, Petrobras adopted a hedge strategy applied to diesel prices and foreign exchange rates by using NDF, in a manner similar to the strategy applied to gasoline. In June 2019, Petrobras approved the review of the frequency of adjustments in the prices of diesel and gasoline. From then on, the price adjustments of diesel and gasoline are carried out without defined frequency. The Company recognized a US\$ 12 loss arising from this strategy on diesel in the year ended December 31, 2019, recorded in other income and expenses.

When applying this hedge strategy, the Company maintains the principles that govern the practice of competitive prices, such as international parity price, margins according to the risks inherent to the operation, share of participation in the market and mechanisms of protection through derivatives.

Other commodity derivative transactions

Petrobras, by use of its assets, positions and market knowledge from its operations in Brazil and abroad, occasionally seeks to optimize some of its commercial operations in the international market, with the use of commodity derivatives to manage price risk. Changes in operations contracted for other commodities derivatives resulted in a US\$ 150 loss in 2019 (a US\$ 19 gain in 2018).

36.2. Foreign exchange risk management

The Company's Risk Management Policy provides for, as an assumption, an integrated risk management that extends to the whole corporation, pursuing the benefit from the diversification of its businesses.

By managing its foreign exchange risk, the Company takes into account the group of cash flows derived from its operations. This concept is especially applicable to the risk relating to the exposure of the Brazilian Real against the U.S. dollar, in which future cash flows in U.S. dollar, as well as cash flows in Brazilian Real affected by the fluctuation between both currencies, such as cash flows derived from diesel and gasoline sales in the domestic market, are assessed in an integrated manner.

Accordingly, the financial risk management mainly involves structured actions encompassing the business of the Company.

Changes in the Real/U.S. dollar spot rate, as well as foreign exchange variation of the Real against other foreign currencies, may affect net income and the statement of financial position due to the exposures in foreign currencies, such as:

- High probable future transactions;
- Monetary items; and
- Firm commitments.

The Company seeks to mitigate the effect of potential variations in the Real/U.S. dollar spot rates mainly raising funds denominated in US dollars, aiming at reducing the net exposure between obligations and receipts in this currency, thus representing a form of structural protection that takes into account criteria of liquidity and cost competitiveness.

Foreign exchange variation on future exports denominated in U.S. Dollar in a given period are efficiently hedged by the US dollar debt portfolio taking into account changes in such portfolio over time.

The foreign exchange risk management strategy may involve the use of derivative financial instruments to hedge certain liabilities, mitigating foreign exchange rate risk exposure, especially when the Company is exposed to a foreign currency in which no cash inflows are expected, for example, the Pound Sterling.

In the short-term, the foreign exchange risk is managed by applying resources in cash or cash equivalent denominated in Brazilian Real, U.S. Dollar or in another currency.

a) Cash Flow Hedge involving the Company's future exports

Aligned with Company's foreign exchange risk management, and considering the initial adoption of IFRS 16 on January 1, 2019, the Company performed additional designations in the year ended December 31, 2019, amounting to US\$ 28,009 (R\$ 108,481 million), in which the hedged item was the highly probable future exports in US dollars, and as hedging instruments lease agreements denominated in US dollars.

The carrying amounts, the fair value as of December 31, 2019, and a schedule of expected reclassifications to the statement of income of cumulative losses recognized in other comprehensive income (shareholders' equity) based on a US\$ 1.00 / R\$ 4.0307 exchange rate are set out below:

Present value of hedging instrument notional value at 12.31.2019					
Hedging Instrument	Hedged Transactions	Nature of the Risk	Maturity Date	(US\$ million)	(R\$ million)
Foreign exchange gains and losses on proportion of non-derivative financial instruments cash flows	Foreign exchange gains and losses on a portion of highly probable future monthly exports revenues	Foreign Currency – Real vs U.S. Dollar Spot Rate	January 2019 to December 2028	87,651	353,295

Changes in the present value of hedging instrument notional value	US\$	R\$ million
Amounts designated as of January 1, 2019	66,168	256,390
Additional hedging relationships designated, designations revoked and hedging instruments re-designated	56,573	222,874
Exports affecting the statement of income	(9,247)	(36,560)
Principal repayments / amortization	(25,843)	(102,827)
Foreign exchange variation	-	13,418
Amounts designated as of December 31, 2019	87,651	353,295
Nominal value of hedging instrument (finance debt and lease liability) at December 31, 2019	104,212	420,046

In the year ended December 31, 2019, the Company recognized a US\$ 9 gain within foreign exchange gains (losses) due to ineffectiveness (a US\$ 50 loss in 2019).

The average ratio of future exports for which cash flow hedge accounting was designated to the highly probable future exports is 57.7%.

A roll-forward schedule of cumulative foreign exchange losses recognized in other comprehensive income as of December 31, 2019 is set out below:

	Exchange rate	Tax effect	Total
Balance at January 1, 2018	(14,508)	4,935	(9,573)
Recognized in Other comprehensive income	(8,950)	3,043	(5,907)
Reclassified to the statement of income - occurred exports	3,315	(1,127)	2,188
Balance at December 31, 2018	(20,143)	6,851	(13,292)
Recognized in Other comprehensive income	(3,510)	1,192	(2,318)
Reclassified to the statement of income - occurred exports	3,136	(1,066)	2,070
Balance at December 31, 2019	(20,517)	6,977	(13,540)

Additional hedging relationships may be revoked or additional reclassification adjustments from equity to the statement of income may occur as a result of changes in forecasted export prices and export volumes following a review of the Company's business plan. Based on a sensitivity analysis considering a US\$ 10/barrel decrease in Brent prices stress scenario, when compared to the Brent price projections in our Strategic Plan 2020-2024, would not indicate a reclassification adjustment from equity to the statement of income.

A schedule of expected reclassification of cumulative foreign exchange losses recognized in other comprehensive income to the statement of income as of December 31, 2019 is set out below:

	2019	2020	2021	2022	2023	2024	2025	2026 to 2028	Total
Expected realization	(4,673)	(4,495)	(4,851)	(3,131)	(1,925)	(505)	259	(1,196)	(20,517)

a.1) Accounting policy

At inception of the hedge relationship, the Company documents its objective and strategy, including identification of the hedging instrument, the hedged item, the nature of the hedged risk and evaluation of hedge effectiveness requirements.

Considering the natural hedge and the risk management strategy, the Company designates hedging relationships to account for the effects of the existing hedge between a foreign exchange gain or loss from proportions of its long-term debt obligations (denominated in U.S. dollars) and foreign exchange gain or loss of its highly probable U.S. dollar denominated future export revenues, so that gains or losses associated with the hedged transaction (the highly probable future exports) and the hedging instrument (debt obligations) are recognized in the statement of income in the same periods.

Foreign exchange gains and losses on proportions of debt obligations and lease liability (non-derivative financial instruments) have been designated as hedging instruments.

The highly probable future exports for each month are hedged by a proportion of the debt obligations with an equal US dollar nominal amount. Only a portion of the Company's forecast exports are considered highly probable.

The Company's future exports are exposed to the risk of variation in the Brazilian Real/U.S. dollar spot rate, which is offset by the converse exposure to the same type of risk with respect to its debt denominated in US dollar.

The hedge relationships are assessed on a monthly basis and they may cease and may be re-designated in order to achieve the risk management strategy.

Foreign exchange gains and losses relating to the effective portion of such hedges are recognized in other comprehensive income and reclassified to the statement of income within finance income (expense) in the periods when the hedged item affects the statement of income. The gains or losses relating to the ineffective portion are immediately recognized in finance income (expense).

Whenever a portion of future exports for a certain period, for which their foreign exchange gains and losses hedging relationship has been designated is no longer highly probable, the Company revokes the designation and the cumulative foreign exchange gains or losses that have been recognized in other comprehensive income remain separately in equity until the forecast exports occur.

If future exports for which foreign exchange gains and losses hedging relationship has been designated is no longer expected to occur, any related cumulative foreign exchange gains or losses that have been recognized in other comprehensive income from the date the hedging relationship was designated to the date the Company revoked the designation is immediately recycled from equity to the statement of income.

In addition, when a financial instrument designated as a hedging instrument expires or settles, the Company may replace it with another financial instrument in a manner in which the hedge relationship continues to occur. Likewise, whenever a hedged transaction effectively occurs, its financial instrument previously designated as a hedging instrument may be designated for a new hedge relationship.

The gains or losses relating to the ineffective portion are immediately recognized in finance income (expense). Ineffectiveness may occur as hedged items and hedge instruments have different maturity dates and due to discount rate used to determine their present value.

b) Cross currency swap – Pounds Sterling x Dollar

In 2017, the Company, through its wholly owned subsidiary Petrobras Global Trading B.V. (PGT), entered into cross currency swaps maturing in 2026 and 2034, with notional amounts of £ 700 million and £ 600 million, respectively, in order to hedge its Pounds/U.S. Dollar exposure arising from bonds issued amounting to £ 1,300. The Company recognized a US\$ 241 loss in the year ended December 31, 2019 (a US\$ 265 gain in the year ended December 31, 2018) arising from this strategy, recorded in finance income (expense). The Company does not expect to settle these swaps before their expiration dates.

c) Swap contracts – National consumer price index (IPCA) x Brazilian interbank offering rate (CDI) and CDI x Dollar

In September 2019, Petrobras contracted a cross currency swap aiming to protect against exposure arising from the 7th issuance of debentures, settled on October 9, 2019, in the total notional amount of US\$ 367 for IPCA x CDI operations, maturing in September 2029, and US\$ 240 for CDI x U.S. Dollar operations, maturing in September 2024 and September 2029.

