

NATIONAL OIL COMPANIES AND THE ENERGY TRANSITION: ECOPETROL'S ACQUISITION OF AN ELECTRIC TRANSMISSION COMPANY

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The energy transition strategies of international oil companies have come under increased scrutiny from investors and the media as countries across the globe grapple with targets to reduce greenhouse gas emissions.¹ It is unclear if national oil companies (NOCs) are going to feel the same pressure given their government-majority ownership and, if so, how they will adjust their business models.

This commentary explores recent moves by Colombian national oil company Ecopetrol to adapt to the energy transition, especially its bid to acquire a majority stake in Interconexión Eléctrica SA (ISA), an electricity transmission company, for 14.2 trillion Colombian pesos (equal to about \$3.6 billion).²

The proposed acquisition was met with mixed reactions, with some critics suggesting it was an opportunistic move on the part of the Colombian government (which has a majority interest in both companies) to book some revenues and reduce the ballooning fiscal deficit. But rather than analyzing its fiscal merits, this piece analyzes the potential transaction from the viewpoint of Ecopetrol and whether there are lessons from the deal for other NOCs navigating the energy transition.

This commentary begins with a brief background on both companies and the potential benefits for Ecopetrol in pursuing a path that is different relative to what some other oil companies are doing in order to adjust their business models. Ecopetrol faces specific as well as regional challenges that make transition strategies used by the European oil companies less attractive.

The piece then discusses how, if part of the goal of the acquisition is to accelerate Ecopetrol's energy transition and to add shareholder value, a number of complementary actions should be taken to help with the governance aspect of this acquisition while at the same time strengthening Ecopetrol's pledge to become net zero by 2050. For example, in arranging financing, Ecopetrol could explore issuing an environmental, social, and governance (ESG) bond where the proceeds are earmarked for the purchase of ISA, which is already a net-zero company. In addition, the coupon rate could be linked to specific emissions reductions on Ecopetrol's oil and gas activities. Tying these targets to the coupon rate could be seen as a credible mechanism to ensure that the company will comply with its ambitious climate goals. In addition, we propose that Ecopetrol maintain ISA's current governance structure

unmodified and preserve its operational independence. This would allow ISA to benefit from its investment grade status (which Ecopetrol does not enjoy) and continue to deploy its capital expenditures (CapEx) plan geared toward investing in Latin America's electricity sector without interference.

To conclude, this transaction by itself does not guarantee a successful energy transition for Ecopetrol's core business. If Ecopetrol's goal is to diversify its portfolio of activities and reduce its carbon footprint, then it should ensure the sum of the two companies results in synergies that reduce emissions beyond what each one of them can achieve individually. This is not a guaranteed outcome but one that will depend on how ISA performs under Ecopetrol's ownership, the extent to which this transaction brings new opportunities in the renewable energy space, and how the revenues derived from this acquisition help to finance the decarbonization of Ecopetrol.

Background

Ecopetrol is a publicly traded national oil company and the largest company in Colombia by market capitalization.³ While the Colombian government is the majority stockholder, Ecopetrol has been a publicly listed company in the Colombian Stock Exchange since 2007 and in the New York Stock Exchange since 2008. Currently 11.5 percent of its stock is held by private investors both locally and abroad.

Ecopetrol reported an aggregate oil and gas production of about 700,000 barrels of oil equivalent per day in 2020.⁴ The company accounts for around 60 percent of Colombia's 760,000 barrels per day (b/d) oil production and 70 percent of the country's gas production of about 2 billion cubic feet per day.⁵ Ecopetrol is an integrated oil and gas national company with presence both in midstream and downstream, which includes two refineries with a combined refining capacity of about 400,000 b/d, about 9,000 kilometers (km) of oil and gas pipelines, storage, and ports from which it exported around 430,000 b/d in both crude and products in 2020.⁶ Its operations also include petrochemicals, a biofuel plant, and 53 electric self-generation centers with 1,300 MW in generation capacity.⁷

Ecopetrol announced in February 2021 a nonbinding bid to acquire the 51.4 percent stake held by the Colombian government in Interconexión Eléctrica SA, Colombia's power grid operator and the largest power transmission company in Latin America. On August 2, Ecopetrol announced that it was moving to a binding agreement for the majority acquisition of ISA's stock.⁸ ISA owns and operates high transmission networks in six countries, including Colombia, Peru, Brazil, and Chile.⁹

