

## CREDIT OPINION

3 September 2021

Update

 Rate this Research

### RATINGS

#### Ecopetrol S.A.

Domicile	Bogota, Distrito Capital, Colombia
Long Term Rating	Baa3
Type	LT Issuer Rating - Dom Curr
Outlook	Negative

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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## Ecopetrol S.A.

Update following Baa3 rating affirmation and change in outlook to negative

### Summary

[Ecopetrol S.A.](#)'s (Ecopetrol, Baa3 negative) credit profile reflects the company's status as Colombia's leading oil and gas producer, accounting for about two-thirds of the country's production and 100% of oil product supply. The credit profile also takes into consideration Ecopetrol's sizable production scale, and the solid and relatively stable cash flow from its midstream subsidiary Cenit S.A.S., which includes [Oleoducto Central S.A.](#) (Ocensa, Baa3 stable). Furthermore, we assume a high probability of support from the [Government of Colombia](#) (Baa2 negative) for Ecopetrol and a moderate default correlation between the two issuers. This assessment results in a one-notch uplift to Ecopetrol's senior unsecured rating to Baa3 from its ba1 Baseline Credit Assessment (BCA), which reflects the company's intrinsic credit risk without support considerations.

The change on August 31, 2021 in Ecopetrol's Baa3 rating outlook to negative from stable was based on i) the company's decision to fund the acquisition of 51.4% of [Interconexión Eléctrica S.A. E.S.P.](#)'s (ISA, Baa2 stable) capital for about \$3.67 billion with debt only, which, on top of the \$6.1 billion in reported debt in ISA's balance sheet as of March 2021, will increase Ecopetrol's financial leverage and ii) the fact that the bridge loan raised for the acquisition of ISA has a two-year maturity, which generates refinancing risk. Ecopetrol originally planned to fund the acquisition of ISA with sale of shares and assets, in addition to new debt.

## Credit strengths

- » Leading oil and gas producer, accounting for about two-thirds of Colombia's production, and the only provider of refined products in the country
- » Sizable production scale
- » More diversified cash flow stream after ISA acquisition
- » Portfolio of valuable assets that can be relatively easily monetized, including Ocesa
- » Assumption of high support from the Government of Colombia

## Credit challenges

- » High exploration and production (E&P) operating costs, although in line with regional peers
- » Execution risks arising from its reserve replacement strategy
- » Stagnant gross production, slightly below 700,000 barrels per day

## Rating outlook

The negative rating outlook is based on Moody's view that Ecopetrol's debt leverage and refinancing risk may remain elevated in the next 12-18 months for a Baa3 rating category. However, the outlook could be stabilized earlier if the company reduces and refinances debt, according to its financing plans.

## Factors that could lead to an upgrade

An upgrade of Ecopetrol's ba1 BCA or Baa3 rating is unlikely in the next 12 to 18 months given the negative rating outlook. However, if the company demonstrates the ability to reduce debt while growing production and keeping proved reserve life stable, its rating outlook could be stabilized. Specifically, its rating outlook could be stabilized if the company's Leverage Full Cycle Ratio remains at 1.5 times, which would indicate stable finding and development costs, and its retained cash flow/net debt were to remain at over 30% on a sustained basis. However, for the company's BCA and rating to rise, retained cash flow/net debt would have to be at over 40% and the Government of Colombia's rating would have to be sustained at Baa2 because it is unlikely that Ecopetrol would be rated above the sovereign rating.

## Factors that could lead to a downgrade

A ratings downgrade could occur if Ecopetrol faces liquidity constraints, if its reserve life declines significantly on a sustained basis, or if retained cash flow/net debt declines to around 20%. In addition, because Ecopetrol's ratings benefit from implicit support from the Government of Colombia, a negative action on the government's rating or a change in our assumptions about government support, could lead to a negative action on Ecopetrol's ratings.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on [www.moody's.com](http://www.moody's.com) for the most updated credit rating action information and rating history.

## Key indicators

Exhibit 1

### Key Indicators for Ecopetrol S.A.[1][2][3]

US Millions	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20	LTM June-21	2021E	2022E
Average Daily Production (MBOE / Day)	636.6	635.6	646.6	655.7	639.8	624.0	639.8	657.0
Total Proved Reserves (MMBOE)	1,569.3	1,630.3	1,700.3	1,867.3	1,743.8	1,743.8	1,748	1,757
Crude Distillation Capacity (mbbls/day)	405.0	405.0	404.8	404.8	404.8	404.8	405.0	450.0
Downstream EBIT/Total Throughput Barrels	\$0.48	\$0.79	\$0.56	\$1.54	-\$3.24	-\$0.30	\$0.2	\$0.2
EBIT / Interest Expense	3.3x	5.6x	8.7x	10.1x	2.4x	6.0x	7.9x	4.9x
RCF / Net Debt	23.5%	41.0%	53.4%	28.4%	7.2%	27.2%	31.4%	25.8%
Debt / Book Capitalization	54.1%	47.9%	40.8%	41.1%	47.6%	45.6%	50.4%	49.2%
EBIT / Avg. Book Capitalization	10.32%	15.09%	24.18%	22.54%	6.35%	14.20%	19.3%	11.4%

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments.