The mark to market of IPCA x CDI swap operations registered a US\$ 11 gain in the year ended December 31, 2019, while the mark to market of CDI x USD swap operations presented a US\$ 7 loss in the same period, both recorded as finance income (expense). The Company does not expect to settle these swaps before their expiration dates.

Changes in future interest rate curves (CDI) may have an impact on the Company's results, due to the market value of these swap contracts. A sensitivity analysis on CDI with a constant increase (parallel shock) of 100 basis points, all other variables remaining constant, would result in a US\$ 20 loss, while a constant reduction (parallel shock) of 100 basis points, would result in a US\$ 24 gain.

d) Non Deliverable Forward (NDF) – Euro x Dollar and Pounds Sterling x Dollar

In 2018, the Company, also through PGT, entered into non deliverable forwards with notional amounts of Euro 3,000 million and £ 419 million, maturing in 2019, in order to reduce its euro x dollar and pounds x dollar exposures raised by bonds issued. In the year ended December 31, 2019, the notional amount was reduced to Euro 2,255 million and £ 167 million, adjusting the protection to a lower exposure to the Euro and Pounds Sterling provided by the repurchase of bonds in these currencies over the course of this period. The Company recognized a US\$ 227 loss in the year ended December 31, 2019 arising from this strategy (US\$ 139 in the same period of 2018), recorded in finance income (expense). The Company does not expect to settle these NDFs before their expiration dates.

e) Sensitivity analysis for foreign exchange risk on financial instruments

A sensitivity analysis is set out below, showing the probable scenario for foreign exchange risk on financial instruments, computed based on external data along with stressed scenarios (a 25% and a 50% change in the foreign exchange rates), except for assets and liabilities of foreign subsidiaries, when transacted in a currency equivalent to their respective functional currencies.

Financial Instruments	Exposure at 12.31.2019	Risk	Probable Scenario (*)	Reasonably possible scenario	Remote Scenario
Assets	6,088		74	1,522	3,044
Liabilities	(92,470)	Dollar/Real	(1,130)	(23,094)	(46,188)
Exchange rate - Cross currency swap	(746)		(9)	(187)	(373)
Cash flow hedge on exports	87,651		1,072	21,913	43,826
	1,046		14	309	618
Assets	3		-	1	2
Liabilities	(18)	Euro/Real	-	(5)	(9)
	(15)		-	(4)	(7)
Assets	2,554		(9)	639	1,277
Liabilities	(5,136)	Euro/Dollar	19	(1,284)	(2,568)
Non Deliverable Forward (NDF)	2,524		(9)	631	1,262
	(58)		1	(14)	(29)
Assets	2		-	1	1
Liabilities	(21)	Pound Sterling/Real	-	(5)	(11)
	(19)		-	(4)	(10)
Assets	1,925		(2)	481	963
Liabilities	(3,863)	Pound Sterling /Dollar	5	(966)	(1,932)
Derivative - cross currency swap	1,718		(2)	429	859
Non Deliverable Forward (NDF)	216		-	54	108
	(4)		1	(2)	(2)
Total at December 31, 2019	950		16	285	570
Total at December 31, 2018	848		6	210	422

(*) On December 31, 2019, the probable scenario was computed based on the following risks: R\$ x U.S. Dollar - a 1.2% depreciation of the Real; lene x Dollar: a 0.4% depreciation of the lene; Euro x U.S. Dollar: a 0.4% depreciation of the Euro; Pound Sterling x U.S. Dollar: a 0.12% depreciation of the Pound Sterling; Real x Euro: a 0.9% depreciation of the Real; and Real x Pound Sterling - a 1.1% depreciation of the Real. Source: Focus and Bloomberg.

36.3. Interest rate risk management

The Company considers that interest rate risk does not create a significant exposure and therefore, preferably does not use derivative financial instruments to manage interest rate risk, except for specific situations faced by certain subsidiaries of Petrobras.

36.4. Credit risk

Credit risk management in Petrobras aims to mitigate risk of not collecting receivables, financial deposits or collateral from third parties or financial institutions through efficient credit analysis, granting and management based on quantitative and qualitative parameters that are appropriate for each market segment in which the Company operates.

The commercial credit portfolio is broad and diversified and comprises clients from the domestic and foreign markets. Credit granted to financial institutions is related to collaterals received, cash surplus invested and derivative financial instruments. It is spread among "investment grade" international banks rated by international rating agencies and Brazilian banks with low credit risk.

36.4.1. Credit quality of financial assets

a) Trade and other receivables

The Company has internal credit commissions that assess creditworthiness and define credit limits, which are regularly monitored, based on the customer's main activity, commercial relationship and credit history with Petrobras, solvency, financial situation and external market assessment of the customer.

b) Other financial assets

Credit quality of cash and cash equivalents, as well as marketable securities is based on external credit ratings provided by Standard & Poor's, Moody's and Fitch. The credit quality of those financial assets, that are neither past due nor considered to be credit impaired, are set out below:

	Cash and cash equivalents		Marketable securities	
	2019	2018	2019	2018
AAA	-	-	-	1
AA	1,053	811	-	-
A	1,173	8,421	-	-
BBB	41	51	-	-
BB	3,591	2,599	838	-
B	2	2	-	-
AAA.br	80	706	33	1,077
AA.br	1,224	1,299	48	58
A.br	-	-	-	-
BB.br	-	-	-	-
Other ratings	208	10	27	-
	7,372	13,899	946	1,136

36.5. Liquidity risk

Liquidity risk is represented by the possibility of a shortage of cash or other financial assets in order to settle the Company's obligations on the agreed dates and is managed by the Company based on policies such as: centralization of cash management, optimization of the level of cash and cash equivalents held and reduction of working capital; maintenance of an adequate cash balance to ensure that cash need for investments and short-term obligations is met even in adverse market conditions; increase in the average debt maturity, increase in funding sources from domestic and international markets (new markets and financial products), as well as funds under the partnership and divestment program.

Following its liability management strategy, the Company regularly evaluates market conditions and may enter into transactions to repurchase its own securities or those of its affiliates, through a variety of means, including tender offers, make whole exercises and open market repurchases, in order to improve its debt repayment profile and cost of debt.

A maturity schedule of the Company's finance debt (undiscounted), including face value and interest payments is set out as follows:

Maturity	2020	2021	2022	2023	2024	2025 and thereafter	Balance at December 31, 2019	Balance at December 31, 2018
Principal	3,551	4,217	4,829	8,139	8,627	35,921	65,284	85,279
Interest	3,295	3,201	3,024	2,738	2,354	29,247	43,859	51,359
Total	6,846	7,418	7,853	10,877	10,981	65,168	109,143	136,638

36.6. Insurance

The Company's insurance strategy involves acquiring insurance to cover risks that may produce material impacts and to cover risks that are subject to compulsory insurance coverage (pursuant to legal or contractual requirements). The remaining risks are self-insured and Petrobras intentionally assumes the entire risk by abstaining from contracting insurance. The Company assumes a significant portion of its risk, by entering into insurance policies that have deductible clauses up to the equivalent to US\$180.

Additionally, the Company has indemnify clauses in its bylaws, as set out in note 30.

The main information concerning the insurance coverage outstanding at December 31, 2019 is set out below:

Assets	Types of coverage	Amount insured
Facilities, equipment inventory and products inventory	Fire, operational risks and engineering risks	140,248
Tankers and auxiliary vessels	Hulls	3,212
Fixed platforms, floating production systems and offshore drilling units	Oil risks	27,505
Total		170,965

Petrobras does not have loss of earnings insurance or insurance related to automobiles and pipeline networks in Brazil.

37. Related-party transactions

The Company has a related-party transactions policy, which is annually revised and approved by the Board of Directors, and is applicable to all the Petrobras Group, in accordance with the Company's by-laws.

In order to ensure the goals of the Company are achieved and to align them with transparency of processes and corporate governance best practices, this policy guides Petrobras while entering into related-party transactions and dealing with potential conflicts of interest on these transactions, based on the following assumptions and provisions:

- Prioritization of the Company's interests regardless of the counterparty;
- Arm's length basis;
- Compliance with market conditions, especially concerning terms, prices and guarantees or with adequate compensatory payment;
- Accurate and timely disclosure in accordance with applicable authorities.

The Audit Committee must approve in advance transactions between the Company and its associates, the Brazilian Federal Government, including its agencies or similar bodies and controlled entities, taking into account the materiality established by this policy. The Audit Committee reports monthly to the Board of Directors.

Transactions with entities controlled by key management personnel or by their close family members are also approved in advance by the Audit Committee regardless of the amount involved.

Transactions with the Brazilian Federal Government, including its agencies or similar bodies and controlled entities, which are under the scope of Board of Directors approval, must be preceded by the Audit Committee and Minority Shareholders Committee assessment and must have prior approval of, at least, 2/3 of the board members.

The related-party transactions policy also aims to ensure an adequate and diligent decision-making process for the Company's key management.

37.1. Transactions with joint ventures, associates, government entities and pension plans

The Company has engaged, and expects to continue to engage, in the ordinary course of business in numerous transactions with joint ventures, associates, pension plans, as well as with the Company's controlling shareholder, the Brazilian Federal Government, which include transactions with banks and other entities under its control, such as financing and banking, asset management and other transactions.

