



Ecopetrol Business Group presents its 2017 fourth-quarter and full-year results

- 2017 net profit totaled COP 6.6 trillion, the highest of the past four years¹. 2017 profit was 16% higher compared to 2014, despite a 45% decrease in the Brent price (2014: ~USD 100/barrel vs. 2017: ~USD 55/barrel).
- Group's Ebitda was COP 23.1 trillion, 28% higher vs. 2016. Operating cash generation increased by COP 2.7 trillion compared to 2016, and COP 5.3 trillion compared to 2015 when average Brent price was at the same level as in 2017.
- Proven hydrocarbon reserves totaled 1,659 million barrels-equivalent at the end of 2017. Average reserve life increased to 7.1 years, and the reserve replacement index was 126%, the highest of the past three years.
- The average Ecopetrol Group's 2017 production totaled 715 mboed, in line with the target for the year in spite of operating and environmental challenges.
- The crude oil basket strengthen USD 2.5/barrel vs. 2016 due to our commercial efforts and a better price environment, which brings about additional revenues of COP 1.2 trillion. Moreover, products basket improved by USD2.9/barrel, making COP 1.3 trillion of additional revenue.
- 2017 saw the successful execution of the global performance test of the new Cartagena Refinery. Reficar reported positive Net Income and Ebitda in 2017, marking the transition to a positive cash generation period only six months after the 34 refinery units were stabilized.
- In 2017 the highest load in history of the refining in Colombia was reached: 346 thousand barrels per day due to the stable operation of both Cartagena and Barrancabermeja refineries.
- Group's nominal debt decreased approximately by COP 9 trillion (USD 2.9 billion) between 2016 and 2017 allowing to improve the capital structure while maintaining a solid cash position of COP 14.5 trillion. The Gross Debt/Ebitda ratio was 1.9x in 2017 from 2.9x at the end of 2016.



42%

EBITDA Margin



14.5 Tr

Cash at 2017 close (COP)



715 mboed

Annual production



1.1 mmbd

Volume Transported



12.5 US\$/Bl

Q4 gross refining margin at Reficar

¹ Comparison made against financial results reported under IFRS as adopted in Colombia in 2015 with transition period on January First, 2014.



Bogota, February 27, 2018. Ecopetrol S.A. (BVC: ECOPETROL; NYSE: EC) announced today the Business Group's 2017 fourth quarter and full-year financial results, in accordance with International Financial Reporting Standards applicable in Colombia.

**TABLE 1:
CONSOLIDATED FINANCIAL RESULTS –
ECOPETROL BUSINESS GROUP**

A	B	C	D	E	F	G	H	I
COP Billion	4Q 2017	4Q 2016	Δ (\$)	Δ (%)	2017	2016	Δ (\$)	Δ (%)
Total Sales	15,363	13,313	2,050	15.4%	55,210	47,732	7,478	15.7%
Operating Profit	5,615	1,633	3,982	243.8%	15,505	8,253	7,252	87.9%
Net Income Consolidated	3,623	358	3,265	912.0%	7,402	2,404	4,998	207.9%
Non-Controlling Interests	(196)	(172)	(24)	14.0%	(782)	(839)	57	(6.8%)
Net Income Attributable to Owners of Ecopetrol	3,427	186	3,241	1,742.5%	6,620	1,565	5,055	323.0%
EBITDA	5,778	4,474	1,304	29.1%	23,075	18,018	5,057	28.1%
EBITDA Margin	37.6%	33.6%			41.8%	37.7%		

Figures included in this report were extracted from the audited financial statements and were the source for the calculation of certain financial measures such as the Ebitda. The information is expressed in billions of Colombian pesos (COP) or US dollars (USD), or thousands of barrels of petroleum-equivalent per day (mboed) or tons, and are so noted as applicable. For presentation purposes, certain figures of this report have been rounded to the nearest decimal place.

In the opinion of Ecopetrol S.A. CEO Felipe Bayon Pardo:

“2017 was a year of great operational and financial success for Ecopetrol. We are a more efficient and disciplined Company, demonstrating our technical capabilities and resilience by emerging stronger from the crisis of low oil prices.

We are prepared to take advantage of opportunities that may arise. The discipline we have established and a more favorable price environment will allow us to better positioning to continue growing a profitable and safe operation.

In 2017 we remained focused on seeking excellence and safety in all our operations and meeting our production goals with a better balance of reserves. These are basic foundations for the Company's growth. The rigorous allocation of investment resources, solid cash position and financial indicators, less leverage, a sustained investment-grade rating and the successful culmination of large projects were key aspects to the results we attained.

We are successfully experiencing Ecopetrol's “profitable growth”. Net profit in 2017 totaled 6.6 trillion pesos, the highest in the past four years and some 16% over 2014 profit, even with a Brent price 45% lower. EBITDA and EBITDA margin were 23.1 trillion pesos and 42%, respectively; EBITDA margin was up four percentage points over 2016, and is one of the highest in the global oil and gas industry.

For the year as a whole, cash break-even was at 40 dollars per barrel.

We closed out the year with a solid cash position of 14.5 trillion pesos (approximately 4.8 billion dollars), enabling opportunities for future inorganic growth. The 2017 year's cash position allowed us to prepay debt totaling 2.4 billion dollars, which is reflected in a 17% reduction in the Ecopetrol Group's nominal debt, strengthening its capital structure. Our Gross Debt/EBITDA indicator was at 1.9x for 2017, versus 2.9x in 2016.



Total investment in 2017 totaled 2.2 billion dollars, out of which 80% was allocated to the Exploration and Production segment, in line with our proposed 2020 Business Plan. It is important to note that despite lower investment during the year, the Company met its operating goals.

We are satisfied with the results achieved with our 2017 certification of reserves, which showed a change of trend. Proven reserves totaled 1,659 million barrels of oil equivalent, average life increased to 7.1 years and reserve replacement index was 126%, the highest in the past three years. This result was broadly leveraged by the success of our program to increase the recovery factor and the ongoing development of our fields.

As a result of proactive commercial approach and a scarcity of heavy crude worldwide, we succeeded in reducing the crude basket spread by 2.5 dollars per barrel, to -6.9 dollars per barrel, an improvement of some 27% over the 2016 figure. Thanks to this progress, additional revenue of 1.2 trillion pesos was generated for Ecopetrol. Also, in 2017 a new energy marketing subsidiary was incorporated.

The company met its 2017 production goal, at 715 thousand barrels of oil equivalent per day. This result was possible despite some operational events and public security issues, especially on the Caño Limón Coveñas oil pipeline. An important achievement was to be able to maintain a stable bi-directional operation on the Bicentenario oil pipeline and moving all our heavy crude along the same corridor. In 2017 some 500 development wells were drilled, reflecting a significant increase in activity versus 2016.

The recovery program saw outstanding results and is continuing to mature toward an expansion phase for pilots that have successfully completed the analysis stage. The purpose of the recovery program is to expand enhanced recovery technologies to other fields, as for example in Chichimene, one of our main fields, which initiated the mature expansion of water-injection technology throughout the entire field, based on the positive results obtained in the pilot phase.

2017 was a year of intense exploratory activity, as we worked hard to build the foundations for the Company's future growth. We ended the year with a total of 21 wells drilled. Through this deployment of activity we succeeded in incorporating more than 250 million barrels of oil equivalent in contingent resources, leveraging the future increase in the Business Group's reserves.

It is important to highlight the experience we gain with the drilling of the Molusco-1 well, the first offshore well operated by Ecopetrol. This well ended up fulfilling projected plans with no technical, environmental or operational incidents. Through this project, Ecopetrol has acquired experience in offshore exploration, following the industry's highest HSE standards.

In line with the strategy of growth and increased international activity, we were awarded new exploratory blocks in Mexico (blocks 6 and 8) and the United States (Garden Banks 77, 78, 121 and 122 in the US Gulf of Mexico). In turn, an additional stake was acquired in block K2 (Gulf of Mexico), contributing to our 2017 reserves and production balance.

In the transport segment, we highlight the stable transport of heavy crude with viscosity greater than 600 centistokes (cst – a viscosity measurement), thereby reducing dilution requirements. Late 2017 saw the completion of the San Fernando - Monterrey pipeline, the most important infrastructure in the Orinoquia region, providing us greater capacity to transport heavy crudes.

In refining, we achieved important operational milestones that yielded significant value to the Business Group. We note that in its second year of operations, the new Cartagena refinery is generating positive net profit and EBITDA, marking a significant change of trend in its financial figures. This important asset, which belongs to every Colombian, shows why it is considered the most modern refinery in Latin America.

The new Cartagena refinery completed its stabilization stage in December 2017 with the execution of the global performance test, having a sustained load of 144 thousand barrels per day or 96% of its capacity during 60 days and a refining margin of 12.5 dollars per barrel in the fourth quarter of 2017. This milestone initiates the operational optimization phase.



The Barrancabermeja refinery has consolidated a profitable and efficient operation, with an average refining margin of 13.5 dollars per barrel. During the year the Bioenergy project was completed and achieved several technical and operational milestones.

It is important to highlight that in December we reached an historic peak load of 393 thousand barrels per day on one specific day of the month. These successes were achieved while both refineries were operating stably and optimally.

The Transformation program remains a critical part of our growth. In 2017 operating efficiencies of 2.6 trillion pesos were reported versus the initial goal of 750 billion pesos. The key efficiency drivers in 2017 were energy, heavy crude handling, sales spread, optimization of the refining segment, and water management.

Process Safety showed the best results of the past nine years, with a Level 1 Process Safety Incidents Indicator of five incidents, a decline of 17% versus 2015 and 2016. This result was largely due to the implementation of safe practices and the strengthening of leadership in the area, at the management levels.

With a view to aligning our practices with global standards, Ecopetrol S.A. obtained OHSAS 18001 certification (Occupational Health and Safety) and ISO 14001 certification (Environmental Management), confirming its high HSE standards and enhancing its market competitiveness.

The year 2018 comes with significant challenges for Ecopetrol. Increasing our production to a level between 715 and 725 thousand barrels of oil equivalent per day, maintaining operational excellence, safety in our operations and solid financial metrics are our priorities. For 2018 we project investment ranging from 3.5 to 4.0 billion dollars, with a major focus on Exploration and Production, which accounts for 85% of the CAPEX plan.

In the Exploration and Production segment we plan the drilling of over 620 development wells, at least 12 exploratory wells, the use of 28 rigs and the acquisition of over 41,000 kilometers of 2D and 3D seismic. We also project developing activities at some 20 pilot projects to implement improved recovery technologies.

In the refining segments, efforts are focused on optimizing operations at the new Cartagena refinery, where we forecast an EBITDA of at least 500 billion pesos and a double-digit refining margin. The Company expects to achieve a milestone in refined products, with its two refineries processing between 350 and 375 thousand barrels of oil per day.

As part of the revision of the Corporate Responsibility strategy, in December 2017 the Corporate Responsibility Office was created, with the purposes of identify, adopt and facilitate the incorporation of initiatives that leverage the achievement of business objectives and ensure Ecopetrol's position as an organization that acts responsibly with its stakeholders.

The Ecopetrol Group's 2018 priorities will continue to be operational excellence, a commitment to ethics and transparency, safety as a pillar of its operations, care for its workers, protection of the environment, shared growth with communities, within a framework of joint prosperity and safe operations."



I. Ecopetrol Business Group Financial and Operating Results

In 2017 the Ecopetrol Business Group posted net profit of COP 6.6 trillion and EBITDA of COP 23 trillion, with average Brent at USD 55/barrel, yielding better results than those of 2014 when Brent price were close to USD 100/barrel. Further, liquidity remained strong and leverage declined compared to previous years, with an improvement in the Gross Debt/ EBITDA indicator, which was at 1.9x at the close of 2017 close compared to 2.9x at the close of 2016, strengthening the financial position of the Business Group's.

Table 2: Profit and Loss Statement – Ecopetrol Business Group

A	B	C	D	E	F	G	H	I
COP Billion	4Q 2017	4Q 2016	Δ (\$)	Δ (%)	2017	2016	Δ (\$)	Δ (%)
Local Sales	7,902	6,550	1,352	20.6%	28,236	24,745	3,491	14.1%
Export Sales	7,461	6,763	698	10.3%	26,974	22,987	3,987	17.3%
Total Sales	15,363	13,313	2,050	15.4%	55,210	47,732	7,478	15.7%
DD&A Costs	1,810	1,873	(63)	(3.4%)	8,117	7,370	747	10.1%
Variable Costs	5,500	5,573	(73)	(1.3%)	20,803	19,626	1,177	6.0%
Fixed Costs	2,435	2,259	176	7.8%	7,973	7,240	733	10.1%
Cost of Sales	9,745	9,705	40	0.4%	36,893	34,236	2,657	7.8%
Gross Profits	5,618	3,608	2,010	55.7%	18,317	13,496	4,821	35.7%
Operating Expenses	1,402	1,193	209	17.5%	4,185	4,401	(216)	(4.9%)
Recovery (expenses) impairment of non-current assets	(1,399)	782	(2,181)	(278.9%)	(1,373)	842	(2,215)	(263.1%)
Operating Income	5,615	1,633	3,982	243.8%	15,505	8,253	7,252	87.9%
Financial Income (Loss)	(538)	221	(759)	(343.4%)	(2,501)	(1,183)	(1,318)	111.4%
Share of Profit of Companies	(25)	(24)	(1)	4.2%	33	(10)	43	(430.0%)
Income Before Income Tax	5,052	1,830	3,222	176.1%	13,037	7,060	5,977	84.7%
Income tax	(1,429)	(1,472)	43	(2.9%)	(5,635)	(4,656)	(979)	21.0%
Net Income Consolidated	3,623	358	3,265	912.0%	7,402	2,404	4,998	207.9%
Non-Controlling Interests	(196)	(172)	(24)	14.0%	(782)	(839)	57	(6.8%)
Net Income (Attributable to Owners of Ecopetrol)	3,427	186	3,241	1742.5%	6,620	1,565	5,055	323.0%
EBITDA	5,778	4,474	1,304	29.1%	23,075	18,018	5,057	28.1%
EBITDA Margin	37.6%	33.6%			41.8%	37.7%		

1. Sales Revenue

The increase in sales revenue during the fourth quarter vs. the same period of 2016 is presented as the net result of:

- Higher price for the weighted average basket of crude, gas and products, +USD 12/bl (+COP 2.82 trillion), largely a reflection of the improved export crude spread and the performance of Brent crude benchmark prices (USD 62/bl in Q4 2017 vs. USD 51/bl in Q4 2016).
- Decline in the average exchange rate on revenue received, from COP 3,027/USD (Q4 2016) to COP 2,989/USD (Q4 2017), negatively impacting total revenue (-COP 150 billion).
- Effect of the decline in sales volume (-COP 774 billion).
- Higher services revenue (+COP 156 billion).