[2] Periods are Financial Year-End unless indicated. LTM = Last Twelve Months. Conversion rate of 6,000 cubic feet = 1 barrel of oil equivalent.

[3] Moody's Forecasts (f) or Projections (proj.) are Moody's opinion and do not represent the views of the issuer.

Source: Moody's Investors Service

## Profile

Ecopetrol is the largest integrated oil and gas company in Colombia. The company has three business segments, namely exploration and production, refining activities and transportation and logistics, and will also participate in the electricity transmission business and other business segments after ISA acquisition. Its production averaged around 640 thousand barrels of oil equivalent per day (mboed), net of royalties, in 2020, and total assets amounted to \$40 billion in December 2020. The Colombian government owns 88.5% of the company through shares held by the Ministry of Finance, and the balance has been traded on the Colombian Securities Exchange since November 2007. Ecopetrol's ADRs are listed on the New York Stock Exchange since 2008. The company's market capitalization as of August 2021 was \$25 billion.

## Detailed credit considerations

### ISA acquisition will increase the Ecopetrol's leverage in the next 12-18 months

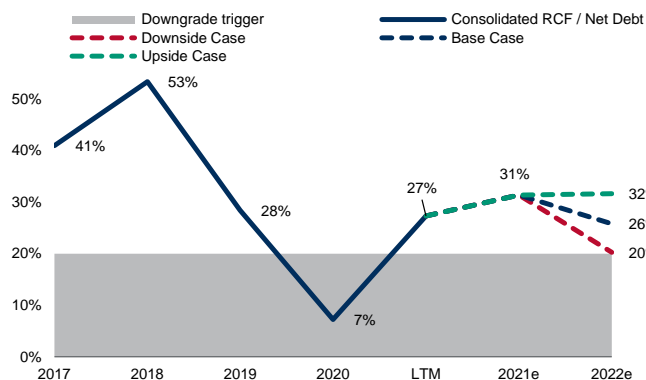
In January 2021 Ecopetrol announced its intention to acquire of 51.4% of ISA for around \$4 billion. At the time the company planned to sell shares and assets as well as raise debt to fund the acquisition. We considered the transaction as a credit positive for Ecopetrol because i) ISA generates a more stable EBITDA compared to that of Ecopetrol's oil and gas commodity business, which increases cash flow visibility for Ecopetrol; ii) ISA operates in Colombia, Brazil, Peru and Chile, which reduces Ecopetrol's geographic concentration risk; and iii) Ecopetrol's capital structure would not materially change after the completion of the acquisition transaction with the planned funding source.

However, on August 2021, the company announced that the \$3.7 billion transaction was going to be financed with a two-year bridge loan. The relatively short maturity of the credit facility raises refinancing risk since for 2023 Ecopetrol already has \$2.9 billion in debt maturities. The increase in leverage to fund the transaction, in addition to ISA's \$6 billion in debt, will increase Ecopetrol's Moody's-adjusted leverage to 2.6x in 2021, up from our previous expectation of 1.5x before the transaction. In addition, retained cash flow (RCF) to net debt will fall to 31% from 51% in 2021, despite higher oil prices.

Ecopetrol's continues to consider various alternatives to refinance the bridge loan, including sale of shares and assets as well as long-term debt. The company expects that the combination of such initiatives will not deteriorate its credit metrics materially. We assume that the companies' business strategies will not change materially and that their respective management teams, dividend policies and capital investment plans will remain mostly unchanged.

Exhibit 2  
While RCF/Net Debt will remain above the trigger for a downgrade...