The balances of significant transactions are set out in the following table:

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	12.31.2019		12.31.2018	
	Assets	Liabilities	Assets	Liabilities
Joint ventures and associates				
Petrobras Distribuidora (BR)	224	47	-	-
Natural Gas Transportation Companies	150	717	92	336
State-controlled gas distributors (joint ventures)	338	104	307	114
Petrochemical companies (associates)	47	29	90	7
Other associates and joint ventures	35	203	193	408
Subtotal	794	1,100	682	865
Brazilian government – Parent and its controlled entities				
Government bonds	1,580	-	1,958	-
Banks controlled by the Brazilian Government	8,584	4,904	7,445	10,332
Receivables from the Electricity sector (note 13.4)	334	-	4,400	-
Petroleum and alcohol account - receivables from the Brazilian Government	304	-	307	-
Diesel Price Subsidy Program	-	-	400	-
Brazilian Federal Government - dividends	-	417	-	324
Empresa Brasileira de Administração de Petróleo e Gás Natural – Pré-Sal Petróleo S.A. – PPSA	-	20	-	144
Others	45	43	64	121
Subtotal	10,847	5,384	14,574	10,921
Pension plans	60	110	59	96
Total	11,701	6,594	15,315	11,882
Current	2,849	1,904	4,345	2,528
Non-Current	8,852	4,690	10,970	9,354
Total	11,701	6,594	15,315	11,882

(*) Purchase of crude oil and natural gas and Production Individualization Agreements (AIPs).

The income/expenses of significant transactions are set out in the following table:

	2019	2018	2017
	Jan-Dec	Jan-Dec	Jan-Dec
Joint ventures and associates			
Petrobras Distribuidora (BR)	7,242	–	–
Natural Gas Transportation Companies	(1,858)	(932)	(1,040)
State-controlled gas distributors (joint ventures)	2,812	2,306	2,203
Petrochemical companies (associates)	2,926	3,762	3,847
Other associates and joint ventures	208	36	407
Subtotal	11,330	5,172	5,417
Brazilian government – Parent and its controlled entities			
Government bonds	107	109	153
Banks controlled by the Brazilian Government	(652)	(902)	(1,466)
Receivables from the Electricity sector (note 5.4)	300	1,713	643
Petroleum and alcohol account - receivables from the Brazilian Government	8	92	1
Diesel Price Subsidy Program	–	1,559	–
Brazilian Federal Government - dividends	(4)	3	–
 Empresa Brasileira de Administração de Petróleo e Gás Natural – Pré-Sal Petróleo S.A. – PPSA	 (110)	 (461)	 –
Others	(130)	144	227
Subtotal	(482)	2,257	(442)
Total	10,848	7,429	4,975
Revenues, mainly sales revenues	13,748	8,733	7,517
Purchases and services	(2,591)	(2,239)	(1,588)
Foreign exchange and inflation indexation charges, net	(395)	(316)	239
Finance income (expenses), net	87	1,251	(1,193)
Total	10,848	7,429	4,975

In addition to the aforementioned transactions, Petrobras and the Brazilian Federal Government entered into the Assignment Agreement in 2010, which grants the Company the right to carry out prospecting and drilling activities for hydrocarbons located in the pre-salt area limited to the production of five billion barrels of oil equivalent. For detailed information on Assignment Agreement, see note 9.

During the second quarter of 2019, the wholly owned subsidiary Transpetro signed an agreement with Transportadora Associada de Gás SA - TAG, an associate of Petrobras since June 13, 2019, to provide technical support services for gas transportation for a period of ten years.

For more information on the disposal of TAG, see note 9.

37.1.1. Diesel Price Subsidy Program

In 2018, after risk assessment, the Company joined the Diesel Price Subsidy Program established by the Brazilian Federal Government, specifically for that year. This program granted reimbursements to diesel producers and importers to the extent that their selling prices to the domestic distributors were equal or lower than prices determined by relevant regulation.

Through December 31, 2018, the Company accounted for US\$ 1,415 as revenues with respect to sales within the second and third phases of the program. Of this amount, US\$ 1,157 was disbursed to the Company in 2018, and the remaining balance through February 2019.

37.1.2. Accounting policy

A government grant is recognized when there is reasonable assurance that the grant will be received and the Company will comply with the conditions attached to the grant.

37.1.3. Petroleum and Alcohol accounts - Receivables from the Brazilian Federal Government

Pursuant to Provisional Measure 2,181 of August 24, 2001, the Brazilian Federal Government may settle the balance of receivables related to the Petroleum and Alcohol accounts by using National Treasury Notes in an amount equal to the outstanding balance, or allow the Company to offset the outstanding balance against amounts payable to the Federal Government, including taxes payable, or both.

Following several negotiation attempts at the administrative level, the Company filed a lawsuit in July 2011 to collect the receivables. In October 2016, the court ruled in favor of the Company disallowing the use of an alleged debt from the liquidated company of the group, Petrobras Comércio Internacional S.A. – Interbrás, by the Brazilian Federal Government, when offsetting the outstanding balance. In July 2017, the Brazilian Federal Government appealed the ruling and, shortly after, the Regional Federal Court (*Tribunal Regional Federal – TRF*) denied the appeal, sustained the aforementioned ruling from 2016 and determined the settlement of the amount owed by the Brazilian Federal Government including inflation charges from August 2011 based on the National Consumer Price Index – IPCA and interest at rates provided for the Brazilian Federal Justice.

In September 2018, the Brazilian Supreme Court ruled on a decision of including inflation indexation on an amount to be paid by the Brazilian Federal Government with respect to another proceeding in which the Company is not a party. According to this decision, such inflation charges were stayed and this decision affects all similar claims in which the Brazilian Federal Government is a party.

In October 2019, the Superior Federal Court (*Superior Tribunal Federal – STF*) dismissed the Brazilian Federal Government's appeal, maintaining the inflation indexation by the IPCA-E, according to the TRF ruling. Considering that the STF decision mentioned above has not yet become final and that the Brazilian Federal Government may challenge the Compliance with Judgment that Petrobras would present, the indexation to the IPCA-E, amounting to US\$ 277 at December 31, 2019, remains unrecorded as it is classified as a contingent asset.

As of December 31, 2018, the balance of receivables related to the Petroleum and Alcohol accounts was US\$ 304 (US\$ 307 as of December 31, 2018), recorded within non-current assets.

On November 1, 2019, Petrobras presented Compliance with Judgment in the case file, intending to receive the amounts due by the Brazilian Federal Government. The proceeding is awaiting a decision from the judge and a subpoena of the Federal Government to proceed.

37.2. Compensation of key management personnel

The criteria for compensation of employees and officers are established based on the relevant labor legislation and the Company's Positions, Salaries and Benefits Plan (*Plano de Cargos e Salários e de Benefícios e Vantagens*).

The compensation of employees (including those occupying managerial positions) and officers in December 2019 and December 2018 were:

Compensation of employees, excluding officers (amounts in U.S. dollars)	Dec/2019	Dec/2018
Lowest compensation	928	973
Average compensation	4,985	4,961
Highest compensation	26,602	27,219
Compensation of highest paid Petrobras officer	28,038	30,659

The compensation of Executive Officers and Board Members of Petrobras parent company, which are based on the assumptions governed by the Secretariat of Management and Governance of the State-owned Companies (*Secretaria de Coordenação e Governança das Empresas Estatais – SEST*) and the Ministry of Mines and Energy, is set out as follows

	Jan-Dec/2019			Jan-Dec/2018		
	Officers	Board members	Total	Officers	Board members	Total
Wages and short-term benefits	2.9	0.3	3.2	3.6	0.4	4.0
Social security and other employee-related taxes	1.0	–	1.0	1.0	–	1.0
Post-employment benefits (pension plan)	0.4	–	0.4	0.3	–	0.3
Variable compensation	2.8	–	2.8	1.4	–	1.4
Benefits due to termination of tenure	0.4	–	0.4	0.5	–	0.5
Total compensation recognized in the statement of income	7.5	0.3	7.8	6.8	0.4	7.2
Total compensation paid	6.0	–	6.0	4.9	0.4	5.3
Average number of members in the period (*)	7.67	9.75	17.42	7.92	10.08	18.00
Average number of paid members in the period (**)	7.67	5.00	12.67	7.92	6.00	13.92

(*) Monthly average number of members.

(**) Monthly average number of paid members.

For the year ended December 31, 2019, charges related to compensation of the board members and executive officers of the Petrobras group amounted to US\$ 15 (US\$ 24.2 for the year ended December 31, 2018).

On September 30, 2019, the Company's Extraordinary General Meeting approved a change in the overall compensation for executive officers and board members, given the creation of the Executive Office of Digital Transformation and Innovation, setting the total compensation threshold at US\$ 8.2 from April 2019 to March 2020.

The compensation of the Advisory Committees to the Board of Directors is apart from the fixed compensation set for the Board Members and, therefore, has not been classified under compensation of Petrobras' key management personnel.

In accordance with Brazilian regulations applicable to companies controlled by the Brazilian Federal Government, Board members who are also members of the Audit Committee or Audit Committee of the Petrobras Conglomerate are only compensated with respect to their Audit Committee duties. The total compensation concerning these members was US\$ 431 thousand for the year ended December 31, 2019 (US\$ 507 thousand with social security and related charges).

In 2018, the Board of Directors approved the variable compensation program (PRV) of the Board of Executive Officers for the year 2018. The amount of compensation to be paid varies according to the percentage of achievement of the financial and operational targets. The program foresees compensations being disbursed through 5 years.