Total accumulated revenue in 2017 was up 16% as compared to 2016, primarily as a result of an increase in the Brent price (+COP 11 trillion), partially offset by a decrease in sales volume of 45 mboed (-COP 1.9 trillion). This effect must be analyzed together with the decrease in purchases, largely of diesel and gasoline (-39 mboed), which yielded a gain in gross margin of COP 0.4 trillion, thanks to the strategy of supplying the local market with Reficar's production, given the progress in stabilizing its operations and the better use of fuel oil in processed alternative flows.

**Table 3: Volume Sales – Ecopetrol Business Group**

A	B	C	D	E	F	G
Local Sales Volume (mboed)	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Crude Oil	19.5	13.3	46.6%	18.2	14.4	26.4%
Natural Gas	75.5	73.3	3.0%	73.9	75.3	(1.9%)
Gasoline	114.1	110.5	3.3%	110.7	108.3	2.2%
Medium Distillates	146.9	146.6	0.2%	146.4	142.6	2.7%
LPG and Propane	17.3	16.4	5.5%	17.1	16.5	3.6%
Fuel Oil	7.3	7.2	1.4%	8.5	6.4	32.8%
Industrial and Petrochemical	19.9	19.2	3.6%	18.9	19.2	(1.6%)
Total Local Sales	400.5	386.5	3.6%	393.7	382.7	2.9%
Export Sales Volume (mboed)	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Crude Oil	386.1	442.4	(12.7%)	416.3	435.3	(4.4%)
Products	105.7	127.6	(17.2%)	105.5	142.0	(25.7%)
Natural Gas	2.0	4.1	(51.2%)	1.7	2.5	(32.0%)
Total Export Sales	493.8	574.1	(14.0%)	523.5	579.8	(9.7%)
Total Sales Volume (mboed)	894.3	960.6	(6.9%)	917.2	962.5	(4.7%)

Market in Colombia (43% of sales in 2017): Domestic sales up 2.9% for the year ended December 31, 2017 as compared to the year ended December 31, 2016 primarily as a result of:

- Higher domestic sales of crude to third parties, primarily due to the contingency at the Caño Limón Coveñas oil pipeline.
- Higher sales of diesel, primarily due to higher mining consumption and the resumption of oil well services.
- Higher sales of fuel oil, primarily the result the new sales agreements for the river fleet, maximizing the use of docks at the Barrancabermeja refinery.
- Higher sales of gasoline, primarily as a result of a temporary reduction of 2% in the mix with ethanol due to the reduction in the local production.

International market (57% of sales in 2017): International sales down 9.7% for the year ended December 31, 2017 as compared to the year ended December 31, 2016 primarily as a result of:

- Lower product exports:
 - a) Lower exports (-11 mbd) of diesel, primarily due to our commercial strategy of focusing on allocating higher volumes to the domestic market to supply the local demand and replace imports.
 - b) Lower exports of fuel oil, primarily due to reduced production at the Barrancabermeja refinery as a result of better realization of processed alternative flows (-27 mbd) and stabilization of the coking unit at the Cartagena refinery (-9 mbd), which afforded higher production of medium refined products versus lower fuel oil production.
- Lower crude exports, primarily due to the allocation of domestic crudes to supply the Cartagena refinery (lower crude imports).

**Table 4: Export Destinations – Ecopetrol Business Group**

A	B	C	D	E	F	G
Crude (mboed)	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Asia	120.6	71.2	31.2%	105.6	64.8	25.4%
U.S. Gulf Coast	167.8	137.8	43.5%	141.1	169.7	33.9%
U.S. West Coast	34.7	53.4	9.0%	50.6	42.8	12.1%
U.S. East Coast	0.0	27.4	0.0%	10.1	28.0	2.4%
Europe	6.8	32.1	1.8%	20.5	52.3	4.9%
Central America / Caribbean	42.8	90.4	11.1%	71.2	57.8	17.1%
South America	5.9	11.9	1.5%	2.8	7.9	0.7%
Other	7.4	18.2	1.9%	14.5	12.0	3.5%
Total	386.1	442.4	100.0%	416.3	435.3	100.0%
Products (mboed)	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Asia	23.0	10.4	21.8%	19.3	13.8	18.3%
U.S. Gulf Coast	13.8	13.3	13.1%	13.6	21.9	12.9%
U.S. West Coast	2.2	10.0	2.1%	2.5	2.5	2.4%
U.S. East Coast	29.8	27.5	28.2%	17.8	33.1	16.8%
Europe	0.0	3.6	0.0%	3.0	15.1	2.9%
Central America / Caribbean	28.3	49.1	26.8%	39.4	41.5	37.3%
South America	8.5	11.9	8.0%	9.8	7.9	9.2%
Other	0.0	1.8	0.0%	0.2	6.2	0.2%
Total	105.7	127.6	100.0%	105.5	142.0	100.0%

Note: Information subject to change after the quarter close, as some destinations are reclassified according to final export results.

Crude: In 2017 the US Gulf Coast was the primary destination for crude exports, due to higher refining activity in that market associated with the strength of diesel and gasoline cracks. Exports to Asia increased their share by 11%, supported by increased imports from China as a consequence of higher demand from independent refiners.

Products: The principal export destination for products in 2017 was Central America and the Caribbean, particularly for sales of ultra-low sulfur diesel (ULSD), as these regions were intermediate points for the storage of fuel oil for destinations such as Asia. The second most important destination was Asia, which increased its share by 8.6%, given the better fuel oil prices in that market for smaller exports from Europe. The lower availability of high-sulfur diesel (HSD) led to a decrease in exports to Africa and Europe.

Table 5: Average Benchmark Crude Prices and Crude Spread

A	B	C	D	E	F	G
USD/BI	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Brent	61.5	51.1	20.4%	54.7	45.1	21.3%
Crude Oil Basket vs Brent	(6.4)	(9.2)	(30.4%)	(6.9)	(9.4)	(26.6%)
Product Oil Basket vs Brent	7.7	5.9	30.5%	7.9	5.0	58.0%

Table 6: Average Weighted Sale Price – Ecopetrol Business Group

A	B	C	D	E	F	G	H	I
USD/BI	4Q 2017	4Q 2016	Δ (%)	Volume (mboed) 4Q 2017	2017	2016	Δ (%)	Volume (mboed) 2017
Crude Oil Basket	55.1	41.9	31.5%	405.6	47.8	35.7	33.9%	434.5
Refined Products Basket	69.2	57.0	21.4%	411.2	62.7	50.1	25.1%	407.1
Natural Gas Basket	21.8	21.9	(0.5%)	77.5	22.7	23.5	(3.4%)	75.6
				894.3				917.2



Crudes: In 2017 Ecopetrol obtained better spreads versus the Brent price on the sale of its heavy and intermediate crudes. The basket of crude sales was up USD 2.5/bl as compared to 2016. This is primarily explained by: i) a sales strategy focused on markets that generate greater value, ii) higher crude loads at US refineries, iii) greater imports from China, iv) strengthening of heavy crudes due to production cuts in intermediate and heavy crudes in OPEC countries, and v) larger availability of light crudes due to increased US production.

Products: The spread in the basket of products versus the Brent price increased by USD 2.9/bl as compared to 2016. This performance was primarily the result of: i) a better basket, with the conversion from exporting high- and low-sulfur diesel (HSD and LSD) to ultra-low sulfur diesel (ULSD), ii) the effect of the hurricanes that strengthened light products and distillates by reducing supplies from refineries in the USGC that had been subject to temporary closures, and iii) improved price of fuel oil in light of increased demand from Singapore, problems at Mexican refineries and lower supplies from Russia due to the migration to high-conversion refining capacity that has been observed over the course of the year.

Natural Gas: The price of natural gas decreased 3.4% as compared to 2016 due primarily to this year's absence of the El Niño phenomenon, which reduced thermal generation by gas, and lower prices on increased gas sales.

2. Cost of sales

Depreciation and amortization: The decrease in Q4 2017 as compared to Q4 2016 was largely due to the net effect of:

- a) The incorporation of reserves in 2017.
- b) Partially offset by higher depreciation at transportation subsidiaries due to greater maintenance capitalization.

Variable costs: The decrease in Q4 2017 as compared to Q4 2016 was largely due to the net effect of:

- a) Lower cost of purchases of crude, gas and products (-COP 272 billion), the net effect of:
 - Decline in volumes purchased (-COP 1.20 trillion): i) lower imports of fuels, especially diesel and gasoline (-COP 743 billion, -43 mboed) due to the imports substitution by products produced by Reficar, ii) lower crude imports (-COP 422 billion, -33 mboed) to Reficar due to substitution of oil imports by local crudes produced at Ecopetrol, iii) lower diluent consumption due to the strategy of marketing high-viscosity crudes and co-dilution with LPG (-COP 150 billion, -11 mboed), and iv) changes in domestic purchases and products (+COP 117 billion).
 - Higher average price of domestic purchases and imports and products (+COP 1.0 trillion).
 - Lower average exchange rate on purchases (-COP 85 billion), from COP 3,024/USD (Q4 2016) to COP 2,984/USD (Q4 2017).
- b) Higher cost due to change in inventory (+COP 247 billion) primarily due to consumption of accumulated inventory at the close of Q3 2017 as a result of the strong hurricane season in the United States and the higher unit costs associated with the increase in the Brent price on purchases of crudes and products.
- c) Decrease in other costs (-COP 48 billion).



Table 7: Local Purchases and Imports – Ecopetrol Business Group

A	B	C	D	E	F	G
Local Purchases (mboed)	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Crude Oil	158.5	155.5	1.9%	156.1	159.3	(2.0%)
Natural Gas	3.5	2.7	29.6%	3.1	2.2	40.9%
Refined Products	2.9	3.9	(25.6%)	2.9	4.7	(38.3%)
Diluent	0.3	2.1	(85.7%)	0.9	0.7	28.6%
Total	165.2	164.2	0.6%	163.0	166.9	(2.3%)
Imports (mboed)	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Crude Oil	41.6	73.9	(43.7%)	68.0	60.1	13.1%
Refined Products	48.5	89.2	(45.6%)	62.7	101.5	(38.2%)
Diluent	50.3	61.2	(17.8%)	52.0	56.6	(8.1%)
Total	140.4	224.3	(37.4%)	182.7	218.2	(16.3%)

Fixed costs: The increase in fixed costs in Q4 2017 as compared to Q4 2016 was primarily the result of:

- Increased cost to replenish client's inventory as a result of losses in the transportation systems.
- Higher transport costs by tanker cars due to the increase in transport routes for naphtha, primarily in Casanare, and river transport on account of greater navigability by the Magdalena River.

3. Operating expenses

Operating expenses for Q4 2017 were up primarily due to recognition of spending on exploratory activity (+COP 620 billion) at the Kronos-1, Parmer-1, Lunera-1, Brama-1, Molusco-1, Godric, Dumbo and Pollera wells; this was partially offset by the book gain generated by the valuation at reasonable value of the acquisition of the additional 11.6% at the K2 field in the Gulf of Mexico (COP 451 billion). This profit was generated because of the reasonable value of the asset acquired augmented through the period between the price setting date and the closing date of the deal.

By contrast, total operating expenses in 2017 decreased when compared to 2016, largely because of the reduction of the wealth tax rate, the sale of minor fields from the 2016 round, and the gain on the increased share of the K2 field as noted in the previous paragraph.

Impairment of long-term assets

The final quarter of 2017 saw reversals due to impairment recognized in previous years, totaling COP 1.4 trillion, before tax (COP1.35 billion after tax), in all operating segments, as follows:

- Exploration and Production experienced a recovery of COP 0.26 trillion before tax (COP 0.34 trillion after tax) primarily in offshore oil fields, offset by an impairment expense for onshore fields, both as a result of calculating their valuation taking into account market variables, incorporating new reserves, price spreads versus Brent, and available technical and operational information.
- Refining and Petrochemicals experienced a recovery of COP 1.08 trillion before tax (COP 0.97 trillion after tax) as a result of the recovery of impairment from the Cartagena refinery, largely due to: i) greater



certainty in refining margins as a result of ratification of the implementation of MARPOL (international convention for the prevention of pollution by ships) starting in 2020; ii) better international prices and refining margins with a positive effect on future cash flows; and iii) operational and financial optimization due to stabilization of the new refinery. The above was partially offset by an impairment expense at Bioenergy and the Barrancabermeja refinery, the later related to capitalized financial charges as part of the refinery modernization project, which is currently postponed.

- c) Transport and logistics experienced a recovery of COP 65 billion before tax (COP 41 billion after tax), largely at the South Oil Pipeline, which includes the Trans-Andean Oil Pipeline among others. The recovery that occurred during the year was caused largely by an increase in flows through the port of Tumaco, which is included in that cash generating unit.

4. Financial (non-operational) and other results

The change in **financial results** in Q4 2017 versus Q4 2016 is presented as a net result of:

- a) Change in the results of the exchange-rate difference (+COP 18 billion). Between the fourth quarter of 2017 and the same period in 2016, there was a gain on the exchange-rate spread due to the impact of the peso's devaluation against the dollar in the average dollar asset position posted during those quarters.

At the 2017 close, the Business Group's net dollar position was near zero as a result of the application of natural hedge accounting and the efficient allocation of debt within the companies comprising the Business Group under the capital structure optimization framework.