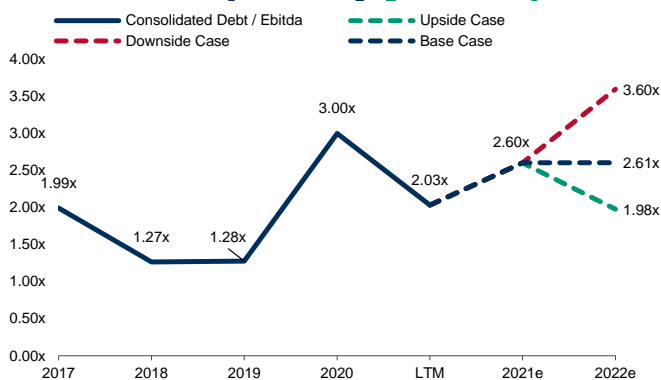
Moody's Adjusted Retained cash flow to net debt



Note: We assume that ISA will be consolidated on December 31st, 2021 and therefore 2022 financial statements will fully consolidate ISA's EBITDA and RCF. Base Case: Brent oil at \$55/bbl; Upside Case: \$65/bbl; Downside Case: \$45/bbl  
Source: Moody's Investors Service

Exhibit 3  
Ecopetrol's Debt/EBITDA in 2021-22 will be above the average in 2017-19

Moody's Adjusted Debt/EBITDA



Source: Moody's Investors Service

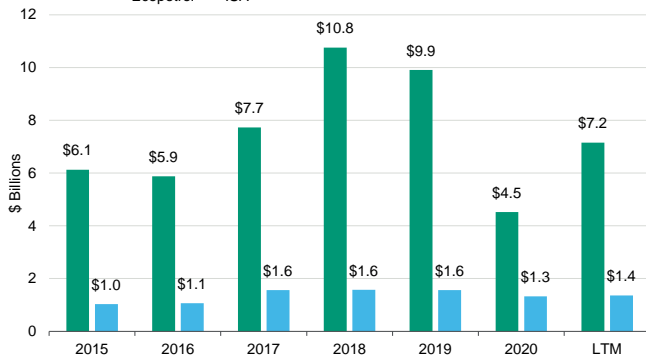
**Despite higher leverage, ISA will help strengthen Ecopetrol's profitability and reduce cash flow volatility**

On the positive side, ISA generates higher EBITDA compared to that of Ecopetrol's oil and gas business, which increases cash flow visibility. In average, EBITDA margin was 73% in 2017-2020 for ISA, highly above Ecopetrol EBITDA margin of 40%. Additionally, ISA profitability metrics are far more stable than those of Ecopetrol's. In the midst of the coronavirus pandemic, with depressed oil demand and prices, Moody's-adjusted EBITDA for Ecopetrol in 2020 fell to \$4.5 billion, 45% lower than a year earlier. However, ISA's metrics were less affected by the pandemic: its EBITDA decreased by 20% to \$1.3 billion in 2020 from \$1.6 billion a year earlier.

The acquisition of ISA will benefit Ecopetrol with a more diversified cash flow stream. Ecopetrol estimates that, in the first half of 2021, ISA accounted for around 25% of the group's consolidated EBITDA. Ecopetrol also estimates that the E&P contribution to consolidated EBITDA will fall to 36% from 48% ex-ante and that the midstream segment will account for 34% in 2021, down from 45% in 2020. This acquisition will help Ecopetrol reduce its exposure to the volatile nature of commodity prices as only one third of the company's EBITDA generation will come from the upstream segment. It is also positive that ISA will contribute to expand Ecopetrol's geographic and business diversification since the transmission power company operates in Colombia, Brazil, Peru, and Chile.

Exhibit 4  
ISA has high profitability margins and more cash flow stability...

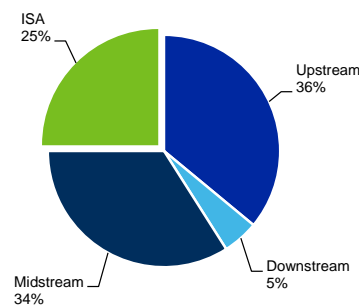
Moody's Adjusted EBITDA



All figures and ratios are calculated using Moody's estimates and standard adjustments. EBITDA is defines as net income before interest expenses, income taxes, and depreciation and amortization. LTM as June 2021.  
Source: Moody's Investors Service

Exhibit 5  
Which will reduce Ecopetrol's exposure to oil price volatility

Pro-Forma EBITDA as of June 2021



Source: Ecopetrol S.A.

In addition, the transaction is positive for Ecopetrol's TESG (Technology, Environmental, Social and Governance) agenda and in line with the company's carbon reduction target for 2030 and 2050. After consolidation of ISA, Ecopetrol's rate of metric tons of carbon emission per each billion of EBITDA (MtCO<sub>2</sub>/EBITDA) will decline to 1.37x from 1.61x because the same index for ISA's is 0.02x.