Exemption from damage (indemnity)

The company's bylaws establishes the obligation to indemnify and keep the officers without losses, members with statutory functions and other employees and agents that legally act through officers' delegation, so as to cope with certain expenses related to arbitration, judicial or administrative processes that involve acts performed in the exercise of their duties or powers, since the date of your possession or the since the beginning of the contractual relation with the Company.

The period of the agreement coverage began on December 18, 2018 and continues until the occurrence of the following events, whichever comes last: (i) the end of the fifth (5th) year following the date on which the beneficiary leave, for any reason, to exercise the mandate, function or position; (ii) the course of the time required in transit of any Process in which the Beneficiary is partly due to the practice of Regular Management Act; or (iii) the course of the limitation period according to law to events that can generate the obligations of indemnification by the Company, including, but not limited to, the criminal statute applicable deadline, even if such period is applied by administrative authorities. The maximum exposure established by the company (global limit for all eventual claims) until April 2020 is US\$ 500.

Indemnity agreements shall not cover: (i) acts covered under and insurance policy purchased by the Company, as formally recognized and implemented by the insurance company; (ii) acts outside the regular exercise of the duties or powers of the Beneficiaries; (iii) acts in bad faith act, malicious acts, fraud or serious fault on the part of the Beneficiaries; (iv) self-interested acts or in favor of third parties that damage the company's social interest; (v) obligation to pay damages arising from social action according to article 159 of Law 6,404/76 or reimbursement of the damages according to art. 11, § 5º, II of Law 6,385/76; (iv) other cases where a manifest conflict of interest with the company is established. It is worth noting that after a final unappealable decision, if it is proved that the act performed by the beneficiary is not subject to indemnification, the beneficiary is obligated to return the advanced amounts to the company.

In case of potential conflicts of interest, it is important to mention that the company may hire outside professionals, with a principled, impartial and independent reputation and with a strong experience to evaluate eventual indemnity lawsuits, verifying whether or not the act will be covered. In addition, the beneficiary of an indemnity agreement would be prevented from attending meetings or discussions concerning the payment approval of his or her own expenses.

38. Supplemental information on statement of cash flows

	Jan-Dec/2019	Jan-Dec/2018
Amounts paid/received during the period:		
Withholding income tax paid on behalf of third-parties	1,165	839
Capital expenditures and financing activities not involving cash		
Purchase of property, plant and equipment on credit	76	137
Lease (*)	2,301	-
Provision/(reversals) for decommissioning costs	5,497	4,777
Use of deferred tax and judicial deposit for the payment of contingency	3	60

(*) The effects arising from the adoption of IFRS 16 are set out in note 33.

39. Information related to guaranteed securities issued by subsidiaries

39.1. Petrobras Global Finance B.V. (PGF)

Petróleo Brasileiro S.A. - Petrobras fully and unconditionally guarantees the debt securities issued by Petrobras Global Finance B.V. (PGF), a 100-percent-owned finance subsidiary of Petrobras. There are no significant restrictions on the ability of Petrobras to obtain funds from PGF.

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Supplementary information on Oil and Gas Exploration and Production (unaudited)

(Expressed in millions of US Dollars, unless otherwise indicated)

Supplementary information on Oil and Gas Exploration and Production (unaudited)

This section provides supplemental information on oil and gas exploration and production activities of the Company. The information included in items (i) through (iii) provides historical cost information pertaining to costs incurred in exploration, property acquisition and development, capitalized costs and results of operations. The information included in items (iv) and (v) presents information on Petrobras' estimated net proved reserve quantities, standardized measure of estimated discounted future net cash flows related to proven reserves, and changes in estimated discounted future net cash flows.

The Company, on December 31, 2019, maintains activities mainly in Brazil, in addition to activities in Argentina, Colombia and Bolivia, in South America. The equity-accounted investments are comprised of the operations of Petrobras Oil and Gas B.V. (PO&G) in Nigeria, Africa (note 30.1), and the joint venture company of which Murphy Exploration & Production Company ("Murphy") has 80% stake and Petrobras America Inc ("PAI") 20% stake in United States of America, North America. The Company reports its reserves in Brazil, United States of America, Nigeria and Argentina. Bolivian reserves are not included due to restrictions determined by Bolivian Constitution. In Colombia, our activities are exploratory, and therefore, there are no associated reserves.

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Supplementary information on Oil and Gas Exploration and Production (unaudited)

(Expressed in millions of US Dollars, unless otherwise indicated)

i) Capitalized costs relating to oil and gas producing activities

As set out in note 26, the Company uses the successful efforts method of accounting for appraisal and development costs of crude oil and natural gas production. In addition, notes 23.3 and 24.2 presents the accounting policies applied by the Company for recognition, measurement and disclosure of property, plant and equipment and intangible assets.

The following table summarizes capitalized costs for oil and gas exploration and production activities with the related accumulated depreciation, depletion and amortization, and asset retirement obligations:

	Consolidated entities						
	Abroad						
	Brazil	South America	North America	Others	Total	Total	Equity Method Investees
December 31, 2019							
Unproved oil and gas properties	23,063	117	-	-	117	23,180	-
Proved oil and gas properties	81,063	135	-	-	135	81,198	4,202
Support Equipment	88,289	687	-	1	688	88,977	-
Gross Capitalized costs	192,414	940	-	1	941	193,355	4,202
Depreciation, depletion and amortization	(51,332)	(581)	-	(1)	(582)	(51,914)	(1,690)
Net capitalized costs	141,081	359	-	-	359	141,441	2,513
December 31, 2018							
Unproved oil and gas properties	5,999	112	-	-	112	6,111	-
Proved oil and gas properties	88,572	144	-	-	144	88,716	4,091
Support Equipment	83,822	649	-	389	1,038	84,860	6
Gross Capitalized costs	178,393	905	-	389	1,294	179,687	4,097
Depreciation, depletion and amortization	(60,890)	(544)	-	(29)	(573)	(61,463)	(1,410)
Net capitalized costs	117,503	361	-	360	721	118,224	2,687
December 31, 2017							
Unproved oil and gas properties	5,803	109	-	-	109	5,912	-
Proved oil and gas properties	96,195	111	4,656	-	4,767	100,962	3,134
Support Equipment	86,021	606	81	392	1,079	87,100	6
Gross Capitalized costs	188,019	826	4,737	392	5,955	193,974	3,140
Depreciation, depletion and amortization	(63,245)	(504)	(2,217)	(12)	(2,733)	(65,978)	(1,287)
Net capitalized costs	124,774	322	2,520	380	3,222	127,996	1,853

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Supplementary information on Oil and Gas Exploration and Production (unaudited)

(Expressed in millions of US Dollars, unless otherwise indicated)

ii) Costs incurred in oil and gas property acquisition, exploration and development activities

Costs incurred are summarized below and include both amounts expensed and capitalized:

	Consolidated entities						
	Abroad						
	Brazil	South America	North America	Others	Total	Total	Equity Method Investees
December 31, 2019							
Acquisition costs:							
Proved	-	-	-	-	-	-	-
Unproved (*)	16,670	-	-	-	-	16,670	-
Exploration costs	1,069	11	-	-	11	1,080	3
Development costs	6,819	6	-	-	6	6,825	150
Total	24,558	17	-	-	17	24,575	153
December 31, 2018							
Acquisition costs:							
Proved	-	-	-	-	-	-	-
Unproved	832	-	-	-	-	832	-
Exploration costs	776	10	1	-	11	787	5
Development costs	9,685	32	229	-	261	9,946	252
Total	11,293	43	230	-	272	11,565	257
December 31, 2017							
Acquisition costs:							
Proved	-	-	-	-	-	-	-
Unproved	903	-	-	-	-	903	-
Exploration costs	1,223	33	4	-	37	1,260	4
Development costs	11,553	23	230	-	253	11,806	294
Total	13,679	56	234	-	290	13,969	298

(*) Mainly acquisition of oil exploration rights - Transfer of Rights, according to note 23.4

(iii) Results of operations for oil and gas producing activities

The Company's results of operations from oil and gas producing activities for the years ended December 31, 2019, 2018 and 2017 are shown in the following table. The Company transfers substantially all of its Brazilian crude oil and gas production to the Refining, Transportation & Marketing segment in Brazil. The internal transfer prices calculated by the Company's model may not be indicative of the price the Company would have realized had this production been sold in an unregulated spot market. Additionally, the prices calculated by the Company's model may not be indicative of the future prices to be realized by the Company. Gas prices used are those set out in contracts with third parties.

Production costs are lifting costs incurred to operate and maintain productive wells and related equipment and facilities, including operating employees' compensation, materials, supplies, fuel consumed in operations and operating costs related to natural gas processing plants.

Exploration expenses include the costs of geological and geophysical activities and projects without economic feasibility. Depreciation and amortization expenses relate to assets employed in exploration and development activities. In accordance with Codification Topic 932 – Extractive Activities – Oil and Gas, income taxes are based on statutory tax rates, reflecting allowable deductions. Interest income and expense are excluded from the results reported in this table.