- b) Lower net interest spending (+COP 50 billion). 2017 saw interest savings totaling COP 0.4 trillion as a result of: a) the use of cash surpluses to pre-pay foreign-currency loans totaling USD 1,925 million in June 2017, USD 475 million in December 2017, b) decrease in interest on domestic loans with a lower interest rate indexed to the Consumer Price Index (CPI) and capital payments and c) positive impact from the peso's appreciation against the dollar in interest on foreign loans.
- c) Higher financial expenses in Q4 2017 vs Q4 2016 due primarily to the recovery of resources from the fund intended for the Santiago de las Atalayas and Pueblo Viejo de Cusiana litigation as a result of termination of the seizure resulting from the protection measure ordered by the Council of State in 1994, which was recognized in the last quarter of 2016.

The **effective income tax rate** for 2017 was 43.2%, versus 65.9% in 2016. This decrease was primarily due to the improved results at Refinería de Cartagena and Ecopetrol America Inc.

For 2017, the **cash break-even point** was US\$40/barrel.

Table 8: Statement of Financial Position – Ecopetrol Business Group

A	B	C	D	E
COP Billion	December 31, 2017	December 31, 2016	Δ (\$)	Δ (%)
Current Assets	23,224	24,129	(905)	(3.8%)
Non Current Assets	97,451	97,178	273	0.3%
Total Assets	120,675	121,307	(632)	(0.5%)
Current Liabilities	16,847	16,387	460	2.8%
Non-Current Liabilities	54,047	59,601	(5,554)	(9.3%)
Total Liabilities	70,894	75,988	(5,094)	(6.7%)
Equity	49,781	45,319	4,462	9.8%
Total Liabilities and Equity	120,675	121,307	(632)	(0.5%)



5. Assets

The reduction in **assets** in 2017 as compared to 2016 was primarily due to the net effect of:

- The decline in **property, plant and equipment, natural resources and intangibles** (-COP 1.8 trillion), primarily due to the effect of higher depreciation and amortization during the year, and charges against income from spending on exploratory activity with respect to investments made and the recovery of impairment on assets recognized in previous years.
- The decline in **cash and cash equivalents** (-COP 0.5 trillion), primarily due to the net effect: i) cash flow generated by operations (+COP 17 trillion), ii) outflow of funds for CAPEX and other investment activities (-COP 4.4 trillion), iii) use of funds for prepayment and debt service (-COP 11.3 trillion), payment of dividends (-COP 1.5 trillion) and iv) negative effect of the peso's appreciation against the dollar (-COP 0.3 trillion).

Table 9: Cash Position² – Ecopetrol Business Group

A	B	C	D	E
COP Billion	4Q 2017	4Q 2016	2017	2016
Initial Cash and cash equivalents	7,853	7,711	8,410	6,550
(+) Cash generated from operations	6,353	4,024	16,974	14,233
(-) CAPEX	(2,321)	(2,252)	(6,107)	(5,837)
(+/-) Movement of Portfolio investments	(1,569)	(654)	565	(5,447)
(+/-) Other investment activities	342	378	1,158	1,900
(-) Proceeds (repayment of) from borrowings and interests	(2,543)	(632)	(11,259)	(1,051)
(-) Dividends paid	(200)	(319)	(1,505)	(1,712)
+(-) Exchange difference in cash	31	154	(290)	(226)
Final Cash and cash equivalents	7,946	8,410	7,946	8,410
Portfolio investments > 3 months	6,534	6,687	6,534	6,687
Total cash	14,480	15,097	14,480	15,097

- Increase in **trade accounts and other accounts receivable** (+COP 1.9 trillion), largely due to the increase in accounts receivable from the price stabilization fund for the gasoline and diesel sold and an increase in the trade portfolio in line with improved hydrocarbon prices.
- Other movements (-COP 0.2 trillion).

6. Liabilities and Net Equity

The decrease in total liabilities in 2017 as compared to 2016 was primarily the result of:

- Lower **loans and financing** (-COP 8.7 trillion), primarily due to prepayments of foreign-currency debt, totaling USD 2.4 billion in 2017. The Business Group's level of leveraging³ declined from 45% in 2016 to 37% in 2017, strengthening the Business Group's capital structure. Further, with lower debt, the Gross Debt/EBITDA indicator fell to 1.9x for 2017, versus 2.9x in 2016.

² Cash corresponds to available funds found as cash and cash equivalents, and investments in financial instruments, regardless of maturity.

³ The leverage level is calculated as the ratio between net financial debt and the sum of net equity and net financial debt.



As of December 31, 2017, the Group's debt level totaled COP 43.5 trillion, 86% of which was of foreign-currency origin and 14% originating from domestic currency.

- b) Increase in **employee benefit liabilities** (+COP 2.5 trillion), primarily due to the actuarial updating of the pension liability, mainly of the discount rate, with an impact on other comprehensive results within net equity.
- c) Increase in **provisions and contingencies** (+COP 0.5 trillion), largely due to the financial updating of abandonment costs.
- d) Other changes in liabilities (+COP 0.6 trillion).

The increase in **net equity** in 2017 as compared to 2016 corresponds to the combined effect of: i) profits for the period, ii) gain on the exchange-rate difference on foreign currency debt, which is an instrument for hedging cash flows and net investment, offset by iii) a decline resulting from the actuarial updating of pension liabilities, iv) payment of dividends during the year, and v) adjustment required due to the conversion of assets and liabilities of subsidiaries with functional currencies other than the Colombian peso.

7. Risk Rating

Ecopetrol has an Investment Grade rating from the three major global rating agencies, which demonstrates the company's solid financial results and its effective operating strategy.

Ecopetrol's international ratings current at the close of 2017 were as follows:

- **Moody's:** Baa3 with Stable outlook
- **Fitch Ratings:** BBB with Stable outlook
- **S&P Global Ratings:** BBB- with Stable outlook

In its report dated September 21, 2017, the rating agency Moody's Investors Service upgraded Ecopetrol's outlook to "Stable" and maintained its Baa3 rating. According to the report, the outlook was upgraded in part given Ecopetrol's strategy of adding to reserves, which the company is implementing on four fronts: i) Exploration with strategic partners, ii) Implementation of improved recovery and infill projects, iii) Assessment of opportunities in non-conventional deposits, and iv) Non-organic growth leveraged on the strong cash position. The rating action was also based on Ecopetrol's financial results, including a positive cash position and low refinancing risk.

On February 23, 2018 Moodys Investors Service reported that the change in the Republic of Colombia's rating outlook, from stable to negative, had no effect on the Company's credit rating, as it anticipates continuously improving fundamental performance.

The agency notes that Ecopetrol has successfully reduced its operating costs, allowing it to increase its cash flow and reduce its debt. It also mentioned the Company's almost 130% reserves replacement achieved in 2017, and its improved fundamentals.

Last December 7, 2017, Fitch Ratings published its credit rating for Ecopetrol, keeping it at BBB with "Stable" outlook, and the individual credit rating (Standalone/ not incorporating Government support) at BBB-. In its report, Fitch emphasized the measures taken by the company to ensure a sound financial and cash position. On the operational front, it acknowledged the importance of cost reduction efforts as a result of the Transformation plan the company has undertaken. Throughout the report, Fitch noted the Company's strong ties with the Colombian Government and Ecopetrol's strategic role for the country.

In turn, on December 11, the risk-rating agency S&P Global Ratings downgraded Ecopetrol's credit rating in line with a downward revision of the Republic of Colombia. Ecopetrol's rating went from BBB ("Negative" outlook) to



BBB- (“Stable” outlook), retaining investment grade. S&P Global Ratings kept Ecopetrol’s individual credit rating (Standalone/ without incorporating Government support) at BB+.

8. Results by Business Segment

Table 10: Profit and Loss Statement – Quarter over Quarter by Segment

A	B	C	D	E	F	G	H	I	J	K
	E&P		Refining&Petrochem.		Transport.& Logistics		Eliminations		Ecopetrol Consolidated	
	4Q 2017	4Q 2016	4Q 2017	4Q 2016	4Q 2017	4Q 2016	4Q 2017	4Q 2016	4Q 2017	4Q 2016
COP Billion										
Sales	10,484	8,230	8,184	6,723	2,793	2,518	(6,098)	(4,158)	15,363	13,313
DD&A Costs	1,256	1,542	265	93	289	238	-	-	1,810	1,873
Variable Costs	3,583	3,225	6,873	5,590	190	148	(5,146)	(3,390)	5,500	5,573
Fixed Costs	2,278	1,878	615	514	423	514	(881)	(647)	2,435	2,259
Cost of Sales	7,117	6,645	7,753	6,197	902	900	(6,027)	(4,037)	9,745	9,705
Gross profit	3,367	1,585	431	526	1,891	1,618	(71)	(121)	5,618	3,608
Operating Expenses	819	498	373	473	281	290	(71)	(68)	1,402	1,193
Recovery (expenses) impairment of non-current assets	(257)	112	(1,077)	712	(65)	(42)	-	-	(1,399)	782
Operating Profit (Loss)	2,805	975	1,135	(659)	1,675	1,370	-	(53)	5,615	1,633
Financial Income (Loss)	(354)	509	(92)	(314)	(92)	(27)	-	53	(538)	221
Share of profit of companies	(16)	(31)	1	7	(10)	-	-	-	(25)	(24)
Net Income (Loss) Before Income Tax	2,435	1,453	1,044	(966)	1,573	1,343	-	-	5,052	1,830
Provision for Income Tax	(765)	(937)	(60)	(69)	(604)	(466)	-	-	(1,429)	(1,472)
Net Income Consolidated	1,670	516	984	(1,035)	969	877	-	-	3,623	358
Non-controlling interests	-	-	1	3	(197)	(175)	-	-	(196)	(172)
Net income (Loss) attributable to owners of Ecopetrol	1,670	516	985	(1,032)	772	702	-	-	3,427	186
EBITDA	3,444	2,615	423	319	1,911	1,593	-	(53)	5,778	4,474
EBITDA Margin	32.9%	31.8%	5.2%	4.7%	68.4%	63.3%	0.0%	1.3%	37.6%	33.6%

Table 11: Profit and Loss Statement – Year over Year by Segment

A	B	C	D	E	F	G	H	I	J	K
	E&P		Refining & Petrochem.		Transportation & Logistics		Eliminations		Ecopetrol Consolidated	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
COP Billion										
Sales	35,751	27,468	28,644	24,824	10,598	10,649	(19,783)	(15,209)	55,210	47,732
DD&A Costs	5,933	5,454	1,083	950	1,101	966	-	-	8,117	7,370
Variable Costs	12,489	10,701	23,969	20,384	634	488	(16,289)	(11,947)	20,803	19,626
Fixed Costs	7,873	6,803	1,803	1,510	1,537	1,896	(3,240)	(2,969)	7,973	7,240
Cost of Sales	26,295	22,958	26,855	22,844	3,272	3,350	(19,529)	(14,916)	36,893	34,236
Gross profit	9,456	4,510	1,789	1,980	7,326	7,299	(254)	(293)	18,317	13,496
Operating Expenses	2,308	2,140	1,493	1,802	637	751	(253)	(292)	4,185	4,401
Recovery (expenses) impairment of non-current assets	(246)	110	(1,068)	773	(59)	(41)	-	-	(1,373)	842
Operating Profit (Loss)	7,394	2,260	1,364	(595)	6,748	6,589	(1)	(1)	15,505	8,253
Financial Income (Loss)	(1,332)	(118)	(783)	(811)	(386)	(243)	-	(11)	(2,501)	(1,183)
Share of profit of companies	60	(32)	15	23	(42)	(1)	-	-	33	(10)
Net Income (Loss) Before Income Tax	6,122	2,110	596	(1,383)	6,320	6,345	(1)	(12)	13,037	7,060
Provision for Income Tax	(2,717)	(1,365)	(357)	(625)	(2,561)	(2,666)	-	-	(5,635)	(4,656)
Net Income Consolidated	3,405	745	239	(2,008)	3,759	3,679	(1)	(12)	7,402	2,404
Non-controlling interests	-	-	2	8	(784)	(847)	-	-	(782)	(839)
Net income (Loss) attributable to owners of Ecopetrol	3,405	745	241	(2,000)	2,975	2,832	(1)	(12)	6,620	1,565
EBITDA	13,226	8,383	1,940	1,848	7,910	7,788	(1)	(1)	23,075	18,018
EBITDA Margin	37.0%	30.5%	6.8%	7.4%	74.6%	73.1%	0.0%	0.0%	41.8%	37.7%



A. Exploration and Production

Table 12: Profit and Loss Statement – Exploration and Production

A	B	C	D	E	F	G	H	I
COP Billion	4Q 2017	4Q 2016	Δ (\$)	Δ (%)	2017	2016	Δ (\$)	Δ (%)
Sales	10,484	8,230	2,254	27.4%	35,751	27,468	8,283	30.2%
DD&A Costs	1,256	1,542	(286)	(18.5%)	5,933	5,454	479	8.8%
Variable Costs	3,583	3,225	358	11.1%	12,489	10,701	1,788	16.7%
Fixed Costs	2,278	1,878	400	21.3%	7,873	6,803	1,070	15.7%
Cost of Sales	7,117	6,645	472	7.1%	26,295	22,958	3,337	14.5%
Gross profit	3,367	1,585	1,782	112.4%	9,456	4,510	4,946	109.7%
Operating Expenses	819	498	321	64.5%	2,308	2,140	168	7.9%
Recovery (expenses) impairment of non-current assets	(257)	112	(369)	(329.5%)	(246)	110	(356)	(323.6%)
Operating Profit (Loss)	2,805	975	1,830	187.7%	7,394	2,260	5,134	227.2%
Financial Income (Loss)	(354)	509	(863)	(169.5%)	(1,332)	(118)	(1,214)	1,028.8%
Share of profit of companies	(16)	(31)	15	(48.4%)	60	(32)	92	(287.5%)
Net Income (Loss) Before Income Tax	2,435	1,453	982	67.6%	6,122	2,110	4,012	190.1%
Provision for Income Tax	(765)	(937)	172	(18.4%)	(2,717)	(1,365)	(1,352)	99.0%
Net Income Consolidated	1,670	516	1,154	223.6%	3,405	745	2,660	357.0%
Non-controlling interests	-	-	-	0.0%	-	-	-	-
Net income (Loss) attributable to owners of Ecopetrol	1,670	516	1,154	223.6%	3,405	745	2,660	357.0%
EBITDA	3,444	2,615	829	31.7%	13,226	8,383	4,843	57.8%
EBITDA Margin	32.9%	31.8%	1.1%		37.0%	30.5%	6.5%	

Reserves

At the 2017 close, the Ecopetrol Group's net proven reserves were 1,659 million barrels of petroleum equivalent. The reserve replacement index was 126%, and the average reserve life was equivalent to 7.1 years. We note that Ecopetrol S.A.'s average reserve life was 7.4 years and it accounts for 95% of total Group's proven reserves.