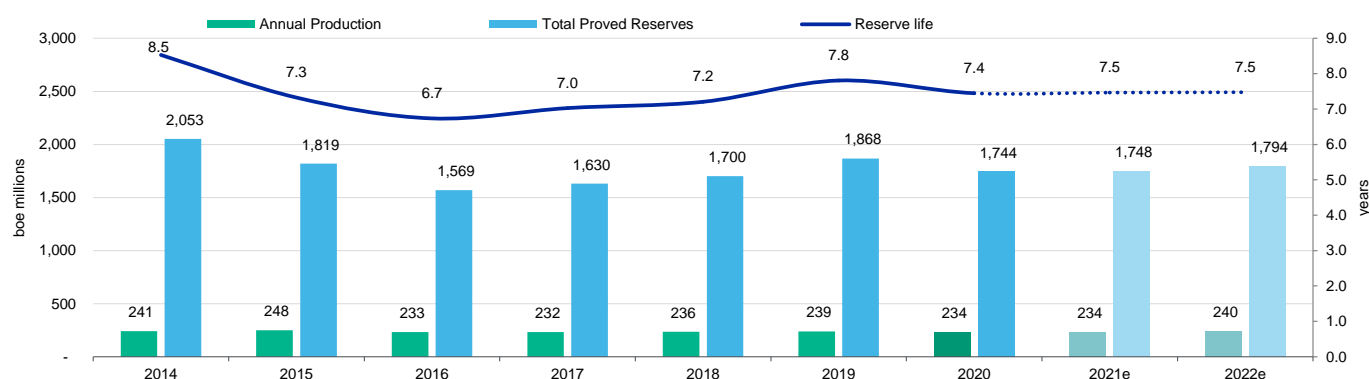
### Ecopetrol has leading upstream and downstream positions in Colombia

Ecopetrol is the leading oil and gas producer in Colombia, accounting for over 60% of the country's oil and gas reserves. The company's crude production accounted for around 80% of its total production in December 2020, with close to 1.7 billion boe of proven reserves in the same period, according to its 20-F published in April 2021. The company estimates average gross production of 690-700 mboed in 2021. In addition to selling its own production, Ecopetrol purchases and trades the government's royalty crude, its own natural gas royalties, and a portion of third-party production in Colombia. Ecopetrol is a medium-sized integrated oil company compared with its larger government-owned peers in Latin America.

Exhibit 6

#### Ecopetrol's reserve life will remain at an adequate level, above the average for the last seven years

##### Production and reserve life trend



Conversion rate of 6,000 cubic feet = 1 barrel of oil equivalent.

Sources: Ecopetrol and Moody's Investors Service (estimates)

In downstream, Ecopetrol owns all of the country's 405,000 barrels per day (bpd) of crude refining capacity through its four refineries. About 98% of the company's production comes from two refineries: the Barrancabermeja refinery, which accounts for 250,000 bpd, and Reficar at Cartagena, which has a 150,000 bpd capacity. Ecopetrol is the largest wholesale marketer in Colombia, with a virtually 100% market share, but does not engage in retail product marketing. In 2016, Ecopetrol completed the upgrade of its Reficar refinery and expanded its capacity by 65,000 bpd to a total distillation capacity of 150,000 bpd, which increased the company's total distillation capacity to 405,000 bpd. The upgrade moved Reficar's Nelson complexity index to 10.5 from 5.1, allowing for lower feedstock cost and better product slate, which improved its overall efficiency. Ecopetrol is also Colombia's largest petrochemical producer, with 480,000 tons of annual polypropylene capacity.

Ecopetrol indirectly owns and operates directly or in joint ventures around 9,000 kilometers of crude oil and refined product pipelines, equivalent to 82% of the Colombian pipeline capacity. This includes 100% or majority stakes in four of the largest crude pipelines, which connect field production to the refineries and to wholesale product and export terminals. Ocesa is a stable source of cash flow for Ecopetrol and provides a liquidity buffer as tariffs are for the most part set in US dollars.

### Ecopetrol has relatively stable reserves and production, but the pandemic and social unrest negatively impacted the company's operating metrics in the past 18 months

Ecopetrol's production growth rate has been relatively low and stable since 2016 but was impacted in the past 18 months because of covid-19 and social unrest in Colombia. In 2020, due to depressed prices and demand, Ecopetrol reported average gross production of 697 mboed, 4% below the average of 725 mboed in 2019. This also affected the company's proved reserve, that fell to 1.7 billion mboe in 2020, 6% less than a year earlier. The company plans to invest around \$4-5 billion per year in 2021-23. In 2020, close to 80% of its total capital spending was allocated to E&P.