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(Expressed in millions of US Dollars, unless otherwise indicated)

	Consolidated entities						
	Abroad						
	Brazil	South America	North America	Others	Total	Total	Equity Method Investees
December 31, 2019							
Net operation revenues:							
Sales to third parties	888	174	-	-	174	1,062	1,114
Intersegment	49,400	-	-	-	-	49,400	
	50,288	174	-	-	174	50,462	1,114
Production costs	(15,749)	(69)	-	-	(69)	(15,818)	(124)
Exploration expenses	(793)	(6)	-	-	(6)	(799)	(5)
Depreciation, depletion and amortization	(11,436)	(37)	-	(13)	(50)	(11,486)	(292)
Impairment of oil and gas properties	(1,535)	-	-	(421)	(421)	(1,956)	-
Other operating expenses	(1,420)	(13)	41	(34)	(6)	(1,426)	(20)
Results before income tax expenses	19,354	50	41	(468)	(377)	18,977	672
Income tax expenses	(6,579)	(17)	(14)	159	128	(6,451)	(229)
Results of operations (excluding corporate overhead and interest costs)	12,775	33	27	(309)	(249)	12,526	443
December 31, 2018							
Net operation revenues:							
Sales to third parties	1,142	190	998	-	1,188	2,330	375
Intersegment	50,052	-	-	-	-	50,052	-
	51,194	190	998	-	1,188	52,382	375
Production costs	(19,741)	(77)	(152)	-	(229)	(19,970)	(40)
Exploration expenses	(516)	(7)	(1)	-	(8)	(524)	(2)
Depreciation, depletion and amortization	(8,716)	(40)	(221)	(21)	(282)	(8,998)	(109)
Impairment of oil and gas properties	(686)	-	(705)	-	(705)	(1,391)	-
Other operating expenses	(2,188)	(839)	(88)	(38)	(965)	(3,153)	(12)
Results before income tax expenses	19,347	(773)	(169)	(59)	(1,001)	18,346	212
Income tax expenses	(6,576)	263	57	20	340	(6,236)	(162)
Results of operations (excluding corporate overhead and interest costs)	12,771	(510)	(112)	(39)	(661)	12,110	50
December 31, 2017							
Net operation revenues:							
Sales to third parties	482	215	725	-	940	1,422	443
Intersegment	40,762	-	-	-	-	40,762	-
	41,244	215	725	-	940	42,184	443
Production costs	(17,894)	(71)	(163)	-	(234)	(18,128)	(51)
Exploration expenses	(686)	(37)	(77)	-	(114)	(800)	1
Depreciation, depletion and amortization	9,466	(44)	(302)	(8)	(354)	(9,820)	(123)
Impairment of oil and gas properties	169	(13)	(113)	-	(126)	43	-
Other operating expenses	(2,571)	(12)	(125)	(274)	(411)	(2,982)	(19)
Results before income tax expenses	10,796	38	(55)	(282)	(299)	10,497	251
Income tax expenses	3,672	(13)	18	96	101	(3,571)	(98)
Results of operations (excluding corporate overhead and interest costs)	7,124	25	(37)	(186)	(198)	6,926	153

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(iv) Reserve quantities information

As presented in note 4.1, 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, unless evidence indicates that renewal is reasonably certain. The project to extract the hydrocarbons must have commenced or there must be reasonable certainty that the project will commence within a reasonable time. Reserves estimate involves a high degree of judgment and complexity and its application affects different items of these Financial Statements.

The Company's estimated net proved oil and gas reserves and changes thereto for the years 2019, 2018 and 2017 are shown in the following table. Proved reserves are estimated in accordance with the reserve definitions prescribed by the Securities and Exchange Commission.

Proved developed oil and gas reserves are proved reserves that can be expected to be recovered: (i) through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and (ii) through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is done by means not involving a well.

In some cases, substantial new investments in additional wells and related facilities will be required to recover these proved reserves and are named proved undeveloped reserves.

Reserve estimates are subject to variations due to technical uncertainties in the reservoir and changes in economic scenarios. A summary of the annual changes in the proved reserves of oil is as follows (in millions of barrels):

Proved developed and undeveloped reserves - Consolidated Entities (*)	Abroad				Total of crude oil abroad	Synthetic oil in Brazil	Total
	Crude oil in Brazil	South America	North America	Africa			
Reserves at December 31, 2016	8,063.0	0.8	96.4	-	97.3	6.8	8,167.1
Revisions of previous estimates	649.3	0.3	31.4	-	31.7	0.2	681.1
Extensions and discoveries	69.1	0.3	-	-	0.3	-	69.4
Improved Recovery	212.7	-	-	-	-	-	212.7
Production for the year	(744.6)	(0.2)	(13.2)	-	(13.4)	(1.0)	(759.0)
Reserves at December 31, 2017 (1)	8,249.4	1.2	114.6	-	115.8	6.0	8,371.3
Transfers by loss of control (2)	-	-	(100.4)	-	(100.4)	-	(100.4)
Revisions of previous estimates	342.7	-	-	-	-	(0.3)	342.5
Extensions and discoveries	308.5	0.6	-	-	0.6	-	309.1
Improved Recovery	224.2	-	-	-	-	-	224.2
Sales of reserves	(254.8)	-	-	-	-	-	(254.8)
Production for the year	(701.3)	(0.3)	(14.3)	-	(14.5)	(0.9)	(716.8)
Reserves at December 31, 2018	8,168.7	1.6	-	-	1.6	4.8	8,175.1
Revisions of previous estimates	718.8	-	-	-	-	-	718.8
Extensions and discoveries	17.5	-	-	-	-	3.6	21.1
Sales of reserves	(68.3)	-	-	-	-	-	(68.3)
Production for the year	(753.9)	(0.2)	-	-	(0.2)	(0.8)	(754.8)
Reserves at December 31, 2019	8,082.8	1.4	-	-	1.4	7.7	8,091.9

(1) In 2017, total proved reserves includes 263.7 million barrels related to assets held for sale.

(2) Amounts transferred from consolidated entities to equity method investees, as the Company concluded the operation that has resulted in the formation of a joint venture company ("JV"), of which Murphy Exploration & Production Company ("Murphy") has 80% stake and Petrobras America Inc ("PAI") 20% stake.

(*) Apparent differences in the sum of the numbers are due to rounding off.

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Proved developed and undeveloped reserves - Equity Method Investees (*)	Abroad						Total
	Crude oil in Brazil	South America	North America	Africa	Total of crude oil abroad	Brazil's Synthetic Oil	
Reserves at December 31, 2016	-	-	-	69.0	69.0	-	69.0
Revisions of previous estimates	-	-	-	2.6	2.6	-	2.6
Production for the year	-	-	-	(8.2)	(8.2)	-	(8.2)
Reserves at December 31, 2017	-	-	-	63.4	63.4	-	63.4
Transfers by loss of control (2)	-	-	100.4	-	100.4	-	100.4
Revisions of previous estimates	-	-	(0.9)	3.7	2.9	-	2.9
Sales of reserves	-	-	(80.4)	-	(80.4)	-	(80.4)
Purchases of reserves	-	-	7.9	-	7.9	-	7.9
Production for the year	-	-	(0.4)	(7.3)	(7.7)	-	(7.7)
Reserves at December 31, 2018 (1)	-	-	26.6	59.8	86.4	-	86.4
Revisions of previous estimates	-	-	0.7	(6.5)	(5.8)	-	(5.8)
Extensions and discoveries	-	-	-	0.6	0.6	-	0.6
Production for the year	-	-	(4.7)	(12.3)	(16.9)	-	(16.9)
Reserves at December 31, 2019 (1)	-	-	22.7	41.6	64.2	-	64.2

(1) In 2018, total proved reserves includes 59.8 million barrels related to PO&G assets held for sale. In 2019, total proved reserves include 41.6 million barrels of assets held for sale (PO&G).

(2) Amounts transferred from consolidated entities to equity method investees, as the Company concluded the operation that has resulted in the formation of a joint venture company ("JV"), of which Murphy Exploration & Production Company ("Murphy") has 80% stake and Petrobras America Inc ("PAI") 20% stake.

(*) Apparent differences in the sum of the numbers are due to rounding off.

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A summary of the annual changes in the proved reserves of natural gas is as follows (in billions of cubic feet):

Proved developed and undeveloped reserves - Consolidated Entities (*)	Abroad						Total
	Natural Gas in Brazil	South America	North America	Africa	Total Natural Gas Abroad	Brazil's Synthetic Gas	
Reserves at December 31, 2016	8,394.0	113.9	87.2	-	201.1	9.2	8,604.3
Revisions of previous estimates	(81.5)	19.5	(24.9)	-	(5.5)	0.1	(86.9)
Extensions and discoveries	37.4	41.0	-	-	41.0	-	78.4
Improved Recovery	204.2	-	-	-	-	-	204.2
Production for the year	(877.9)	(14.2)	(21.3)	-	(35.5)	(1.2)	(914.6)
Reserves at December 31, 2017 (1)	7,676.1	160.2	40.9	-	201.1	8.1	7,885.3
Transfers by loss of control (2)	-	-	(36.8)	-	(36.8)	-	(36.8)
Revisions of previous estimates	737.2	-	-	-	-	(1.0)	736.2
Extensions and discoveries	136.8	70.1	-	-	70.1	-	206.9
Improved Recovery	207.6	-	-	-	-	-	207.6
Sales of reserves	(165.5)	-	-	-	-	-	(165.5)
Production for the year	(801.8)	(16.2)	(4.1)	-	(20.3)	(1.3)	(823.5)
Reserves at December 31, 2018	7,790.5	214.1	-	-	214.1	5.7	8,010.3
Revisions of previous estimates	1,415.7	(42.3)	-	-	(42.3)	-	1,373.4
Extensions and discoveries	15.3	-	-	-	-	7.6	22.9
Sales of reserves	(24.0)	-	-	-	-	-	(24.0)
Production for the year	(816.9)	(15.5)	-	-	(15.5)	(1.2)	(833.7)
Reserves at December 31, 2019	8,380.6	156.3	-	-	156.3	12.1	8,549.0

(1) In 2017, total proved reserves includes 173.7 billion cubic feet related to assets held for sale.