In 2017, the Ecopetrol Group incorporated 295 million barrels of petroleum equivalent in proven reserves, representing a positive change in the trend for the incorporation of reserves in recent years. Total production for the year was 234 million barrels of petroleum equivalent.

The SEC price used for assessing the 2017 reserves was USD 54.93 per Brent barrel, versus USD 44.49 per Brent barrel in 2016. Ecopetrol estimates that due to the effect of a higher price, approximately 94 million barrels of petroleum equivalent were recovered, thanks to the extension of the field's economic limit and the incorporation of new projects. In turn, approximately 201 million barrels of petroleum equivalent resulted from technical management and financial optimization of the assets.

We would emphasize that much of the increase in proven reserves (73 million of barrels of oil equivalent) was due to the results of the program to increase the recovery factor, with principal achievements occurring in fields such as Chichimene, Castilla, Casabe and Tibu. These results are encouraging, in that they are one of the pillars of the growth in the Company's reserves and production.

**Table 13: Proven Reserves – Ecopetrol Business Group**

A	B	C	D
	2014	2015	2016
Proven	2,084	1,849	1,598
Resivions	-25	-54	174
Enhanced Recovery	16	11	73
Mineral Purchases	0	0	4
Extensions and discoveries	24	27	44
Sales	0.0	0.0	0.0
Production	-251	-235	-234
Net proven reserves Dec 31st	1,849	1,598	1,659

Exploration

Exploratory activity intensified in the fourth quarter of 2017 with the drilling of 13 wells, demonstrating the company's commitment to the development of one of its growth pillars, exploration.

Table 14: Exploratory Wells – Ecopetrol Business Group

A	B	C	D	E	F	G	H	I	J	K
Company	4Q 2017					2017				
	Drilled	Hydrocarbon Presence	Suspended	Under Evaluation	P&A	Drilled	Hydrocarbon Presence	Suspended	Under Evaluation	P&A
Ecopetrol S.A	9	5	0	2	2	13	7	0	2	4
Hocol S.A	3	0	0	2	1	5	0	0	3	2
ECAS	1	0	0	0	1	1	0	0	0	1
Ecopetrol America (EAI)	0	0	0	0	0	2	1	0	0	1
Total	13	5	0	4	4	21	8	0	5	8

2017 was a year of intense exploratory activity, in which we worked intensely to build the foundations for the company's future growth. We ended the year with a record of 21 wells drilled. With this activity roll-out we succeeded in our target of incorporating more than 250 million barrels-equivalent in contingent resources, leveraging the increase in the Business Group's reserves.

In particular, the Molusco-1 well (the first offshore well operated by Ecopetrol S.A. through its subsidiary Ecopetrol Costa Afuera ECAS (50%), in joint venture with ONGC (50%) ended up meeting the projected targets with no technical, environmental or operational incidents. With this project Ecopetrol becomes a company capable of operating in the offshore. The well was declared a non-commercial discovery and was plugged and abandoned.



Table 15: Detail of Exploratory Wells – Ecopetrol Business Group

A	B	C	D	E	F
#	Quarter	Well	Block	Basin	Status
1	1	Purple Angel-1A	Purple Angel	Sinú offshore	Hydrocarbon Presence
2	2	Gorgon-1	Purple Angel	Sinú offshore	Hydrocarbon Presence
3	2	Siluro-1B	RC 11	Guajira offshore	P&A
4	3	Warrior-2	Green Canyon 519	GoM	Hydrocarbon Presence
5	3	Warrior-2 /ST-1	Green Canyon 519	GoM	P&A
6	3	Bullerengue Sur-3	SSJN1	Sinú onshore	P&A
7	3	Bonifacio-1	Lla-65	Llanos	Under Evaluation
8	3	Brama-1	Tayrona	Guajira offshore	P&A
9	4	Coyote-1	De Mares	VMM	Hydrocarbon Presence
10	4	Trogón-1	CPO-9	Llanos	P&A
11	4	Molusco-1	RC-9	Guajira offshore	P&A
12	4	Landero-1	Magdalena Medio	VMM	P&A
13	4	Infantas Oriente-1	La Cira Infantas	VMM	Hydrocarbon Presence
14	4	Godric Norte-1	CPO-17	Llanos	Under Evaluation
15	4	Pollera-1	SSJN1	Sinú onshore	Under Evaluation
16	4	Lorito-1	CPO-9	Llanos	Hydrocarbon Presence
17	4	Cosecha V	Cosecha	Llanos	Hydrocarbon Presence
18	4	Capachos-2ST	Capachos	Llanos	Under Evaluation
19	4	REX NE-1	Cosecha	Llanos	Hydrocarbon Presence
20	4	Lunera-1	VSM-9	VSM	P&A
21	4	Bufalo-1	VMM-32	VMM	Under Evaluation

Boranda well, declared as a success in 2017, was part of the 2016 campaign thereby it is not included in the Table 15.

In Continental Colombia, efforts were focused on activity in mature basins near production fields and infrastructure, to take advantage of existing facilities. The principal basins at which activity was developed were Sinú, Valle Superior del Magdalena, Valle Medio del Magdalena and Llanos.

Further, in Colombian Caribbean waters, the company proved the existence of a large gas province. The drilling of the Gorgon-1 well is highlighted as one of the country's most important discoveries in recent years. The drilling of this well was an historic event, in that we penetrated the largest water layer in the history of Colombian off-shore drilling: 2,316 meters.

Continuing with its seismic acquisition activities, in the fourth quarter the subsidiary Ecopetrol Brazil acquired 446 km² of 3D seismic in the FZA-M-320 offshore block (Ecopetrol 70% and JX Nippon 30%) in the Foz de Amazonas basin. Ecopetrol is currently assessing its participation in that country's 2018 rounds.

With a view to diversifying and strengthening its exploratory portfolio, domestically Ecopetrol increased its equity stake in the Fuerte Sur (Sinú Offshore basin) and CPO-17 (Llanos basin) blocks, from 50% to 100%. In the offshore international, Ecopetrol was awarded new exploratory blocks in Mexico (blocks 6 and 8) and the United States (Garden Banks 77, 78, 121 and 122 in the Gulf of Mexico – USA).



For 2018, the Business Group will concentrate its activity on the drilling of 12 onshore wells in Colombia, of which Hocol S.A. projects executing three exploratory wells and one appraisal well, while Ecopetrol S.A. plans to drill five exploratory wells and three appraisal wells.

As for seismic activity, Hocol S.A. will acquire 294 Km of 2D seismic (Sinú San Jacinto basin) and Ecopetrol S.A. will acquire 162 Km of 2D seismic in the Putumayo. We also anticipate purchasing and acquiring of 2D and 3D seismic data in Mexico, Gulf of Mexico, Brazil and Colombia.

Production

Table 16: Gross Production* – Ecopetrol Business Group

A	B	C	D	E	F	G
mboed	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Crude Oil	544.5	549.8	(1.0%)	545.0	552.1	(1.3%)
Natural Gas	112.8	113.8	(0.9%)	111.0	116.0	(4.3%)
Total Ecopetrol S.A.	657.3	663.6	(0.9%)	656.0	668.1	(1.8%)
Crude Oil	20.7	18.5	11.9%	21.7	18.0	20.6%
Natural Gas	8.0	1.1	627.3%	5.8	0.8	625.0%
Total Hocol	28.7	19.6	46.4%	27.5	18.8	46.3%
Crude Oil	9.7	12.0	(19.2%)	10.6	12.4	(14.5%)
Natural Gas	5.0	4.6	8.7%	4.8	6.5	(26.2%)
Total Equión**	14.7	16.6	(11.4%)	15.4	18.9	(18.5%)
Crude Oil	4.4	4.3	2.3%	4.4	4.1	7.3%
Natural Gas	0.8	1.3	(38.5%)	0.6	1.3	(53.8%)
Total Savia**	5.2	5.6	(7.1%)	5.0	5.4	(7.4%)
Crude Oil	8.8	9.4	(6.4%)	9.2	5.5	67.3%
Natural Gas	1.8	2.1	(14.3%)	2.0	1.2	66.7%
Total Ecopetrol America	10.6	11.5	(7.8%)	11.2	6.7	67.2%
Crude Oil	588.1	594.0	(1.0%)	590.9	592.1	(0.2%)
Natural Gas	128.4	122.9	4.5%	124.2	125.8	(1.3%)
Total Group's Production	717	717	(0.1%)	715	718	(0.4%)

* Gross production includes royalties and is prorated for Ecopetrol's stake in each company.

** Equión and Savia are incorporated through the equity method. – Note: Gas production includes white products.

The Ecopetrol Group's average production totaled 717 mboed in Q4 2017 and 715 mboed for all of 2017, in line with the production goal for the year. We would note that we achieved this production goal even though the public security issues, the operating challenges we successfully addressed and the lower Capex than the initially estimated. The greater time allocated for the maturation of projects implied a lower incremental production activity of approximately 18 mboed that were replaced with operational efficiencies in the basic curve. A portion of this incremental production will be delivered in 2018.

In 2017 the company succeeded maintaining its new development projects in some of our principal fields, such as: i) Castilla, where more than 40 new wells, ii) Chichimene, where we continued with the water-injection pilot project, affording good results, iii) the stable direct operation of the Rubiales field, and iv) the resumption of activity at the new wells and workover of La Cira.

It is important to mention that our success in maintaining production levels is explained by the sustained reduction in drilling costs, which have allowed us to continue our activities in developing fields such as Castilla and Rubiales, keeping production constant. This decrease led to an increase in the drilling time up to 46%, yielding declines of



over 50% in the current cost per foot drilled compared to 2014 demonstrating that efficiencies are resilient at higher prices, as has been evidenced in recent months.

Additionally, it is important to highlight the company's strategy to mitigate the decline of several fields and thus meet production levels through the greater execution of works to wells through well-services activities and workover reflected in operating expenses. This greater execution has been possible in part due to the structural efficiencies obtained in our operating expenses, where a significant component of the savings comes from the reduction in the failure rate of the well lift systems. This index, which corresponds to the frequency with which we have to perform the replacement of the system for lifting a well, has presented reductions between 9% and 22% since 2015, regardless of the lifting system used. In 2017, the basic curve of production exhibited a lower than expected declining of -29 mboed vs. -67 mboed forecasted.

In 2017 production by subsidiaries and joint businesses contributed significantly to the Business Group's output, with growth up 11.1% as compared to 2016. This is largely explained by the start of operations at the gas treatment plant for Hocol S.A.'s Bonga-Mamey fields and the transfer to that company of stakes in the Espinal, Rio Saldaña and Pulí fields by Ecopetrol S.A. For its part, Ecopetrol America Inc. (EAI) saw a 67% increase in its production, primarily due to the operation of the Gunflint field.

Finally, it is important to mention that, as in the previous quarter, the Bicentenario transport system reversal strategy mitigated the effect of the attacks on the Caño Limo - Coveñas Oil Pipeline, avoiding the closure of the Caño Limón Field.

Recovery Factor Enhancement Projects:

The recovery program is continuing to mature toward an expansion phase for those pilots that have successfully completed the analysis stage. Approximately 13% of current production originates from fields that use some type of secondary or tertiary recovery technology, while 87% of production is associated with fields under primary development. The purpose of the recovery program is to expand recovery technologies, improving production in other fields.

For example, Chichimene, one of our major fields, initiated the maturing of the expansion of water injection technology throughout the field, based on the positive results obtained in the pilot. A water injection technology pilot using polymers is also being assessed in various regions of the field, where production results are already starting to be obtained. With a view to maximizing the recovery factor in this extra-heavy crude field, we are continuing to monitor the pilot's operations and conditions to assess the technology.

In the Dina K field, the tertiary recovery project using Polymer Flooding technology is already being executed, where five wells have been drilled and work is being done to optimize the polymer to be injected.

At the same time, we are continuing with the structuring of the water injection expansion projects in fields with pilots that have already seen a positive response in production, such as Llanito, Galán, Castilla, Apiay-Suria and the La Cira Arenas A/B, improved water injection projects in the Yariguí, Casabe and Palogrande fields, and steam injection in the Teca field. This portfolio of future expansions will continue to strengthen, with the results of 13 new evaluation pilots that are currently operating.

It is worth mentioning that a significant portion of the reserves rise in 2017 is explained by the results of the program to increase the recovery factor. It incorporated 73 million barrels of oil equivalent or 25% of the reserves increase. The main contributions came from fields like Chichimene, Castilla, Casabe and Tibu. We are very pleased with the performance of the recovery program which represents one of the pillars for reserves and production growth.



Table 17: Lifting Cost – Ecopetrol Business Group

A	B	C	D	E	F	G	H	I	J
USD/BI	4Q 2017	4Q 2016	% Var	Explanation	2017	2016	% Var	Explanation	% USD
Lifting cost *	8.73	8.63	1.2%	<ul style="list-style-type: none"> • Volume (-USD 0.15/BI): Increase in production of Ecopetrol and Hocol • Cost (+USD 0.17/BI): Increase in costs of Ecopetrol and Hocol. 	7.65	6.49	17.9%	<ul style="list-style-type: none"> • Volume (USD 0.00/BI): Stable production level with respect to 2016. • Cost (+USD 0.90/BI): Increase in costs of Ecopetrol, Hocol and Ecopetrol America. 	16.0%
TRM	2,986.0	3,015.5	-1.0%	• Exchange rate (+USD 0.08/BI): Higher cost due to lower exchange rate of COP 29.45/USD. (Costs in COP expressed in USD).	2,951.3	3,051.0	-3.4%	• Exchange rate (+USD 0.26/BI): Higher cost due to lower exchange rate of COP 99.66/USD. (Costs in COP expressed in USD).	