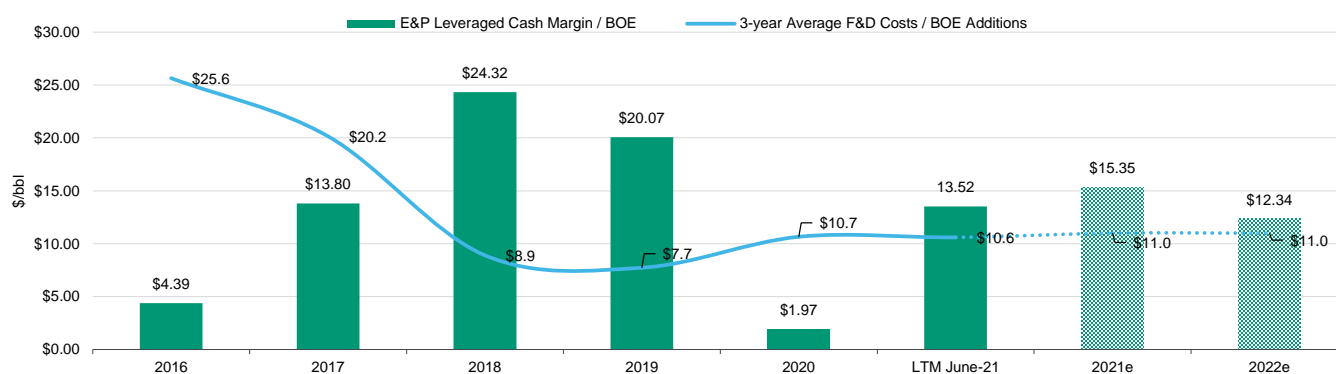
During the supply and demand shock in the first half of 2020, to protect its liquidity, Ecopetrol reduced its capital spending by 45% from the figure in its original budget announced in early 2020. This strategy is in line with the measures taken in 2016 when the company cut its capital spending by 67% compared with that in 2015 and we expect this trend to continue over the next 12-18 months.

Furthermore, in the second quarter of 2021, social protests in Colombia resulted in blockades of the country's main roads and isolated incidents against certain Ecopetrol's infrastructure with adverse consequences on some of the company's upstream, midstream, downstream and commercial activities. Therefore, oil production decreased to 668 mboed in the first half of 2021, down from 697 mboed in 2020 while pipeline transportation decreased to 984 mbbld from 1,017 mbbld in 2020 in the same period. However, we believe these isolated events will not have a material impact on the company's ability to achieve its business targets for 2021. We expect the company to at least maintain this production size in 2021-22. Ecopetrol's production is spread across various regions within Colombia, which helps protect the business against the common guerrilla attacks in the country because the company can adjust its production in its portfolio of assets in the event of disruptions.

Over 2016-19, higher oil prices, combined with better operating and capital efficiency, have helped Ecopetrol improve its credit metrics and cash flow. The company will likely be able to maintain its current reserve life at around 7.5 years through a solid reserve replacement strategy, and its credit metrics will remain strong in the foreseeable future. Ecopetrol plans to continue to enter into associations with large technically capable companies, which will help optimize its enhanced recovery processes and reduce costs; invest in small and medium-sized onshore assets that can add reserves at competitive costs; develop unconventional fields, especially in the Magdalena basin, in association with third parties; and grow inorganically outside Colombia, primarily in projects in the US, Mexico and Brazil, in joint ventures with experienced partners.

Exhibit 7

#### Ecopetrol's credit metrics are vulnerable to volatile oil prices Leveraged cash margin and finding and development cost evolution



Sources: Ecopetrol and Moody's Investors Service (estimates)

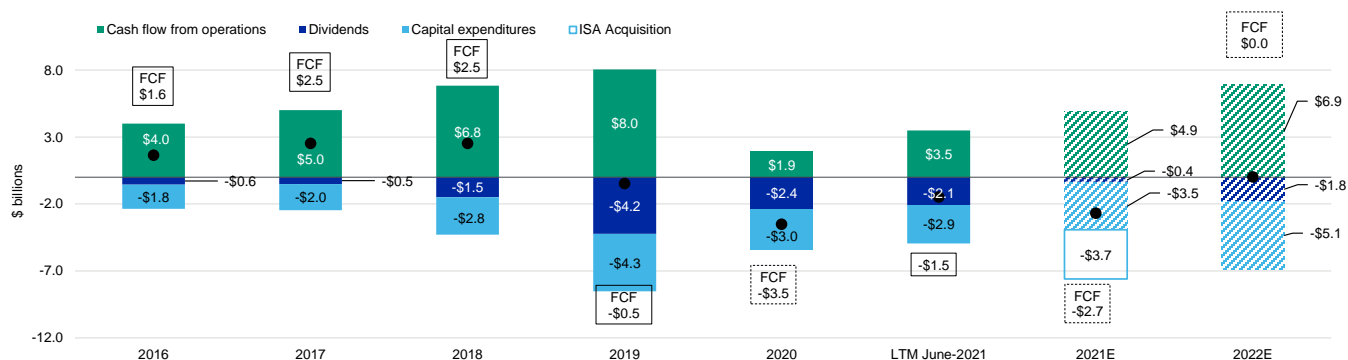
#### Free cash flow (FCF) will be negative in 2021 due to the acquisition of ISA, but should recover somewhat in 2022