(2) Amounts transferred from consolidated entities to equity method investees, as the Company concluded the operation that has resulted in the formation of a joint venture company ("JV"), of which Murphy Exploration & Production Company ("Murphy") has 80% stake and Petrobras America Inc ("PAI") 20% stake.

(*) Apparent differences in the sum of the numbers are due to rounding off.

Proved developed and undeveloped reserves - Equity Method Investees (*)	Abroad						Total
	Natural Gas in Brazil	South America	North America	Africa	Total Natural Gas Abroad	Brazil's Synthetic Gas	
Reserves at December 31, 2016	-	-	-	12.5	12.5	-	12.5
Revisions of previous estimates	-	-	-	5.7	5.7	-	5.7
Production for the year	-	-	-	(0.9)	(0.9)	-	(0.9)
Reserves at December 31, 2017	-	-	-	17.3	17.3	-	17.3
Transfers by loss of control (2)	-	-	36.8	-	36.8	-	36.8
Revisions of previous estimates	-	-	(3.1)	34.8	31.8	-	31.8
Sales of reserves	-	-	(29.7)	-	(29.7)	-	(29.7)
Purchases of reserves	-	-	6.9	-	6.9	-	6.9
Production for the year	-	-	(0.1)	(4.8)	(4.9)	-	(4.9)
Reserves at December 31, 2018 (1)	-	-	10.8	47.3	58.1	-	58.1
Revisions of previous estimates	-	-	0.1	10.9	11.0	-	11.0
Extensions and discoveries	-	-	-	0.3	0.3	-	0.3
Production for the year	-	-	(1.7)	(11.3)	(13.0)	-	(13.0)
Reserves at December 31, 2019 (1)	-	-	9.2	47.2	56.4	-	56.4

1) In 2018, total proved reserves includes 47.3 billion cubic feet related to PO&G assets held for sale. In 2019, total proved reserves includes 47.2 billion cubic feet related to PO&G assets held for sale.

(2) Amounts transferred from consolidated entities to equity method investees, as the Company concluded the operation that has resulted in the formation of a joint venture company ("JV"), of which Murphy Exploration & Production Company ("Murphy") has 80% stake and Petrobras America Inc ("PAI") 20% stake.

(*) Apparent differences in the sum of the numbers are due to rounding off.

Natural gas production volumes used in these tables are the net volumes withdrawn from our proved reserves, including gas consumed in operations and excluding reinjected gas. Our disclosure of proved gas reserves includes gas volumes consumed, which represent 34% of our total proved reserves of natural gas at December, 2019.

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The tables below summarize information about the changes in total proved reserves of crude oil and natural gas, in millions of barrels of oil equivalent, in our consolidated entities and equity method investees for 2019, 2018 and 2017:

Abroad							
Proved developed and undeveloped reserves – Consolidated Entities (*)	Oil equivalent in Brazil	South America	North America	Africa	Total oil equivalent abroad	Total synthetic oil equivalent in Brazil	Total for all products
Reserves at December 31, 2016	9,462.0	19.8	111.0	-	130.8	8.3	9,601.1
Revisions of previous estimates	635.7	3.5	27.2	-	30.7	0.2	666.6
Extensions and discoveries	75.4	7.1	-	-	7.1	-	82.5
Improved Recovery	246.7	-	-	-	-	-	246.7
Production for the year	(891.0)	(2.6)	(16.7)	-	(19.3)	(1.2)	(911.4)
Reserves at December 31, 2017 (1)	9,528.8	27.9	121.5	-	149.3	7.4	9,685.5
Transfers by loss of control (2)	-	-	(106.5)	-	(106.5)	-	(106.5)
Revisions of previous estimates	465.6	-	-	-	-	(0.4)	465.2
Extensions and discoveries	331.3	12.3	-	-	12.3	-	343.6
Improved Recovery	258.8	-	-	-	-	-	258.8
Sales of reserves	(282.4)	-	-	-	-	-	(282.4)
Production for the year	(834.9)	(3.0)	(15.0)	-	(17.9)	(1.2)	(854.0)
Reserves at December 31, 2018	9,467.1	37.2	-	-	37.2	5.8	9,510.1
Revisions of previous estimates	954.7	(7.0)	-	-	(7.0)	-	947.7
Extensions and discoveries	20.1	-	-	-	-	4.9	25.0
Sales of reserves	(72.3)	-	-	-	-	-	(72.3)
Production for the year	(890.0)	(2.8)	-	-	(2.8)	(1.0)	(893.8)
Reserves at December 31, 2019	9,479.6	27.4	-	-	27.4	9.7	9,516.7

(1) In 2017, total proved reserves includes 292.7 million barrels of oil equivalent related to assets held for sale.

(2) Amounts transferred from consolidated entities to equity method investees, as the Company concluded the operation that has resulted in the formation of a joint venture company ("JV"), of which Murphy Exploration & Production Company ("Murphy") has 80% stake and Petrobras America Inc ("PAI") 20% stake.

(*) Apparent differences in the sum of the numbers are due to rounding off.

Abroad							
Proved developed and undeveloped reserves - Equity Method Investees (*)	Oil equivalent in Brazil	South America	North America	Africa	Total oil equivalent abroad	Total synthetic oil equivalent in Brazil	Total for all products
Reserves at December 31, 2016	-	0.0	-	71.1	71.1	-	71.1
Revisions of previous estimates	-	-	-	3.5	3.5	-	3.5
Production for the year	-	-	-	(8.3)	(8.3)	-	(8.3)
Reserves at December 31, 2017	-	-	-	66.3	66.3	-	66.3
Transfers by loss of control (2)	-	-	106.5	-	106.5	-	106.5
Revisions of previous estimates	-	-	(1.4)	9.6	8.2	-	8.2
Sales of reserves	-	-	(85.4)	-	(85.4)	-	(85.4)
Purchases of reserves	-	-	9.1	-	9.1	-	9.1
Production for the year	-	-	(0.5)	(8.1)	(8.6)	-	(8.6)
Reserves at December 31, 2018 (1)	-	-	28.4	67.7	96.1	-	96.1
Revisions of previous estimates	-	-	0.7	(4.7)	(4.0)	-	(4.0)
Extensions and discoveries	-	-	-	0.6	0.6	-	0.6
Production for the year	-	-	(4.9)	(14.1)	(19.1)	-	(19.1)
Reserves at December 31, 2019 (1)	-	-	24.2	49.5	73.6	-	73.6

(1) In 2018, total proved reserves includes 67.7 million barrels of oil equivalent related to PO&G assets held for sale. In 2019, total proved reserves includes 49.5 million barrels of oil equivalent related to PO&G assets held for sale.

(2) Amounts transferred from consolidated entities to equity method investees, as the Company concluded the operation that has resulted in the formation of a joint venture company ("JV"), of which Murphy Exploration & Production Company ("Murphy") has 80% stake and Petrobras America Inc ("PAI") 20% stake.

(*) Apparent differences in the sum of the numbers are due to rounding off.

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					Abroad		
Proved developed and undeveloped reserves - Consolidated and Equity Method Investees (*)	Oil equivalent in Brazil	South America	North America	Africa	Total oil equivalent abroad	Total synthetic oil equivalent in Brazil	Total for all products
Reserves at December 31, 2016	9,462.0	19.8	111.0	71.1	201.8	8.3	9,672.2
Revisions of previous estimates	635.7	3.5	27.2	3.5	34.3	0.2	670.1
Extensions and discoveries	75.4	7.1	-	-	7.1	-	82.5
Improved Recovery	246.7	-	-	-	-	-	246.7
Production for the year	(891.0)	(2.6)	(16.7)	(8.3)	(27.7)	(1.2)	(919.8)
Reserves at December 31, 2017 (1)	9,528.8	27.9	121.5	66.3	215.6	7.4	9,751.7
Revisions of previous estimates	465.6	-	(1.4)	9.6	8.2	(0.4)	473.3
Extensions and discoveries	331.3	12.3	-	-	12.3	-	343.6
Improved Recovery	258.8	-	-	-	-	-	258.8
Sales of reserves	(282.4)	-	(85.4)	-	(85.4)	-	(367.8)
Purchases of reserves	-	-	9.1	-	9.1	-	9.1
Production for the year	(834.9)	(3.0)	(15.4)	(8.1)	(26.5)	(1.2)	(862.6)
Reserves at December 31, 2018 (1)	9,467.1	37.2	28.4	67.7	133.3	5.8	9,606.2
Revisions of previous estimates	954.7	(7.0)	0.7	(4.7)	(11.0)	-	943.7
Extensions and discoveries	20.1	-	-	0.6	0.6	4.9	25.6
Sales of reserves	(72.3)	-	-	-	-	-	(72.3)
Production for the year	(890.0)	(2.8)	(4.9)	(14.1)	(21.9)	(1.0)	(912.8)
Reserves at December 31, 2019 (1)	9,479.6	27.4	24.2	49.5	101.1	9.7	9,590.4

(1) In 2017, total proved reserves includes 292.7 million barrels of oil equivalent related to assets held for sale in Brazil; in 2018, includes 67.7 million barrels of oil equivalent related to PO&G assets held for sale in Africa; and in 2019, includes 49.5 million barrels of oil equivalent related to assets held for sale in Africa.