* Calculated based on barrels produced (without royalties) – SEC methodology

The increase in lifting cost in 2017 as compared to 2016 is largely explained by:

- Higher costs incurred in the Rubiales and Cusiana fields primarily due to their return to Ecopetrol at the beginning of the third quarter of 2016 and of the Recetor field due to return to Ecopetrol on May 30, 2017.
- Higher costs incurred for subsoil maintenance, due to the increased number and greater complexity of well interventions and services, which have succeeded in maintaining and improving the basic production curve.
- High cost of surface maintenance due to the increase in the number of surface equipments participating in order to maintain the operational reliability and integrity of the surface equipments in production operations.
- Higher energy costs and chemical treatment of fluids due to increased water production in fields, primarily at Meta, and incorporation of assets (Rubiales) with high water cut (+98% BSW).

Table 18: Dilution Cost* – Ecopetrol Business Group

A	B	C	D	E	F	G	H	I
USD/BI	4Q 2017	4Q 2016	% Var	Explanation	2017	2016	% Var	Explanation
Dilution cost	4.66	5.04	-7.5%	• Costs (-USD 0.38/BI): Lower cost in Ecopetrol due to the implementation of optimization strategies in the process (600 Cst).	3.87	4.15	-6.7%	• Costs (-USD 0.28/BI): Lower cost in Ecopetrol due to the implementation of optimization strategies in the process (600 Cst).

* Calculated based on barrels sold

Dilution cost together with our total lifting cost accumulated as of December 2017 is 42% less than the equivalent figure for entire year 2014 and 23% less than the equivalent figure in 2015. This result reflects the success of cost reduction strategies such as:

- Increased viscosity in the transport of heavy crude between 2015 and 2017, from 300 cSt to 600 cSt, respectively.
- Decrease in the use of naphtha in the dilution process by mixing with light crude from production fields (Cusiana, Floreña and Ocelote), which also decreases the transportation costs of imported naphtha.
- Reduced API in the transport of heavy crudes (from 16° API to 15° API), largely in the oil pipeline from the ODL fields.
- Reduction in the dilution cost was obtained despite the higher costs incurred in the Rubiales and Cusiana fields by given their return to Ecopetrol at the beginning of the third quarter of 2016.



Financial results of the Exploration and Production segment

Fourth-quarter 2017 revenue was up versus the same period the previous year, largely due to (i) better price spread, ii) increased volumes of domestic sales of crude, primarily to refineries, and gas to third parties, offset by iii) the effect associated with the lower average COP/USD exchange rate on sale prices.

Sales costs for the segment rose primarily as a result of: i) higher costs of crude purchases due to the increase in prices and volumes purchased, ii) higher maintenance cost to maintain current production levels, as well as greater predictive and preventive maintenance of rotating and static equipments and civil works, iii) higher cost of contracted services due to the return of the Recetor field, and iv) higher costs of transport due to the implementation of alternate evacuation schemes because of attacks on the Caño Limón system.

Increase in operating expenses due to: i) greater recognition by seismic activity in applying to expenses the exploratory activities for the Warrior 2, Parmer-1, Kronos-1, Brama-1, Siluro-1, Venus 2 wells, the wells in Block CPO-10, Molusco-1, Lunera-1, Godric Norte-1, Dumbo-1 and Pollera among others; and ii) a gain generated on the valuation at fair value of the acquisition of the additional 11.6% at the K2 field in the Gulf of Mexico.

In the latest quarter of 2017, there was a net recovery of the impairment recorded in previous years, as a result of the valuation of the segment's cash-generating units, taking into account the new market variables, the incorporation of new reserves, price spreads versus the Brent benchmark, and available technical and operational information, largely in foreign oil fields, offsetting an impairment expense in the onshore fields.

The segment's EBITDA margin in 2017 was 37%, the highest in the past three years, showing a sound recovery of the segment's performance.

The segment's Q4 2017 non-operating financial results posted a loss, versus the gain posted the same period of 2016, primarily due to: i) the recovery of resources from the fund intended for the litigation in Santiago de las Atalayas in 2016, partially offset by ii) higher financial returns in 2017 on the segment's cash position, and iii) lower interest expense on loans due to lower leverage of the segment as a result of debt prepayments.

B. Midstream

Table 19: Profit and Loss Statement – Midstream

A	B	C	D	E	F	G	H	I
COP Billion	4Q 2017	4Q 2016	Δ \$	Δ (%)	2017	2016	Δ \$	Δ (%)
Sales	2,793	2,518	275	10.9%	10,598	10,649	(51)	(0.5%)
DD&A Costs	289	238	51	21.4%	1,101	966	135	14.0%
Variable Costs	190	148	42	28.4%	634	488	146	29.9%
Fixed Costs	423	514	(91)	(17.7%)	1,537	1,896	(359)	(18.9%)
Cost of Sales	902	900	2	0.2%	3,272	3,350	(78)	(2.3%)
Gross profit	1,891	1,618	273	16.9%	7,326	7,299	27	0.4%
Operating Expenses	281	290	(9)	(3.1%)	637	751	(114)	(15.2%)
Recovery (expenses) impairment of non-current assets	(65)	(42)	(23)	54.8%	(59)	(41)	(18)	43.9%
Operating Profit (Loss)	1,675	1,370	305	22.3%	6,748	6,589	159	2.4%
Financial Income (Loss)	(92)	(27)	(65)	240.7%	(386)	(243)	(143)	58.8%
Share of profit of companies	(10)	-	(10)	0.0%	(42)	(1)	(41)	4,100.0%
Net Income (Loss) Before Income Tax	1,573	1,343	230	17.1%	6,320	6,345	(25)	(0.4%)
Provision for Income Tax	(604)	(466)	(138)	29.6%	(2,561)	(2,666)	105	(3.9%)
Net Income (Loss) Consolidated	969	877	92	10.5%	3,759	3,679	80	2.2%
Non-controlling interests	(197)	(175)	(22)	12.6%	(784)	(847)	63	(7.4%)
Net income (Loss) attributable to owners of Ecopetrol	772	702	70	10.0%	2,975	2,832	143	5.0%
EBITDA	1,911	1,593	318	20.0%	7,910	7,788	122	1.6%
EBITDA Margin	68.4%	63.3%	5.2%		74.6%	73.1%	1.5%	



Progress on key projects

San Fernando – Monterrey: In the fourth quarter of 2017, commissioning and extended testing activities were completed, which allowed for the startup of the system on January 1, 2018.

Ocensa P135: The project began to operate on July 1, 2017, after extended tests were completed. Ocensa's capacity increased from 610 to 745 mbd at 300 cSt.

Transport of crudes with higher viscosity (600 cSt): In the first half of 2017, the project to transport extra heavy crude at 600 cSt was completed, entailing improvements in the infrastructure of Ocensa, ODC and Cenit. During 2017, heavy crude oil was transported from Apiay to Coveñas, thus achieving the export of the first shipment with viscosity greater than 500 cSt. As a result, significant efficiencies in dilution cost were accomplished for the Upstream segment vs. 2016.

Bicentenario pipeline bi-directional operation: The bi-directional operation of the Bicentenario oil pipeline help to mitigate the impact of the attacks on the Caño Limon - Coveñas pipeline, avoiding shutdowns in the Caño Limón field, despite the Banadía - Ayacucho section of the Caño Limón Coveñas system was out of service 53% of the time. By 2018 we will continue to have an alternative way to move oil from such field.

Table 20: Volumes Transported – Ecopetrol Business Group

A	B	C	D	E	F	G
mbod	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Crude	835.5	828.2	0.9%	823.3	867.0	(5.0%)
Refined Products	270.4	263.5	2.6%	268.2	263.1	1.9%
Total	1,105.9	1,091.7	1.3%	1,091.5	1,130.1	(3.4%)

During the fourth quarter of 2017, the total volume transported, including crude and refined, exceeded one million barrels per day, which represents an increase of 1.3% compared to the same period of 2016.

The total volume of crude oil transported by pipelines during the year 2017 was 823 thousand barrels per day, which is equivalent to a reduction of 5% compared to 2016, mainly due to the effects on the Caño Limón - Coveñas pipeline, which was inoperative 53% of the year. Of the total crude transported by the system, approximately 60% is owned by the Ecopetrol Business Group.

For its part, thanks to the increase in demand for refined products in the country and the elimination of restrictions in the Pozos Colorados - Galán system, the volume transported by pipelines increased by 1.9% compared to 2016, reaching 268 thousand barrels per day for the year 2017. Approximately 23% of the volume transported in the year by product pipelines corresponded to products owned by Ecopetrol.

Table 21: Cost per Barrel Transported – Ecopetrol Business Group

A	B	C	D	E	F	G	H	I	J
USD/Bl	4Q 2017	4Q 2016	% Var	Explanation	2017	2016	% Var	Explanation	% USD
Transportation cost	4.00	4.25	-5.8%	<ul style="list-style-type: none"> • Volume (-USD 0.10/Bl): Higher volumes transported by contingency operation of Bicentenario pipeline. • Cost (-USD 0.19/Bl): Lower cost by less operations and maintenance activity. 	3.63	3.74	-3.0%	<ul style="list-style-type: none"> • Volume (+USD 0.13/Bl): Lower volumes transported due to lower production levels. • Cost (-USD 0.36/Bl): Lower cost by less operations and maintenance activity. 	8.0%
Exchange rate	2,986.0	3,015.5	-1.0%	• Exchange rate (+USD 0.04/Bl): Higher cost due to lower exchange rate of COP 29.45/USD. (Costs in COP expressed in USD).	2,951.3	3,051.0	-3.4%	• Exchange rate (+USD 0.12/Bl): Higher cost due to lower exchange rate of COP 99.66/USD. (Costs in COP expressed in USD).	



Financial results of the Midstream segment

Revenue for the fourth quarter of 2017 was up versus the same period in 2016, largely due to the increase in volumes transported because of the reversal of the Bicentenario Oil Pipeline, which complemented the Araguaney-Monterrey and Ocesa systems, allowing for the removal of crude despite the extended lack of availability on the Caño Limón Coveñas system. On a full-year basis, revenue remained stable despite the lower average exchange rate of COP 2,951/USD in 2017 versus COP 3,051/USD in 2016. This variation of e represented lower revenues in 2017 for approximately COP 260 billion.

The cost of sales remained stable when comparing the fourth quarter of 2017 to the fourth quarter of 2016. The transformation program for the optimization of operation and maintenance costs in 2017 offset the higher depreciation associated with the entry of Project P135 and the depreciation of capitalizable major maintenance.

On a full-year basis, the segment's cost of sales excluding depreciation was COP 2.2 trillion in 2017, a savings of COP 213 billion versus 2016. This was despite the higher variable cost associated with the greater energy demand required for the transport of heavier crudes.

Operating expenses both in the fourth quarter of 2017 and for the year 2017 were down compared to the same periods in 2016, primarily due to the implementation of synergies associated with the commissioning of the new operating model and maintenance in the segment subsidiaries.

2017 saw a recovery of impairment for the midstream and logistics segment, primarily in the South Oil Pipeline, which includes the Trans-Andino Oil Pipeline, reflecting the increase in flows from the Port of Tumaco.

Net financial results were subject to higher expenses compared to the same period the previous year, largely because of the lower financial revenue due to the drop in the rates of return on the segment's investments, and higher debt interest expenses associated with the commissioning of Project P135, which resulted in the non-compounding of interest on that project's financing debt.

During the fourth quarter of 2017 the positive financial results of the transportation segment were maintained, reaching an EBITDA of close to 1.91 trillion pesos as a result of the execution of the transformation program aimed at optimizing transportation costs in the segment.

In the accumulated for 2017, EBITDA reached a figure close to 7.91 trillion pesos, exceeding the 2016 result of close to 122 billion pesos and representing an EBITDA margin of 74.6%, growing 1.6% compared to the EBITDA of 2016.



C. Downstream

Table 22: Profit and Loss Statement – Downstream

A	B	C	D	E	F	G	H	I
COP Billion	4Q 2017	4Q 2016	Δ \$	Δ (%)	2017	2016	Δ \$	Δ (%)
Sales	8,184	6,723	1,461	21.7%	28,644	24,824	3,820	15.4%
DD&A Costs	265	93	172	184.9%	1,083	950	133	14.0%
Variable Costs	6,873	5,590	1,283	23.0%	23,969	20,384	3,585	17.6%
Fixed Costs	615	514	101	19.6%	1,803	1,510	293	19.4%
Cost of Sales	7,753	6,197	1,556	25.1%	26,855	22,844	4,011	17.6%
Gross profit	431	526	(95)	(18.1%)	1,789	1,980	(191)	(9.6%)
Operating Expenses	373	473	(100)	(21.1%)	1,493	1,802	(309)	(17.1%)
Recovery (expenses) impairment of non-current assets	(1,077)	712	(1,789)	(251.3%)	(1,068)	773	(1,841)	(238.2%)
Operating Profit (Loss)	1,135	(659)	1,794	(272.2%)	1,364	(595)	118	(329.2%)
Financial Income (Loss)	(92)	(314)	222	(70.7%)	(783)	(811)	28	(3.5%)
Share of profit of companies	1	7	(6)	(85.7%)	15	23	(8)	(34.8%)
Net Income (Loss) Before Income Tax	1,044	(966)	2,010	(208.1%)	596	(1,383)	138	(143.1%)
Provision for Income Tax	(60)	(69)	9	(13.0%)	(357)	(625)	268	(42.9%)
Net Income (Loss) Consolidated	984	(1,035)	2,019	(195.1%)	239	(2,008)	406	(111.9%)
Non-controlling interests	1	3	(2)	(66.7%)	2	8	(6)	(75.0%)
Net income (Loss) attributable to owners of Ecopetrol	985	(1,032)	2,017	(195.4%)	241	(2,000)	2,241	(112.1%)
EBITDA	423	319	104	32.6%	1,940	1,848	92	5.0%
EBITDA Margin	5.2%	4.7%	0.4%		6.8%	7.4%	(0.7%)	

Cartagena Refinery

The Cartagena refinery achieved total sales volume of 146 mbd in Q4 2017, of which 83 mbd corresponded to domestic sales and 63 mbd to exports. Sales represented revenue of USD 968 million in the fourth quarter of 2017, up 49% over the fourth quarter of 2016, as a result of an increase in both sales volume and prices.