Over 2016-19, higher oil prices, combined with better operating and capital efficiency, helped Ecopetrol improve its credit metrics and cash flow from the 2015 levels. Lower capital investments in 2016 aimed at protecting liquidity resulted in positive adjusted FCF (cash flow from operations after dividend payments and capital investments) of \$1.6 billion that year, which was favorable compared with the negative \$3.9 billion in 2015. Better market fundamentals and disciplined capital investment helped Ecopetrol improve its FCF further over 2017-18 to \$2.5 billion per year. In 2019, as a result of lower prices and higher capital investments, Ecopetrol generated negative \$467 million in FCF.

In 2020, Ecopetrol's FCF was negative by around \$3.5 billion as a result of lower prices and volumes, consequence of the supply shock related to geopolitical issues among global oil and gas producers as well as the demand shock caused by the coronavirus pandemic. In 2021 higher oil prices will boost operating funds from operations close to pre-pandemic levels. However, two main factors will affect Ecopetrol's free cash flow generation: i) negative working capital, driven by account receivables related to fuel subsidies, which the company expects to get reimbursed for in 2022, and ii) the \$3.7 billion acquisition of ISA.

However, we expect Ecopetrol's free cash flow to be close to neutral in 2022 as i) crude prices averages about \$55/bbl in the year; ii) production is at least stable; iii) the company maintains operating costs under control; and iv) capital expenditures increases. ISA's strong operating cash flow and favorable results from the midstream business, which benefits from high-capacity utilization and adequate tariffs, will continue to support Ecopetrol's cash generation.

Exhibit 8

**Cash flow evolution**

All figures and ratios are calculated using Moody's estimates and standard adjustments. Moody's forecasts are our opinions and do not represent the views of the issuer.  
Sources: Moody's Financial Metrics™ and Moody's Investors Service (estimates)

**Successful increase in operating efficiency**

As a result of the pandemic, in 2020 Ecopetrol achieved some efficiencies of around COP700 billion compared with those in 2019, across all its operating operations but mostly in exploration and production.

In the upstream segment, Ecopetrol completed the drilling of 18 wells in 2020, one more than the original target of 17 wells, maintaining activities in strategic areas such as "Piedemonte" and Brazil. In 2021, the drilling plan of the company is running above expectations, as of June 2021 Ecopetrol has already drilled eight exploratory wells out the target of nine wells for 2021 and the company's now expects to drill a total of 14 wells for 2021. Operations in the US Permian basin resumed at the end of July 2020, and ramped up strong in 2021. As of June 2021 there were 75 wells in production up from 22 at December 2020, and gross production increased to 48 mboed in the second quarter of 2021, up from 5.2 mboed in 2020.

The downstream segment showed some recovery, increasing total throughput from 255 thousand barrels per day (mbbls/day) levels reported in June 2020 to 320 mbbls/day closing December 2020. Despite the social unrest in Colombia that affected some of Ecopetrol's operations, total throughput increased to 360 mbbls/day in the second quarter of 2021, reporting the highest quarterly EBITDA in the last seven years. The Cartagena Refinery reported 100% use of national crude oil in September 2020, the maximum level since the beginning of its operations.

**ESG considerations**

The rapid spread of the pandemic, the deteriorating global economic outlook, low oil prices and high asset price volatility have created an unprecedented credit shock across a range of sectors and regions. We regard the pandemic as a social risk under our environmental, social and governance (ESG) framework, given the substantial implications for public health and safety.

Ecopetrol aims to prevent, control, mitigate and compensate the potential environmental impacts of its operations and projects; contribute to the improvement of the environmental quality of the territories where it operates; and support sustainable development. Through environmental management, the company seeks to have the required permits and authorizations for its works, projects and activities, and follow up on their strict compliance.

The pandemic, the government measures put in place to contain it, and the weak global economic outlook continue to disrupt economies and credit markets across sectors and regions. Our analysis has taken into consideration the effect on Ecopetrol's performance from the currently weak economic activity in Colombia and a gradual recovery in the coming months. Although an economic recovery is underway, it is tenuous, and its continuation will be closely tied to the containment of the pandemic. As a result, the degree of uncertainty around our forecasts is unusually high.