(*) Apparent differences in the sum of the numbers are due to rounding off.

In 2019, we incorporated 943.7 million boe of reserves proved by revisions of previous estimates, composed of:

- (i) addition of 529.1 million boe due to technical reviews, mainly associated with good performance and increased production experience of pre-salt reservoirs in the Santos Basin;
- (ii) addition of 266.8 million boe referring to contractual revisions, including the reallocation of volumes due to the revision of the Transfer of Rights agreement, and the extension of concession contracts in Brazil;
- (iii) addition of 242.6 million boe due to the approval of new projects in the Santos, Campos and Espírito Santo Basins; and
- (iv) a 94.8 million boe reduction due to economic revisions, mainly due to the price reduction.

We also incorporated 25.6 million boe into our proved reserves due to discoveries and extensions, mainly in the Santos Basin pre-salt, and reduced 72.3 million boe from our proved reserves due to proved reserve sales.

Considering the production of 912.8 million boe in 2019 and the variations above, the company's total proved reserve resulted in 9,590.4 million boe in 2019. Production refers to volumes that were included in our reserves and, therefore, does not consider natural gas liquids, since the reserve is estimated at a reference point prior to gas processing, except in the United States and Argentina. The production also does not consider volumes of injected gas, the production of Extended Well Tests in exploratory blocks and production in Bolivia, since the Bolivian Constitution does not allow the disclosure of reserves.

In 2018, we incorporated 473.3 million boe of proved reserves by revising of previous estimates, including 233.5 million boe due to economic revisions, mainly due to the increase in prices, and 239.9 million boe due to technical revisions, mainly due to the good performance of reservoirs in the pre-salt layer of Santos and Campos basins, both in Brazil. In addition, we added 258.8 million boe in our proved reserves resulting from positive responses from improved recovery (water injection), and added 343.6 million boe in our proved reserves due to extensions and discoveries, mainly in the pre-salt of Santos basin.

We reduced 367.8 million boe of our proved reserves due to sales of reserves and increased 9.1 million boe in our proved reserves due to purchases of reserves, resulting in a net effect of a decrease of 358.7 million boe in our proved reserves.

Considering a production of 862.6 million boe in 2018 and changes above, the company total proved reserves resulted in 9,606.2 million boe. This 862.6 million boe production volume is the net volume withdrawn from our proved reserves. Therefore, exclude NGL (except for North America), as we estimate our oil and gas reserves at a reference point prior to the gas processing plants, and does not consider the production

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of Extended Well Tests (EWTs) in exploratory blocks and production in Bolivia, since the Bolivian Constitution prohibits the disclosure and registration of its reserves.

In 2017, we incorporated 670.1 million boe of proved reserves by revising of previous estimates, including 355.4 million boe due to economic revisions, mainly due to the increase in prices, and 314.7 million boe due to technical revisions, mainly due to better than forecasted behavior from reservoirs, in the pre-salt layer of Santos and Campos basins, both in Brazil. In addition, we added 246.7 million boe in our proved reserves resulting from positive responses from improved recovery (water injection), and added 82.5 million boe in our proved reserves due to extensions and discoveries, mainly in the pre-salt of Santos basin.

Considering a production of 919.8 million boe in 2017, the company total proved reserves resulted in 9,751.7 million boe. This 919.8 million boe production does not consider the production of Extended Well Tests (EWTs) in exploratory blocks and production in Bolivia, since the Bolivian Constitution prohibits the disclosure and registration of its reserves.

The tables below show the volumes of proved developed and undeveloped reserves, net, that is, reflecting Petrobras' participation:

	2017				
	Crude Oil	Synthetic Oil	Natural Gas	Synthetic Gas	Total oil and gas
	(mmbbl)		(bnct)		(mmboe)
Net proved developed reserves (*):					
Consolidated Entities					
Brazil	4,282.2	6.0	4,515.9	8.1	5,042.2
South America, outside Brazil	0.7	–	56.7	–	10.2
North America	72.1	–	24.2	–	76.1
Total Consolidated Entities	4,355.0	6.0	4,596.8	8.1	5,128.5
Equity Method Investees					
Africa	29.6	–	9.3	–	31.1
Total Equity Method Investees	29.6	–	9.3	–	31.1
Total Consolidated and Equity Method Investees (1)	4,384.6	6.0	4,606.0	8.1	5,159.6
Net proved undeveloped reserves (*):					
Consolidated Entities					
Brazil	3,967.2	–	3,160.2	–	4,493.9
South America, outside Brazil	0.5	–	103.5	–	17.7
North America	42.6	–	16.7	–	45.3
Total Consolidated Entities	4,010.2	–	3,280.5	–	4,557.0
Equity Method Investees					
Africa	33.8	–	8.0	–	35.1
Total Equity Method Investees	33.8	–	8.0	–	35.1
Total Consolidated and Equity Method Investees (1)	4,044.0	–	3,288.5	–	4,592.1
Total proved reserves (developed and undeveloped)	8,428.6	6.0	7,894.5	8.1	9,751.7

(1) It includes amounts related to assets held for sale (191.9 million barrels of oil and 131.8 billion cubic feet of natural gas in net proved developed reserves and 71.9 million barrels of oil and 41.9 billion cubic feet of natural gas in net proved undeveloped reserves) in Brazil.

(*) Apparent differences in the sum of the numbers are due to rounding off.

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Supplementary information on Oil and Gas Exploration and Production (unaudited)

(Expressed in millions of US Dollars, unless otherwise indicated)

	2018				
	Crude Oil	Synthetic Oil	Natural Gas	Synthetic Gas	Total oil and gas
	(mmbbl)		(bncf)		(mmboe)
Net proved developed reserves (*):					
Consolidated Entities					
Brazil	4,339.5	4.8	4,807.0	5.7	5,146.4
South America, outside Brazil	1.0	–	83.5	–	15.0
Total Consolidated Entities	4,340.5	4.8	4,890.5	5.7	5,161.4
Equity Method Investees					
North America (2)	20.0	–	8.3	–	21.4
Africa	30.9	–	27.6	–	35.5
Total Equity Method Investees	51.0	–	35.9	–	56.9
Total Consolidated and Equity Method Investees (1)	4,391.5	4.8	4,926.4	5.7	5,218.3
Net proved undeveloped reserves (*):					
Consolidated Entities					
Brazil	3,829.2	–	2,983.5	–	4,326.4
South America, outside Brazil	0.5	–	130.6	–	22.3
Total Consolidated Entities	3,829.7	–	3,114.1	–	4,348.7
Equity Method Investees					
North America (2)	6.5	–	2.5	–	6.9
Africa	28.9	–	19.7	–	32.2
Total Equity Method Investees	35.4	–	22.2	–	39.1
Total Consolidated and Equity Method Investees (1)	3,865.1	–	3,136.3	–	4,387.9
Total proved reserves (developed and undeveloped)	8,256.6	4.8	8,062.7	5.7	9,606.2

(1) It includes amounts related to assets held for sale (30.9 million barrels of oil and 27.6 billion cubic feet of natural gas in net proved developed reserves and 28.9 million barrels of oil and 19.7 billion cubic feet of natural gas in net proved undeveloped reserves) in Africa (PO&G).

(2) North America oil reserves includes 4.2% of natural gas liquid (NGL) in proved developed reserves and 3.6% of NGL in proved undeveloped reserves.

(*) Apparent differences in the sum of the numbers are due to rounding off.

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(Expressed in millions of US Dollars, unless otherwise indicated)

2019					
	Crude Oil	Synthetic Oil	Natural Gas	Synthetic Gas	Total oil and gas
	(mmbbl)		(bncf)		(mmboe)
Net proved developed reserves (*):					
Consolidated Entities					
Brazil	4,999.1	7.7	5,715.6	12.1	5,961.4
South America, outside Brazil (2)	0.9	–	66.9	–	12.1
Total Consolidated Entities	5,000.0	7.7	5,782.5	12.1	5,973.5
Equity Method Investees					
North America (2)	18.2	–	7.0	–	19.4
Africa	37.1	–	44.7	–	44.6
Total Equity Method Investees	55.3	–	51.7	–	64.0
Total Consolidated and Equity Method Investees (1)	5,055.3	7.7	5,834.3	12.1	6,037.4
Net proved undeveloped reserves (*):					
Consolidated Entities					
Brazil	3,083.7	–	2,665.0	–	3,527.9
South America, outside Brazil (2)	0.5	–	89.3	–	15.4
Total Consolidated Entities	3,084.2	–	2,754.3	–	3,543.3
Equity Method Investees					
North America (2)	4.4	–	2.2	–	4.8
Africa	4.5	–	2.4	–	4.9
Total Equity Method Investees	8.9	–	4.6	–	9.7
Total Consolidated and Equity Method Investees (1)	3,093.1	–	2,759.0	–	3,552.9
Total proved reserves (developed and undeveloped)	8,148.4	7.7	8,593.2	12.1	9,590.4

(1) It includes amounts related to assets held for sale (37.1 million barrels of oil and 44.7 billion cubic feet of natural gas in net proved developed reserves and 4.5 million barrels of oil and 2.4 billion cubic feet of natural gas in net proved undeveloped reserves) in Africa (PO&G).

(2) South America oil reserves includes 20.3% of natural gas liquid (NGL) in proved developed reserves and 59.2% of NGL in proved undeveloped reserves. North America oil reserves includes 3.8 % of natural gas liquid (NGL) in proved developed reserves and 5.3% of NGL in proved undeveloped reserves.