The fourth quarter saw an average load of 147 mbd, with an average total for the year of 136 mbd, exceeding the total load for 2016 (117 mbd) by 16%. The load composition in the fourth quarter of 2017 was 66% domestic and 34% imported crude, versus approximately 43% domestic crude during the same period of 2016.

In terms of gross refining margin, we note a sustained quarter-on-quarter increase, as a result of the conclusion of the refinery's stabilization period, in addition to optimization of the diet (due to the increase in domestic crudes) and better product prices.

During the final quarter of the year the refinery's global performance testing was successfully completed in Q4 2017, resulting in the start of the refinery's optimization and continuous operation stage. For 60 days, the 34 units of the refinery operated according to their design parameters and in a synchronized manner, without incidents of process or environmental safety, with an average load of 144,000 barrels / day.

Table 23: Refining Margin – Cartagena Refinery

A	B	C	D	E	F	G
USD/BI	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Refining Margin	12.5	8.0	56.6%	9.5	5.3	79.1%



Barrancabermeja Refinery

Table 24: Load, Use factor and Production – Barrancabermeja Refinery

A	B	C	D	E	F	G
	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Refinery runs* (mbod)	221.5	208.7	6.2%	209.8	213.1	(1.5%)
Utilization factor (%)	84.3	75.4	11.9%	80.8	75.4	7.2%
Production (mboed)	224.3	209.3	7.2%	212.4	214.2	(0.8%)

* Corresponds to volumes effectively loaded, not those received

Load and production rose in the fourth quarter of 2017 versus the same quarter in 2016, due largely to the scheduled maintenance of the crude unit U-2100 in 2016.

Table 25: Refining Margin – Barrancabermeja Refinery

A	B	C	D	E	F	G
USD/BI	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
Refining Margin	12.0	14.8	(19.0%)	13.5	14.0	(3.0%)

Comparing the fourth quarters of 2017 and 2016, we note a reduction in the Barrancabermeja's refining margin, due largely to the increase in the cost of the crude basket, which was not offset by the increase in product prices, in line with normal market behavior.

Table 26: Cash cost of refining (does not include Cartagena refinery) – Ecopetrol Business Group

A	B	C	D	E	F	G	H	I	J
USD/BI	4Q 2017	4Q 2016	% Var	Explanation	2017	2016	% Var	Explanation	% USD
Refining operating cash cost	4.37	4.09	6.0%	<ul style="list-style-type: none"> • Volume (+USD 0.20/BI): Lower availability in light and medium crude oils. • Cost (+USD 0.05/BI): Higher operational and maintenance costs due to change in refining through-put mix, lower costs of industrial services. 	4.62	4.11	12.3%	<ul style="list-style-type: none"> • Volume (+USD 0.08/BI): Lower availability in light and medium crude oils. • Cost (+USD 0.28/BI): Higher operational and maintenance costs due to change in refining through-put mix, lower costs of industrial services. 	17.0%
Exchange rate	2,986.0	3,015.5	-1.0%	• Exchange rate (+USD 0.03/BI): Higher cost due to lower exchange rate of COP 29.45/USD. (Costs in COP expressed in USD).	2,951.3	3,051.0	-3.4%	• Exchange rate (+USD 0.15/BI): Higher cost due to lower exchange rate of COP 99.66/USD. (Costs in COP expressed in USD).	

Bioenergy

In 2017 Bionergy completed the construction of the ethanol plant which started commercial operation in April of 2017. Currently the plant is going through a stabilization phase. 36 million liters of ethanol were produced last year to supply the local gasoline market.

This project demonstrates the effort of Ecopetrol to get involved in the production of cleaner fuels that improve air quality, while promoting the social and economic growth in its areas of influence.



Financial results of the downstream segment

Fourth-quarter 2017 revenue showed an increase over the same period the previous year, explained largely by: i) better product sale prices, in line with the performance of international prices, and ii) higher returns on higher value products (diesel and gasolines) in the Barrancabermeja and Cartagena refineries.

The cost of sales increased in the fourth quarter, explained largely by: i) greater load, ii) increase in the price of the two refineries' crude baskets, and iii) higher cost of raw materials from Esenttia.

Operating expenses declined largely due to lower expenses of startup and stabilization of the Cartagena refinery.

The fourth quarter saw a recovery in impairment largely at the Cartagena refinery as a result of i) greater certainty in refining margins due to the ratification of implementation of the international convention for the prevention of pollution by ships (Marpol) starting 2020, ii) better international prices and refining margins with positive effect on cash flows; and iii) operational and financial optimization for stabilization of the new refinery. Impairment was also recognized at Bioenergy and the Barrancabermeja refinery, this last one related to financial charges capitalized as part of the Refinery Modernization project, which is currently suspended.

For the fourth quarter, we note the positive operating performance of the segment leveraged by the refineries, with a higher EBITDA compared to the same quarter the previous year and the year as a whole. We would note that the Cartagena refinery had a positive EBITDA and Net Income in 2017.

Financial expenses declined primarily due to the reduction in the average exchange rate associated with the segment's foreign currency debt, and lower interest expenses given the debt prepayments made during the quarter and year.

9. Results of Cost- and Expense-Reduction Initiatives

The Business Group's efficiency strategy continued in Q4 2017, yielding efficiencies of COP 1.2 trillion. These results were leveraged by the integral management of the company which at year-end totaled COP 2.58 trillion.

Table 27: Principal structural savings initiatives in 2017

A	B		C		D		E	
	4Q 2017	4Q 2016	2017	2016	2017	2016	2017	2016
COP Billion								
Optimization of drilling and facilities construction costs	485	45	724	118				
Improved commercial strategy	194	13	285	0				
Optimization of O&M Midstream cost	149	172	252	387				
Higher revenues and margins at refineries	137	70	373	160				
Heavy crude oil dilution and evacuation	88	85	352	830				
Savings on staff areas, maintenance of facilities and other	50	205	141	514				
Optimization of lifting cost	36	63	198	199				
Lower deferred production	25	0	229	0				
Optimization of refining cash cost	12	6	35	46				
Total	1,175	658	2,588	2,253				



10. Investments

Investments in 2017 as a whole totaled USD 2.2 billion (67% in Ecopetrol S.A. and 33% in affiliates and subsidiaries).

Table 28: Investments by segment – Ecopetrol Business Group

A	B	C	D	E
2017 (USD Million)	Ecopetrol S.A.	Affiliates and Subsidiaries	Total	Share
Production	1,204.0	168.0	1,372.1	62.2%
Refining, Petrochemicals and Biofuels	105.7	154.5	260.2	11.8%
Exploration	161.7	214.3	376.0	17.0%
Transportation	0.0	186.9	186.9	8.5%
Corporate	12.4	0.0	12.4	0.6%
Total	1,484	724	2,208	

Production (63% of investments): The Business Group invested USD 1,372 million, of which some 50% corresponded to activities executed in the Orinoquía and Rubiales regions. Were obtain efficiencies for 7% of the Capex executed during the year.

Exploration (17% of investments): Total investment was USD 376 million, concentrated primarily in activities in Colombia's offshore (Gorgón1, Purple Angel-1, Siluro-1, Molusco-1, Brama-1 wells) and the Gulf of Mexico (Warrior-2). Efforts were also pursued to capture information and pre-drilling in the Colombian onshore with a view to maturing opportunities in the country. Efficiencies rose to 17% of investments executed in 2017.

Refining, Petrochemicals and Bio-fuels (12% of investments): Most of the investments were concentrated on the closing of the Bioenergy project (USD 88 million), followed by maintenance and operational continuity investments in the Barrancabermeja refinery (USD 82 million) and in Cartagena refinery (USD 46 million).

Transport (8% of investments): We highlight the Cenit (USD 147 million) and Ocesa (USD 34 million) investments, the principal projects of which involve operational continuity, as well as the San Fernando Monterrey Project, with an investment of USD 87 million.

The lower investment execution of 2017 versus the initial estimate is mainly explained by: i) renegotiation of obligations with the National Hydrocarbons Agency (ANH) for USD 150 million, ii) efficiencies and savings in CAPEX for USD 240 million and iii) activities that were not carried out this year due to a longer time in the maturation of projects as a result of capital discipline, displacing approximately USD 500 million for the year 2018.

In 2018 Ecopetrol expect investing between COP 10 trillion and 12 trillion. After two years of a successful conversion plan focused on cost reduction and capital discipline, the plan approved by the Board of Directors for 2018 is oriented toward increasing reserves and hydrocarbon production, capturing the benefits for an international environment more favorable to the sector, and continuing along the path of efficiency.

The plan provides that 85% of the funds will be intended for strategic investments in the exploration and production segments. We highlight the drilling of over 620 development wells, at least 12 exploratory wells, 28 drill holes and the acquisition of over 41,000 kilometers of 2D and 3D seismic. For 2018, 50% of the approved projects are in maturity phase 4 versus only 25% when the 2017 investment plan was approved.



96% of the investment is expected to be made in Colombia, and the remainder is expected to be allocated to the projects the Business Group has in the United States (Gulf of Mexico), Mexico, Brazil and Peru.

Investments in the Midstream and Downstream segments, equivalent to 14% of the plan, are expected to be directed toward ensuring the reliability, integrity, performance standards and operating efficiency of the entire oil pipeline and poly-duct network for the Barrancabermeja and Cartagena refineries.

Among the aspects analyzed by Ecopetrol for the development of its 2020 corporate strategy, the Board of Directors decided to suspend the sale of its subsidiary Polypropylene del Caribe S.A. –Esentia. As part of the new strategy, it is contemplated to direct the efforts to ensure the Business Group’s subsidiaries, have a competitive position in our various business segments and providing the necessary investments for this purpose.

II. Organizational Consolidation and Social Responsibility (Ecopetrol S.A.)

1. Organizational Consolidation

Table 29: HSE (Health, Safety and Environmental) Performance

A	B	C	D	E
HSE Index*	4Q 2017	4Q 2016	2017	2016
Accident frequency index (accidents per million labor hours)	0.70	1.12	0.64	1.09
Environmental incidents	3	3	14	8

* The results of the indicators are subject to change after the close of the quarter because some accidents and incidents are reclassified according to the final result of investigations.

Relevant milestones:

In line with the purpose of strengthening security as a pillar of its operations, the performance of the Total Recordable Incident Frequency Index (TRIF) for 2017, of 0.64 recordable accidents per million man-hours, positions the company as one of the best in the world in terms of safety in the Oil & Gas sector.

In Process Safety, we saw the best results in the past nine years, with a Level 1 Process Safety Incidents Indicator in five incidents, down 17% from 2015 and 2016. This result is leveraged primarily on the implementation of safe practices and the strengthening of leadership at the management levels.

With a view to aligning our practices with the global standard, Ecopetrol S.A. obtained OSHAS 18001 certification (Job Safety and Health) and ISO 14001 certification (Environmental Management), allowing it to ratify the high standards in HSE and expand its market competitiveness.

2. Corporate Responsibility

Social Investment:

As of December 31, 2017, Ecopetrol S.A. invested resources for social investment projects totaling COP 18,502 million pesos, representing an approximate 25% increase from the COP 14,855 million invested in 2016. Funds in 2017 have been allocated to programs to close gaps in education and health, culture, infrastructure and institutional strengthening.



Strategy Updating:

As part of the process of updating its Corporate Responsibility strategy, in December 2017 the Ecopetrol Corporate Responsibility Office (GRC) was created, reporting to the Company's General Secretary. The purpose of the GRC is to identify, adopt and facilitate the incorporation of initiatives that leverage the achievement of business objectives and ensure Ecopetrol's positioning as an organization that behaves responsibly with its interest groups.

Consistent with its commitment to transparency and combating corruption, Ecopetrol participated actively in defining the 2018 Work Plan for the Extraction Industries Transparency Initiative (EITI) in Colombia and in developing the EITI Report for fiscal year 2016. The EITI is a global standard that promotes revenue and reporting transparency in the extraction sector, comprising companies of the mining and hydrocarbons industries, representatives of civil society and representatives of the Government.

By executing 1,672 surveys in various operating regions throughout the entire country, in Q4 2017 Ecopetrol saw the completion of the Perception and Expectations Survey of its seven interest groups: Shareholders and investors; Clients; Partners; Employees; Contractors and their employees; Society and Community; and Government.

The survey assesses perceptions involving Ecopetrol with regard to 11 Corporate Responsibility attributes, which are critical to the construction and strengthening of relations of trust (e.g., fulfillment of acquired commitments, ethical and transparent practices, responsibility for the community, responsibility for the environment, respect for Human Rights, etc.).

The results, which will be disclosed during the first quarter of 2018, contribute to a deeper knowledge of each interest group, in line with what is established in the different management systems (ISO 9001, ISO 14001, OSHAS 18000). Likewise, they serve as an input to review the promise of value, objectives and indicators of Corporate Responsibility established by Ecopetrol.

In the environmental front, we presented the best result of the last 10 years of the "Barrels Spilled by Operational Cause" indicator, with a spilled volume of 50 barrels and a 75% reduction of the spilled volume compared to 2016. Likewise, the emission of 1.0 million tons of CO₂ was reduced through the implementation of process optimization projects, the use of natural gas for electricity generation or sale and energy efficiency. During 2017, we obtained 132 environmental authorizations that leveraged the start of projects and the continuity of the company's operations.

As a consequence of what was established by the Ecopetrol human rights office, the company continues to monitor its performance in its human rights management. A report was also delivered with key indicators in matters of human rights, to be included in the 2017 Sustainability Report.



III. Quarterly Results Presentations

Ecopetrol management will make two online presentations to review the results of the fourth quarter of 2017.