Ecopetrol's management has the objective to contribute to the growth in economic value by creating sustainable development conditions, allowing the consolidation of operations and the viability of projects. Ecopetrol plans to invest close to COP 1.7 trillion for the 2020-2024 period, aimed at closing social gaps and promoting the development and well-being of the communities where the company operates, with strategic projects in infrastructure, public services, education, sports and health, inclusive rural development and entrepreneurship and business development. Ecopetrol's 2021 investment plan calls for an increase in the allocation of resources to energy transition and sustainability initiatives: around 14% of investments are expected to be directed at expanding the gas chain and other energy sources, including expected investments of over \$200 million in energy efficiency projects and the incorporation of renewable energies; more than \$150 million is expected to be allocated to the decarbonization projects and over \$90 million to efficient water management in operations. In addition, nearly \$80 million is expected to be allocated to investments in technology and innovation, focusing on digital transformation, enhanced recovery, and energy transition. In 2021, the company plans to set aside approximately \$100 million for social investment allocated to the development and well-being of communities where they operate.

The Greenhouse Gas (GHG) Protocol Corporate Standard classifies a company's GHG emissions into three 'scopes'. Direct emission from owned sources (Scope 1), indirect emission from the generation of purchased energy (Scope 2) and Indirect emissions related to the whole value chain of the company and not included in previous scopes (Scope 3). Ecopetrol commitment is to reduce 25% of carbon emission for scope 1 and 2 by 2030, compared to 2019, and to zero by 2050, and also is committed to reduce by 50% of carbon emission of all scopes by 2050. Ecopetrol expects to fulfill these targets by reducing gas flares, making more efficient use of energy, the use of renewable energy, green hydrogen initiatives, carbon capture and reuse, and battery energy storage.

Ecopetrol's board of directors consists of nine members, of which eight are independent. Moreover, the company has several committees in place to support the board's duties. Ecopetrol is a public company, 88.49% owned by the Government of Colombia, with its shares trading on the New York Stock Exchange and the Colombian Stock Exchange. The company has to comply with local and international regulations in terms of compliance and reporting. Beginning in 2019, Directors will be elected for a two-year term. Current Directors were elected at the General Shareholders Assembly held on March 26, 2021. Members of the Board may be reelected indefinitely. The same applies to the CEO position, which is appointed by the Board of Directors and will have at least two alternates. The CEO is elected for a two-year term, may be reelected indefinitely and freely removed prior to the expiration of his term.

Certain former executives of Ecopetrol and Reficar were under investigation by the Colombian Office of the Comptroller General, the Attorney General's Office and the Prosecutor's Office for possible overpayments and wrongdoings regarding the upgrade and expansion of Ecopetrol's Cartagena refinery, Reficar. However, on May 2021, the Prosecutor's Office ceased efforts to continue with the investigation based on the belief that the Board of Directors acted on the principle of good faith and confidence on the capacity of the management.

## Liquidity analysis

Ecopetrol's liquidity is adequate. The company had cash and equivalents of \$1.4 billion as of June 2021. During 2020, the company raised around \$1.1 billion from credit facilities, of which \$665 million were from committed revolvers, and \$2 billion in bonds. Additionally, in July 2021, the company obtained a committed credit facility in the amount of \$1.2 billion for liquidity purposes, which is fully available. We estimate cash flow from operations of close to \$4.9 billion in 2021, which contrasts with \$0.4 billion in debt maturities and \$1.0 billion in interest expenses in the same period. We estimate that Ecopetrol will invest about \$3.5 billion in capital in 2021.

Ecopetrol expects to pay dividends within its dividend policy of 40%-60% of net profit. During the oil price plunge over 2014-16, the Government of Colombia reduced the pressure on Ecopetrol to pay dividends. In December 2020, higher demand, improved price realizations and lower crude differentials helped Ecopetrol to slightly reverse the downward trend seen at the beginning of the year in its three business segments but, given the pandemic, the government allowed Ecopetrol to delay dividend payments related to 2019. During 2020 Ecopetrol paid around \$2.4 billion in dividends but, because of lower income in that year, dividends in 2021 will be only \$0.4 billion.