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(Expressed in millions of US Dollars, unless otherwise indicated)

(v) Standardized measure of discounted future net cash flows relating to proved oil and gas quantities and changes therein

The standardized measure of discounted future net cash flows, related to the above proved oil and gas reserves, is calculated in accordance with the requirements of Codification Topic 932 – Extractive Activities – Oil and Gas.

Estimated future cash inflows from production in Brazil are computed by applying the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions. Future price changes are limited to those provided by contractual arrangements existing at the end of each reporting year. Future development and production costs are those estimated future expenditures necessary to develop and produce year-end estimated proved reserves based on current costs, assuming continuing economic conditions. Estimated future income taxes (including future social contributions on net income - CSLL) are calculated by applying appropriate year-end statutory tax rates. The amounts presented as future income taxes expenses reflect allowable deductions considering statutory tax rates. Discounted future net cash flows are calculated using 10% mid-period discount factors. This discounting requires a year-by-year estimate of when the future expenditures will be incurred and when the reserves will be produced.

The valuation prescribed under Codification Topic 932 – Extractive Activities – Oil and Gas requires assumptions as to the timing and amount of future development and production costs. The calculations are made as of December 31 each year and should not be relied upon as an indication of Petrobras' future cash flows or the value of its oil and gas reserves.

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Supplementary information on Oil and Gas Exploration and Production (unaudited)

(Expressed in millions of US Dollars, unless otherwise indicated)

Standardized measure of discounted future net cash flows:

	Consolidated entities					
	Abroad					
	Brazil (2)	South America	North America	Total	Total	Equity Method Investees (3)
December 31, 2019						
Future cash inflows	535,788	609	-	609	536,397	4,045
Future production costs	(272,381)	(285)	-	(285)	(272,666)	(1,349)
Future development costs	(34,346)	(141)	-	(141)	(34,487)	(515)
Future income tax expenses	(86,012)	(31)	-	(31)	(86,044)	(438)
Undiscounted future net cash flows	143,049	152	-	152	143,200	1,743
10 percent midyear annual discount for timing of estimated cash flows (1)	(54,928)	(83)	-	(83)	(55,010)	(332)
Standardized measure of discounted future net cash flows	88,121	69	-	69	88,190	1,412
December 31, 2018						
Future cash inflows	601,754	1,112	-	1,112	602,866	5,998
Future production costs	(269,942)	(425)	-	(425)	(270,367)	(1,570)
Future development costs	(34,119)	(218)	-	(218)	(34,337)	(520)
Future income tax expenses	(111,522)	(91)	-	(91)	(111,613)	(1,006)
Undiscounted future net cash flows	186,171	379	-	379	186,549	2,903
10 percent midyear annual discount for timing of estimated cash flows (1)	(75,050)	(194)	-	(194)	(75,244)	(613)
Standardized measure of discounted future net cash flows	111,121	185	-	185	111,305	2,290
December 31, 2017						
Future cash inflows	439,058	912	5,361	6,274	445,332	3,487
Future production costs	(213,037)	(412)	(2,291)	(2,703)	(215,740)	(857)
Future development costs	(46,731)	(147)	(649)	(796)	(47,527)	(524)
Future income tax expenses	(63,087)	(89)	(86)	(175)	(63,262)	(339)
Undiscounted future net cash flows	116,204	265	2,335	2,600	118,803	1,768
10 percent midyear annual discount for timing of estimated cash flows (1)	(52,516)	(138)	(707)	(845)	(53,361)	(474)
Standardized measure of discounted future net cash flows	63,687	126	1,628	1,755	65,442	1,294

(1) Semiannual capitalization

(2) Includes the amount of US\$ 1,770 million related to assets classified as held for sale in 2017.

(3) Includes the amount of US\$ 1,675 million related to PO&G assets classified as held for sale in 2018. Includes the amount of US\$ 1,047 million related to PO&G assets classified as held for sale in 2019.

(*) Apparent differences in the sum of the numbers are due to rounding off.

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(Expressed in millions of US Dollars, unless otherwise indicated)

Changes in discounted net future cash flows:

	Consolidated entities					Equity Method Investees (2)
	Abroad				Total	
	Brazil (1)	South America	North America	Total	Total	
Balance at January 1, 2019	111,121	185	-	185	111,305	2,290
Sales and transfers of oil and gas, net of production cost	(34,522)	(65)	-	(65)	(34,587)	(792)
Development cost incurred	6,819	6	-	6	6,825	150
Net change due to purchases and sales of minerals in place	(1,387)	-	-	-	(1,387)	-
Net change due to extensions, discoveries and improved recovery related costs	385	-	-	-	385	-
Revisions of previous quantity estimates	18,317	(44)	-	(44)	18,273	8
Net change in prices, transfer prices and in production costs	(34,114)	(145)	-	(145)	(34,259)	(505)
Changes in estimated future development costs	(5,324)	60	-	60	(5,265)	(97)
Accretion of discount	11,112	25	-	25	11,137	244
Net change in income taxes	15,714	41	-	41	15,755	363
Other - unspecified	-	7	-	7	7	(249)
Balance at December 31, 2019	88,121	69	-	69	88,190	1,412
Balance at January 1, 2018	63,687	126	1,628	1,755	65,442	1,294
Transfers by loss of control (3)	-	-	(1,428)	(1,428)	(1,428)	1,428
Sales and transfers of oil and gas, net of production cost	(31,429)	(76)	(844)	(921)	(32,350)	(369)
Development cost incurred	9,685	32	229	261	9,946	252
Net change due to purchases and sales of minerals in place	(4,773)	-	-	-	(4,773)	(1,770)
Net change due to extensions, discoveries and improved recovery related costs	11,284	123	-	123	11,407	-
Revisions of previous quantity estimates	10,688	-	-	-	10,688	50
Net change in prices, transfer prices and in production costs	72,662	44	383	427	73,089	1,740
Changes in estimated future development costs	1,857	(76)	(118)	(194)	1,664	(93)
Accretion of discount	6,369	19	150	169	6,537	129
Net change in income taxes	(28,910)	(4)	-	(4)	(28,914)	(489)
Other - unspecified	-	(4)	-	(4)	(4)	119
Balance at December 31, 2018	111,121	185	-	185	111,305	2,290
Balance at January 1, 2017	34,424	98	830	927	35,351	583
Sales and transfers of oil and gas, net of production cost	(23,394)	(60)	(564)	(624)	(24,018)	(261)
Development cost incurred	11,553	23	230	253	11,806	294
Net change due to purchases and sales of minerals in place	-	-	-	-	-	-
Net change due to extensions, discoveries and improved recovery related costs	4,187	69	-	69	4,256	-
Revisions of previous quantity estimates	8,264	37	443	480	8,744	51
Net change in prices, transfer prices and in production costs	50,326	3	735	738	51,064	494
Changes in estimated future development costs	(15,878)	(31)	(144)	(175)	(16,053)	(25)
Accretion of discount	3,442	14	76	90	3,532	58
Net change in income taxes	(9,237)	(18)	(2)	(20)	(9,257)	(92)
Other - unspecified	-	(9)	25	16	16	190
Balance at December 31, 2017	63,687	126	1,628	1,755	65,442	1,294

(1) In 2017, total proved reserves includes 263.7 million barrels related to assets held for sale.

(2) Amounts transferred from consolidated entities to equity method investees, as the Company concluded the operation that has resulted in the formation of a joint venture company ("JV"), of which Murphy Exploration & Production Company ("Murphy") has 80% stake and Petrobras America Inc ("PAI") 20% stake.

(*) Apparent differences in the sum of the numbers are due to rounding off.

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Supplementary information – General public concerned under Law 13.303/16 (unaudited)

(Expressed in millions of US Dollars, unless otherwise indicated)

Additional information of general public concern – Law 13.303/16 (unaudited)

In order to comply with rules of disclosure about the activities that, in accordance with the requirements of article 3 of Petrobras' Bylaws, are related to the achievement of public interest purposes under conditions different from those of any other private sector company operating in the same market, we summarize below the commitments in effect in the year 2018.

I – Priority Thermoelectric Program – (Programa Prioritário de Termoeletricidade- PPT)

On February 24, 2000, the Brazilian federal government enacted the Decree No. 3.371 governing the implementation of thermoelectric power plants in Brazil through the Priority Thermoelectric Program (PPT). The thermoelectric power plants in the scope of this program were entitled to supply natural gas for up to 20 years with a pre-established price indexed to the U.S. inflation. The gas supply for the plants included in this program, in 2019, generated revenues of approximately US\$ 306 and costs of US\$ 581. As of December 31, 2019, the company had two plants in the scope of this program plus one plant, which supply of natural gas occurs by virtue of a court order.

II– National Program for Rationalization of the Use of Oil and Gas Products – (Programa Nacional de Racionalização do Uso dos Derivados do Petróleo e do Gás Natural – CONPET)

On February 18, 1991, the Brazilian federal government established the National Program for Rationalization of the Use of Oil and Gas Products (CONPET), which was intended to develop an anti-waste culture in the use of non-renewable natural resources. The Company is also a member of the Brazilian Labeling Program (Programa Brasileiro de Etiquetagem- PBE) in partnership with the National Institute of Metrology, Quality and Technology (INMETRO), which goal is to stimulate the production and use of gas appliances and vehicles with lower carbon emission, in addition of taking part in other agreements for the elaboration of partnerships with entities for the purpose of monitoring and guidance on vehicular emissions. In 2019, the costs associated with CONPET were immaterial.