Spanish

February 28, 2018
7:30 a.m. Bogotá
7:30 a.m. New York

English

February 28, 2018
9:00 a.m. Bogotá
9:00 a.m. New York

The online broadcast will be available at the Ecopetrol website: www.ecopetrol.com.co

The presentation via webcast will be available at the following links:

- <http://event.onlineseminarsolutions.com/wcc/r/16010381/F17449F21C67CE66AEFE37C54F1B0EB8>(Spanish)
- <http://event.onlineseminarsolutions.com/wcc/r/16010421/82D6B304C09D64459DD2D1989DA3DDEC>(English)

Please be sure your browser allows for normal operation of the online presentation. We recommend the latest versions of Internet Explorer, Google Chrome and Mozilla Firefox.

Excel figures will be available at the following link:

<https://www.ecopetrol.com.co/wps/portal/es/ecopetrol-web/relacion-inversionistas/informacion-financiera/resultados-trimestrales>

Statements on future projections:

This press release may contain statements of future projections relating to business prospects, estimates of operating and financial results, and Ecopetrol's growth prospects. These are projections, and therefore are based solely on management's expectations of the company's future and its continuous access to capital to finance the Company's sales plan. Achieving these estimates in the future depends basically on changes in market conditions, government regulations, competitive pressures, the performance of the Colombian economy and industry, and other factors; therefore, they are subject to change without prior notice.

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IV. Ecopetrol Business Group Appendices

Table 1: Gross Production per Region – Ecopetrol Business Group Net Interest

A	B	C	D	E	F	G
mboed	4Q 2017	4Q 2016	Δ (%)	2017	2016	Δ (%)
La Cira-Infantas	24.8	20.5	21.0%	22.8	19.3	18.1%
Casabe	15.1	16.2	(6.8%)	15.9	17.8	(10.7%)
Yarigui	13.9	16.0	(13.1%)	15.0	17.2	(12.8%)
Other	28.7	31.4	(8.6%)	30.0	32.3	(7.1%)
Total Central Region	82.5	84.1	(1.9%)	83.7	86.6	(3.3%)
Castilla	113.7	115.7	(1.7%)	114.1	121.3	(5.9%)
Chichimene	69.7	71.3	(2.2%)	70.5	74.0	(4.7%)
Cupiagua	31.9	36.6	(12.8%)	34.9	40.0	(12.8%)
Cusiana (2)	38.7	39.3	(1.5%)	37.1	19.3	92.2%
Other (3)	24.1	16.1	49.7%	21.6	16.5	30.9%
Total Orinoquía Region	278.1	279.0	(0.3%)	278.2	271.1	2.6%
Huila Area (4)	3.2	3.4	(5.9%)	3.2	3.4	(5.9%)
San Francisco Area	5.9	6.1	(3.3%)	6.2	6.6	(6.1%)
Tello Area	4.0	4.4	(9.1%)	4.1	4.7	(12.8%)
Other	12.4	13.7	(9.5%)	12.6	14.1	(10.6%)
Total South Region	25.5	27.6	(7.6%)	26.1	28.8	(9.4%)
Rubiales (1)	121.2	117.3	3.3%	118.7	61.5	93.0%
Caño Sur (3)	1.7	1.0	70.0%	1.4	0.4	250.0%
Total East Region	122.9	118.3	3.9%	120.1	61.9	0.9
Rubiales (1)	0.0	0.0	0.0%	0.0	41.4	0.0%
Cusiana (2)	0.0	0.0	0.0%	0.0	15.2	0.0%
Guajira	27.3	29.5	(7.5%)	27.1	33.3	(18.6%)
Caño Limón	23.1	23.4	(1.3%)	22.2	23.3	(4.7%)
Piedemonte	30.8	29.8	3.4%	29.5	30.4	(3.0%)
Quifa	18.7	17.3	8.1%	18.8	19.6	(4.1%)
Nare	12.9	14.7	(12.2%)	13.4	15.9	(15.7%)
Other	35.5	39.9	(11.0%)	36.9	40.6	(9.1%)
Total Associated Operations	148.3	154.6	(4.1%)	147.9	219.7	(32.7%)
Total Ecopetrol S.A.	657.3	663.6	(0.9%)	656.0	668.1	(1.8%)
Direct Operation	511.1	512.2	(0.2%)	510.6	451.6	13.1%
Associated Operation	146.2	151.4	(3.4%)	145.4	216.5	(32.8%)
Ocelote (**)	11.9	11.4	4.8%	13.5	11.2	20.5%
Other	16.7	8.2	103.8%	14.0	7.6	84.2%
Total Hocol	28.7	19.6	46.2%	27.5	18.8	46.3%
Piedemonte	14.4	15.1	(4.6%)	14.7	15.4	(4.5%)
Tauramena/Río Chitamena	0.3	0.3	0.0%	0.2	2.3	(91.3%)
Other	0.0	1.2	(100.0%)	0.5	1.2	(58.3%)
Total Equión*	14.7	16.6	(11.4%)	15.4	18.9	(18.5%)
Lobitos	2.6	2.7	(3.7%)	2.4	2.3	4.3%
Peña Negra	1.6	1.8	(11.1%)	1.8	2.0	(10.0%)
Other	1.0	1.1	(9.1%)	0.8	1.1	(27.3%)
Total Savia*	5.2	5.6	(7.1%)	5.0	5.4	(7.4%)
Dalmatian	3.1	1.5	106.7%	2.7	1.5	80.0%
K2	1.0	1.9	(47.4%)	1.2	1.8	(33.3%)
Gunflint	6.5	8.1	(19.8%)	7.3	3.4	114.7%
Total Ecopetrol America Inc.	10.6	11.5	(7.8%)	11.2	6.7	67.2%
Total Affiliates	59.2	53.3	11.0%	59.1	49.8	18.7%
Total Group's Production	717	717	(0.1%)	715	718	(0.4%)

* Equión and Savia do not consolidate within the Ecopetrol Business Group.

** Ocelote: Since Q1 2017, in the production of the Guarrojo contract, the Pintado and Guarrojo fields have been included separately from Ocelote.

(1) Rubiales: Up to the close of H1 2016, this field belonged to the Office of the Vice President for Assets with Partners. Since July 1, it has belonged to the new Eastern Region Vice President's Office.

(2) Cusiana: Up to the close of H1 2016, this field belonged to the Office of the Vice President for Assets with Partners. Since the second half, it has belonged to the Orinoquia Region Vice President's Office.

(3) Caño Sur: Up to the close of H1 2016, this field belonged to the Orinoquia Region Vice President's Office. Since the second half, it has belonged to the new Eastern Region Vice President's Office.

(4) Huila: Some assets were reclassified and are reported under Other fields of the Southern Region.

**Table 2: Gross Production – Ecopetrol Business Group (By type of Crude)**

	A	B	C	D	E	F	G
mboed	4Q 2017	4Q 2016	Δ (%)		2017	2016	Δ (%)
Light	64.9	69.3	(6.3%)		66.6	66.6	0.0%
Medium	170.9	175.1	(2.4%)		173.3	179.5	(3.5%)
Heavy	352.3	349.6	0.8%		351.0	346.0	1.4%
Total	588.1	594.0	(1.0%)		590.9	592.1	(0.2%)

Table 3: Net Production* – Ecopetrol Business Group**

	A	B	C	D	E	F	G
mboed	4Q 2017	4Q 2016	Δ (%)		2017	2016	Δ (%)
Crude Oil	500.1	498.5	0.3%		501.4	503.0	(0.3%)
Natural Gas***	108.9	94.5	15.2%		105.6	97.7	8.1%
Total	609.0	593.0	2.7%		607.0	600.7	1.0%

* Net production does not include royalties and is prorated for Ecopetrol's stake in each Company.

** Equión and Savia are incorporated through the equity method.

*** Gas production includes white products.

Table 4: Profit and Loss Statement – Ecopetrol Business Group

	A	B	C	D	E
COP Billion	4Q 2017	4Q 2016	2017	2016	
Revenue					
Local Sales		7,902	6,550	28,236	24,745
Export Sales		7,461	6,763	26,974	22,987
Total Revenue		15,363	13,313	55,210	47,732
Cost of Sales					
Depreciation, Amortization and Depletion		1,810	1,873	8,117	7,370
Variable cost DD&A		1,186	1,520	5,750	5,319
Fixed cost depreciation		624	353	2,367	2,051
Variable Costs		5,500	5,573	20,803	19,626
Imported products		2,591	3,395	11,637	12,049
Purchase of Hydrocarbons		2,142	1,610	7,067	5,215
Hydrocarbon Transportation Services		100	148	666	783
Inventories and others		667	420	1,433	1,579
Fixed Costs		2,435	2,259	7,973	7,240
Contracted Services		728	721	2,422	2,344
Maintenance		551	636	2,039	1,998
Labor Costs		488	473	1,815	1,572
Other		668	429	1,697	1,326
Total Cost of Sales		9,745	9,705	36,893	34,236
Gross Income		5,618	3,608	18,317	13,496
Operating Expenses		1,402	1,193	4,185	4,401
Administration expenses		489	900	2,843	3,673
Exploration and Projects expenses		913	293	1,342	728
Recovery (expenses) impairment of non-current assets		(1,399)	782	(1,373)	842
Operating Income		5,615	1,633	15,505	8,253
Finance result, net		(538)	221	(2,501)	(1,183)
Foreign exchange, net		156	138	6	968
Interest, net		(538)	(588)	(1,980)	(2,378)
Financial Income/Loss		(156)	671	(527)	227
Share of profit of companies		(25)	(24)	33	(10)
Income before income tax		5,052	1,830	13,037	7,060
Income Tax		(1,429)	(1,472)	(5,635)	(4,656)
Net Income Consolidated		3,623	358	7,402	2,404
Non-controlling interest		(196)	(172)	(782)	(839)
Net income attributable to Owners of Ecopetrol		3,427	186	6,620	1,565
EBITDA		5,778	4,474	23,075	18,018
EBITDA Margin		37.6%	33.6%	41.8%	37.7%



Table 5: Statement of Financial Position / Balance Sheet – Ecopetrol Business Group

A	B	C	D
COP Billion	December 31, 2017	December 31, 2016	Δ (%)
Current assets			
Cash and cash equivalents	7,946	8,410	(5.5%)
Trade and other receivables	6,099	4,213	44.8%
Inventories	4,601	3,842	19.8%
Current tax assets	625	1,129	(44.6%)
Financial assets held for sale	-	52	(100.0%)
Other financial assets	2,968	5,316	(44.2%)
Other assets	881	1,035	(14.9%)
	23,120	23,997	(3.7%)
Non-current assets held for sale	104	132	(21.2%)
Total current assets	23,224	24,129	(3.8%)
Non-current assets			
Investments in associates and joint ventures	1,330	1,553	(14.4%)
Trade and other receivables	777	729	6.6%
Property, plant and equipment	61,360	62,269	(1.5%)
Natural and environmental resources	21,308	22,341	(4.6%)
Intangibles	380	272	39.7%
Deferred tax assets	7,128	6,896	3.4%
Other financial assets	3,566	1,371	160.1%
Other non-current assets	1,602	1,747	(8.3%)
	97,451	97,178	0.3%
Total assets	120,675	121,307	(0.5%)
Liabilities			
Current liabilities			
Loans and borrowings	5,145	4,126	24.7%
Trade and other payables	6,968	6,854	1.7%
Provision for employees benefits	1,830	1,974	(7.3%)
Current tax liabilities	2,006	2,131	(5.9%)
Accrued liabilities and provisions	559	822	(32.0%)
Other liabilities	339	440	(23.0%)
	16,847	16,347	3.1%
Liabilities related to non-current assets held for sale	-	40	(100.0%)
Total current liabilities	16,847	16,387	2.8%
Non-current liabilities			
Loans and borrowings	38,403	48,096	(20.2%)
Trade and other payables	29	24	20.8%
Provision for employees benefits	6,502	3,901	66.7%
Deferred tax liabilities	2,595	2,229	16.4%
Accrued liabilities and provisions	5,979	5,096	17.3%
Other long-term liabilities	539	255	111.4%
	54,047	59,601	(9.3%)
Total liabilities	70,894	75,988	(6.7%)
Equity			
Equity attributable to owners of the Company	47,899	43,674	9.7%
Non-controlling interests	1,882	1,645	14.4%
Total Equity	49,781	45,319	9.8%
Total liabilities and equity	120,675	121,307	(0.5%)

**Table 6: Comprehensive Income Statement – Ecopetrol Business Group**

A	B	C	D	E
COP Billion	4Q 2017	4Q 2016	2017	2016
Net income consolidated	3,623	358	7,402	2,404
Components of other comprehensive income, net of taxes				
Accumulated foreign currency translation	238	847	(260)	(983)
Cash flow hedges for future exports	(30)	(311)	292	991
Hedge of a net investment in foreign operation	(166)	(416)	58	(155)
Measurement of defined benefit obligation	(1,685)	(1,506)	(1,548)	(1,153)
Others	(17)	(114)	16	43
Total other comprehensive income	(1,660)	(1,500)	(1,442)	(1,257)
Total Comprehensive income	1,963	(1,142)	5,960	1,147
Attributable to:				
Shareholders	1,743	(1,336)	5,171	341
Non-controlling interests	220	194	789	806
Total Comprehensive income	1,963	(1,142)	5,960	1,147