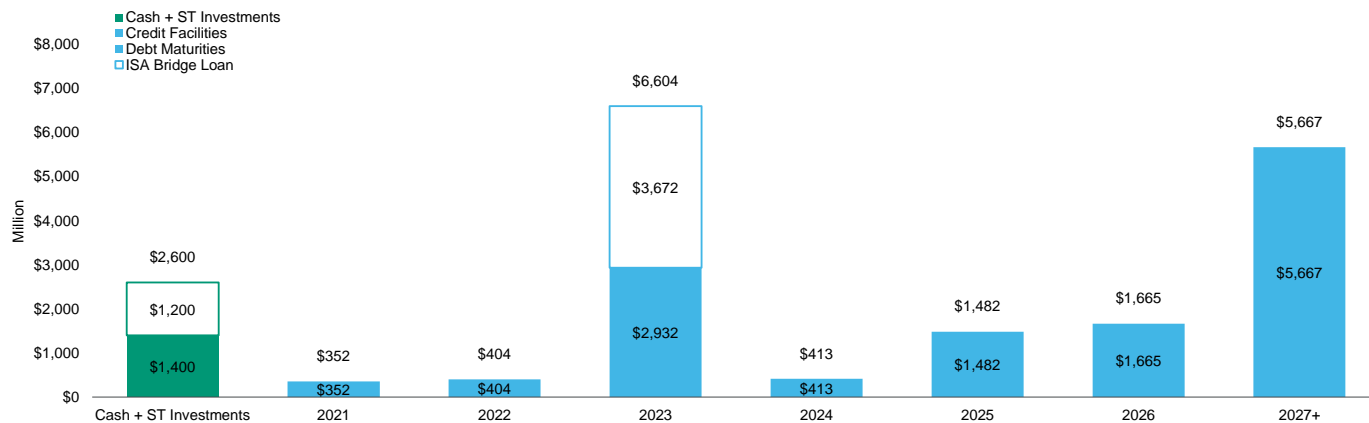
The \$3.7 bridge loan that funded the acquisition of ISA will mature in 2023, which poses refinancing risk for the company, in addition to close to \$3 billion in global notes maturing in the same year. However, Ecopetrol has expressed its commitment to reduce and



refinance those debt payments in advance of the maturity date. For that purpose, Ecopetrol is currently evaluating the best market timing and different funding alternatives, including sale of shares and long-term debt.

Exhibit 9

**Debt maturity profile**



Cash and equivalents as of June 2021, debt maturity profile as of March 2021.

Source: Ecopetrol

## Rating methodology and scorecard factors

The forward-looking scorecard-indicated outcome for factors 1-5 is Baa3, compared with Ecopetrol's ba1 BCA and Baa3 global scale rating. The Government Policy Factor — which is an indicator of the financial risk associated with government taxation and financial dependence on the company — adds two notches to the scorecard-indicated rating and changes the outcome for the 12-18-month forward view to Ba2. The ba1 BCA is based on our expectation that the company's credit profile will improve in the next couple of years.

Exhibit 10

Integrated Oil and Gas Industry [1][2]	Current LTM 6/30/2021		Moody's 12-18 Month Forward View As of 8/30/2021 [3]	
	Measure	Score	Measure	Score
<b>Factor 1 : Scale (20%)</b>				
a) Average Daily Production (Mboe / d)	624	A	657	A
b) Proved Reserves (MMboe)	1,744	Baa	1757	Baa
c) Crude Distillation Capacity (Mbbls / d)	405	Ba	450	Ba
<b>Factor 2 : Business Profile (25%)</b>				
a) Business Profile	Baa	Baa	Baa	Baa
<b>Factor 3 : Profitability and Efficiency (10%)</b>				
a) EBIT / Average Book Capitalization	14.2%	Baa	11.4%	Baa
b) Downstream EBIT / Total Throughput Barrels (\$ / bbl)	-\$0.3	Ca	\$0.2	Caa
<b>Factor 4 : Leverage and Coverage (25%)</b>				
a) EBIT / Interest Expense	6.0x	Baa	4.9x	Baa
b) RCF / Net Debt	27.3%	Baa	25.8%	Baa
c) Total Debt / Book Capitalization	45.6%	Baa	49.2%	Baa
<b>Factor 5 : Financial Policy (20%)</b>				
a) Financial Policy	Ba	Ba	Ba	Ba
<b>Rating:</b>				
Scorecard-Indicated Outcome from Factors 1-5		Baa3		Baa3
Notching Factor: Government Policy Framework		2	2	2
a) Scorecard-Indicated Outcome After Notching Factor		Ba2		Ba2
b) Rating Assigned for non-GRIs or BCA Assigned for GRIs				ba1
<b>Government-Related Issuer</b>			<b>Factor</b>	
a) Baseline Credit Assessment			ba1	
b) Government Local Currency Rating			Baa3	
c) Default Dependence			Moderate	
d) Support			Moderate	
e) Actual Rating Assigned			Baa3	

All ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Moody's forward view does not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.

Source: Moody's Financial Metrics™

## Ratings

Exhibit 11

Category	Moody's Rating
<b>ECOPETROL S.A.</b>	
Outlook	Negative
Issuer Rating - Dom Curr	Baa3
Senior Unsecured	Baa3
<b>OLEODUCTO CENTRAL S.A.</b>	
Outlook	Stable
Senior Unsecured	Baa3

Source: Moody's Investors Service

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