Table 7: Cash Flow Statement – Ecopetrol Business Group

A	B	C	D	E
COP Billion	4Q 2017	4Q 2016	2017	2016
Cash flow provided by operating activities:				
Net income attributable to Owners of Ecopetrol S.A.	3,427	186	6,620	1,565
Adjustments to reconcile net income to cash provided by operating activities:				
Non-controlling interests	196	172	782	839
Income tax	1,429	1,472	5,635	4,656
Depreciation, depletion and amortization	1,837	1,922	8,267	7,592
Foreign exchange (gain) loss	(156)	(138)	(6)	(968)
Finance costs recognised in profit or loss	843	816	3,139	3,346
Dry wells	624	189	898	343
Loss (gain) on disposal of non-current assets	(23)	67	27	79
Impairment of current and non-current assets	(1,367)	807	(1,342)	916
Fair value (gain) on financial assets valuation	4	(16)	(105)	(60)
Profit in acquisition of participations in joint operations	(451)	-	(451)	-
Gain on assets for sale	(4)	(60)	(180)	(47)
(Gain) loss on share of profit of associates and joint ventures	25	24	(33)	10
Realized foreign exchange cash flow hedges	168	206	583	720
Others minor items	14	-	14	-
Net changes in operating assets and liabilities	-116	-1021	-2657	-410
Income tax paid	-97	-602	-4217	-4348
Cash provided by operating activities	6,353	4,024	16,974	14,233
Cash flows from investing activities:				
Investment in property, plant and equipment	(954)	(1,424)	(2,363)	(3,647)
Investment in natural and environmental resources	(1,352)	(805)	(3,568)	(2,121)
Payments for intangibles	(15)	(23)	(176)	(69)
Sale of assets held for sale and equity instruments	35	242	216	967
(Purchases) sales of other financial assets	(1,569)	(654)	565	(5,447)
Interest received	109	99	406	386
Dividends received	1	37	270	438
Proceeds from sales of assets	197	-	266	109
Net cash used in investing activities	(3,548)	(2,528)	(4,384)	(9,384)
Cash flows from financing activities:				
Proceeds (repayment of) from borrowings	(1,901)	(154)	(8,562)	1,444
Interest paid	(642)	(478)	(2,697)	(2,495)
Dividends paid	(200)	(319)	(1,505)	(1,712)
Net cash used in financing activities	(2,743)	(951)	(12,764)	(2,763)
Exchange difference in cash and cash equivalents	31	154	(290)	(226)
Net (decrease) increase in cash and cash equivalents	93	699	(464)	1,860
Cash and cash equivalents at the beginning of the period	7,853	7,711	8,410	6,550
Cash and cash equivalents at the end of the period	7,946	8,410	7,946	8,410



Table 8: EBITDA Reconciliation – Business Group

A	B	C	D	E
COP Billion	4Q 2017	4Q 2016	2017	2016
RECONCILIATION NET INCOME TO EBITDA				
Net income attributable to Ecopetrol's owners	3,427	186	6,620	1,565
+ Depreciation, depletion and amortization	1,837	1,922	8,267	7,592
+/- Impairment of non-current assets	(1,399)	782	(1,373)	842
- Gain in acquisition of participation in joint operations	(451)	-	(451)	-
+/- Finance results, net	538	(221)	2,501	1,183
+ Income tax	1,429	1,472	5,635	4,656
+ Other taxes	201	161	1,094	1,341
+/- Non-controlling interest	196	172	782	839
CONSOLIDATED EBITDA	5,778	4,474	23,075	18,018

Table 9: EBITDA Reconciliation by Segment (Q4 2017)

A	B	C	D	E	F
COP Billion	E&P	Refining & Petrochemicals	Transportation and Logistics	Eliminations	Consolidated
RECONCILIATION NET INCOME TO EBITDA					
Net income attributable to Ecopetrol's owners	1,670	985	772	-	3,427
+ Depreciation, depletion and amortization	1,267	280	290	-	1,837
+/- Impairment of non-current assets	(257)	(1,077)	(65)	-	(1,399)
- Gain in acquisition of participation in joint operations	(451)	-	-	-	(451)
+/- Finance results, net	354	92	92	-	538
+ Income tax	765	60	604	-	1,429
+ Other taxes	96	84	21	-	201
+/- Non-controlling interest	-	(1)	197	-	196
CONSOLIDATED EBITDA	3,444	423	1,911	-	5,778

Table 10: EBITDA Reconciliation by Segment (Q4 2016)

A	B	C	D	E	F
COP Billion	E&P	Refining & Petrochemicals	Transportation and Logistics	Eliminations	Consolidated
RECONCILIATION NET INCOME TO EBITDA					
Net income attributable to Ecopetrol's owners	516	(1,032)	702	-	186
+ Depreciation, depletion and amortization	1,537	142	243	-	1,922
+/- Impairment of non-current assets	112	712	(42)	-	782
+/- Finance results, net	(509)	314	27	(53)	(221)
+ Income tax	937	69	466	-	1,472
+ Other taxes	22	117	22	-	161
+/- Non-controlling interest	-	(3)	175	-	172
CONSOLIDATED EBITDA	2,615	319	1,593	(53)	4,474

Table 11: EBITDA Reconciliation by Segment (Total 2017)

A	B	C	D	E	F
COP Billion	E&P	Refining & Petrochemicals	Transportation and Logistics	Eliminations	Consolidated
RECONCILIATION NET INCOME TO EBITDA					
Net income attributable to Ecopetrol's owners	3,405	241	2,975	(1)	6,620
+ Depreciation, depletion and amortization	5,966	1,190	1,111	-	8,267
+/- Impairment of non-current assets	(246)	(1,068)	(59)	-	(1,373)
- Gain in acquisition of participation in joint operations	(451)	-	-	-	(451)
+/- Finance results, net	1,333	783	385	-	2,501
+ Income tax	2,717	357	2,561	-	5,635
+ Other taxes	502	439	153	-	1,094
+/- Non-controlling interest	-	(2)	784	-	782
CONSOLIDATED EBITDA	13,226	1,940	7,910	(1)	23,075



Table 12: EBITDA Reconciliation by Segment (Total 2016)

A	B	C	D	E	F
COP Billion	E&P	Refining & Petrochemicals	Transportation and Logistics	Eliminations	Consolidated
RECONCILIATION NET INCOME TO EBITDA					
Net income attributable to Ecopetrol's owners	745	(2,000)	2,832	(12)	1,565
+ Depreciation, depletion and amortization	5,466	1,147	979	-	7,592
+/- Impairment of non-current assets	110	773	(41)	-	842
+/- Finance results, net	118	811	243	11	1,183
+ Income tax	1,365	625	2,666	-	4,656
+ Other taxes	579	500	262	-	1,341
+/- Non-controlling interest	-	(8)	847	-	839
CONSOLIDATED EBITDA	8,383	1,848	7,788	(1)	18,018

Table 13: Long-term debt – Ecopetrol Business Group*

A	B	C	D
Company	Denominated in U.S. Dollars	Denominated in Colombian Pesos**	Total
Ecopetrol	11,965	3,196,700	13,036
Bicentenario	-	1,373,750	460
ODL	-	619,297	208
Bioenergy	-	454,328	152
Ocensa	500	-	500
Total	12,465	5,644,075	14,357

* Nominal value of debt as of December 31, 2017, not including accrual of interest.

** Figures expressed in millions of dollars equivalent to the Exchange Rate as of December 31, 2017.

V. Appendices: Results of Ecopetrol S.A., principal Subordinates

Following are the Income Statements and Statements of Financial Position of Ecopetrol S.A. (parent company) and the most representative subordinate companies of each segment.

1. Ecopetrol S.A.:

Table 14: Income Statement

A	B	C	D	E
COP Billion	4Q 2017	4Q 2016	2017	2016
Total Sales	13,549	10,901	46,491	38,350
Variable Costs	7,015	6,398	25,685	22,796
Fixed Costs	2,871	2,428	9,784	8,786
Cost of Sales	9,886	8,826	35,469	31,582
Gross Profits	3,663	2,075	11,022	6,768
Operating Expenses	1,453	600	2,998	2,569
Operating Income	2,210	1,475	8,024	4,199
Financial Income (Loss)	(367)	435	(1,753)	(511)
Share of profit of companies	2,276	(679)	3,061	(141)
Income before income tax	4,119	1,231	9,332	3,547
Income Tax	(692)	(1,045)	(2,712)	(1,982)
Net Income	3,427	186	6,620	1,565
EBITDA	4,004	2,836	14,761	10,334
EBITDA Margin	29.6%	26.0%	31.7%	26.9%



Table 15: Statement of Financial Position – Balance Sheet

A	B	C	D
COP Billion	December 31, 2017	December 31, 2016	Δ (%)
Current assets			
Cash and cash equivalents	4,357	5,360	(18.7%)
Trade and other receivables	6,158	4,620	33.3%
Inventories	3,232	2,590	24.8%
Current tax assets	399	661	(39.6%)
Financial assets held for sale	-	52	(100.0%)
Other financial assets	5,196	8,830	(41.2%)
Other assets	777	879	(11.6%)
	20,119	22,992	(12.5%)
Non-current assets held for sale	23	30	(23.3%)
Total current assets	20,142	23,022	(12.5%)
Non-current assets			
Investments in associates and joint ventures	42,709	29,436	45.1%
Trade and other receivables	698	3,089	(77.4%)
Property, plant and equipment	19,961	21,276	(6.2%)
Natural and environmental resources	17,080	18,316	(6.7%)
Intangibles	242	169	43.2%
Deferred tax assets	4,425	4,293	3.1%
Other financial assets	3,054	1,007	203.3%
Other non-current assets	806	930	(13.3%)
Total non-current assets	88,975	78,516	13.3%
Total assets	109,117	101,538	7.5%
Liabilities			
Current liabilities			
Loans and borrowings	4,296	2,650	62.1%
Trade and other payables	6,177	5,299	16.6%
Provision for employees benefits	1,788	1,949	(8.3%)
Current tax liabilities	540	586	(7.8%)
Accrued liabilities and provisions	343	620	(44.7%)
Other liabilities	203	197	0.03046
Total current liabilities	13,347	11,301	18.1%
Non-current liabilities			
Loans and borrowings	34,844	37,090	(6.1%)
Trade and other payables	-	-	0
Provision for employees benefits	6,502	3,901	66.7%
Deferred tax liabilities	1,716	1,296	32.4%
Accrued liabilities and provisions	4,795	4,230	13.4%
Other long-term liabilities	14	46	(69.6%)
Total non-current liabilities	47,871	46,563	2.8%
Total liabilities	61,218	57,864	5.8%
Equity			
Equity attributable to owners of the Company	47,899	43,674	9.7%
Total Equity	47,899	43,674	9.7%
Total liabilities and equity	109,117	101,538	7.5%



2. Principal companies consolidating within the Ecopetrol Business Group

Table 16: Essentia (Propilco) – sales volumes

A	B	C	D	E
Sales Volume (tons)	4Q 2017	4Q 2016	2017	2016
Polypropylene	118,107	100,827	451,308	448,189
Masterbatch	2,761	3,271	10,291	14,140
Polyethylene	5,937	6,421	31,297	26,831
Total	126,805	110,519	492,897	489,160

Table 17: Cartagena Refinery – sales volumes

A	B	C	D	E
Sales Volume (mboed)	4Q 2017	4Q 2016	2017	2016
Local	90.1	52.9	83.1	50.7
International	62.1	82.6	63.3	81.0
Total	152.2	135.5	146.5	131.7

Table 18: Profit and Loss Statement

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
	HOCOL				AMERICA INC				PROPILCO				REFICAR				CENIT			
COP Billion	4Q 2017	4Q 2016	2017	2016	4Q 2017	4Q 2016	2017	2016	4Q 2017	4Q 2016	2017	2016	4Q 2017	4Q 2016	2017	2016	4Q 2017	4Q 2016	2017	2016
Total Sales	272	201	1,184	908	126	150	519	305	557	442	2,001	1,902	2,892	1,965	9,151	6,510	1,040	977	4,058	4,031
Variable Costs	91	80	477	494	96	197	593	343	458	326	1,617	1,362	2,437	1,762	7,984	6,097	94	60	288	195
Fixed Costs	115	82	342	276	23	39	157	95	30	45	118	121	333	254	1,184	1,014	435	409	1,524	1,757
Cost of Sales	206	162	819	770	119	236	750	438	488	371	1,735	1,483	2,770	2,016	9,168	7,111	529	469	1,812	1,952
Gross Profits	66	39	365	138	7	(86)	(231)	(133)	69	71	266	419	122	(51)	(17)	(601)	511	508	2,246	2,079
Operating Expenses	157	200	329	302	(630)	64	(411)	154	48	45	173	168	(1,323)	740	(740)	1,447	28	65	188	294
Operating Income	(91)	(161)	36	(164)	637	(150)	180	(287)	21	26	93	251	1,445	(791)	723	(2,048)	483	443	2,058	1,785
Financial Income (Loss)	-	(5)	(4)	19	(5)	(5)	(16)	(11)	1	-	-	-	(159)	(226)	(611)	(635)	31	17	22	(44)
Share of profit of companies	10	11	48	56	-	-	-	-	32	25	114	105	-	-	-	-	433	403	1,716	1,806
Income before income tax	(81)	(155)	80	(89)	632	(155)	164	(298)	54	51	207	356	1,286	(1,017)	112	(2,683)	947	863	3,796	3,547
Income Tax	-	35	(170)	25	-	-	-	-	(5)	(10)	(46)	(102)	(114)	165	(64)	236	(197)	(146)	(806)	(760)
Net Income	(81)	(120)	(90)	(64)	632	(155)	164	(298)	49	41	161	254	1,172	(852)	48	(2,447)	750	717	2,990	2,787
EBITDA	(8)	74	514	331	(192)	90	(148)	103	32	55	148	312	135	(180)	9	(699)	566	514	2,551	2,291
EBITDA Margin	(2.8%)	36.6%	43.4%	36.4%	(152.7%)	60.0%	(28.6%)	33.6%	5.8%	12.4%	7.4%	16.4%	4.7%	(9.1%)	0.1%	(10.7%)	54.4%	52.6%	62.9%	56.8%

Table 19: Statement of Financial Position – Balance Sheet

A	B	C	D	E	F	G	H	I	J	K
	HOCOL		AMERICA INC		PROPILCO		REFICAR		CENIT	
COP Billion	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Current Assets	701	787	350	192	936	833	2,744	2,006	2,741	839
Non Current Assets	2,210	2,203	3,122	2,732	993	976	24,036	23,295	12,796	12,225
Total Assets	2,911	2,990	3,472	2,924	1,929	1,809	26,780	25,301	15,537	13,064
Current Liabilities	896	934	226	93	311	347	2,526	2,975	910	1,271
Non-Current Liabilities	323	297	281	185	96	94	6,087	14,211	554	728
Total Liabilities	1,219	1,231	507	278	407	441	8,613	17,186	1,464	1,999
Equity	1,692	1,759	2,965	2,646	1,522	1,368	18,167	8,115	14,073	11,065
Total Liabilities and Equity	2,911	2,990	3,472	2,924	1,929	1,809	26,780	25,301	15,537	13,064