ISA derived 85.6 percent of its EBITDA (earnings before interest, taxes, depreciation, and amortization) from its electricity transmission business in Latin America with 65,612 km and 114,017 megavolt amperes (MVA) of transmission infrastructure (with a further 6.529 km and 15.603 MVA of transmission infrastructure under construction) as of 2020.¹⁰ ISA also operates roads and telecom in the region as part of a revenue diversification strategy to mitigate risk in a highly regulated sector. The company's revenue structure is also regionally diversified with 77 percent of its EBITDA generated outside of Colombia in 2020.¹¹



ISA holds around 70 percent of Colombia's and Peru's transmission sector, 33 percent of Brazil's,¹² and 12 percent of Chile's with concessions averaging 25 years and in perpetuity in Chile and Colombia.¹³ ISA is the largest transmission company in Brazil with a presence in 17 different states, supplying about 95 percent of power transmission in the state of São Paulo, the industrial heartland of the country.¹⁴ The company also has experience with cross border interconnections (Colombia-Ecuador and Ecuador-Peru) and has been proposing the Colombia-Panama electricity interconnection for years without success.¹⁵ These experiences will be key to the future of energy transition in Latin America, which will benefit from greater energy integration.

Local analysts and the markets viewed Ecopetrol's potential acquisition of the 51.4 percent of ISA owned by the Colombian government as driven by the Colombian finance ministry's need to expeditiously raise cash to cover some of the expenses associated with the Covid-19 debacle.¹⁶ Selling a state-owned enterprise (SOE) to another SOE through an interadministrative agreement is seen by some as a shortcut to avoid a more open (and complex) bidding process required by law for privatizations.¹⁷

The final details of the transaction were released on August 12, 2021 and indicate that Ecopetrol is to buy the government's controlling share in ISA for 14.2 trillion Colombian pesos (\$3.6 billion).¹⁸

Concerns about the relationship between the state of Colombia's fiscal situation and the Ecopetrol deal are understandable. The government's deficit is expected to be 10 percent of gross domestic product (GDP) in 2021, which will increase public debt to 67 percent of GDP in 2021 from 50 percent of GDP in 2019. To generate some additional revenue and reduce this year's deficit to 8.6 percent of GDP (instead of 10 percent of GDP), the government has promoted ISA's acquisition by Ecopetrol. From a fiscal accounting perspective, SOEs are not part of the national government, so this is a way of transferring cash from Ecopetrol to the national government, helping it to reduce its very large deficit. However, despite this announcement, both Standard and Poor's and Fitch downgraded the Colombia's sovereign bonds to a BB+ rating, below investment-grade status, in the first half of 2021 on deteriorating fiscal metrics.¹⁹

Still, regardless of its fiscal implications, the transaction has some potential for change for Ecopetrol, especially given that the ISA deal would diversify Ecopetrol's revenues into non-carbon emitting activities as it pledges to become net zero by 2050.²⁰

Ecopetrol's potential acquisition of ISA could be seen as a bet on the need for significant investments in infrastructure centered on power transmission and storage resulting from the energy transition. While uncertain at this point, the scenario portrayed by the International Energy Agency in its recent Net Zero by 2050 report foresees a surge in the expansion and modernization of electricity networks with "annual investment rising from US\$260 billion on average in recent years to around US\$800 billion annually by 2030 and remaining at that level throughout 2050."²¹ Expanding and improving the grid is essential for the deployment of green energy projects and to increase the reliability of energy systems.²² Not only is the increase in electricity demand expected to require further expansions in power transmission,²³ but the increase in the share of renewables in the energy matrix—which relies on projects that



are more dispersed geographically and smaller in scale than the existing large dams—is likely to require significant expansion of the grid.²⁴

In a future of potential stranded oil assets and a growing share of renewables in the energy matrix, investing in power transmission infrastructure could be an interesting energy transition strategy that might be adapted to the realities of Ecopetrol's environment: it leverages Colombia's potential as an energy-rich (but not oil-rich) country through a sector that will dominate how the energy of the future will be delivered. At 7.1 years of production in 2020, Colombia has one of the lowest oil reserves to production ratios of the major oil producing countries in the Western Hemisphere, according to BP's *Statistical Review of World Energy*.²⁵ From the viewpoint of Ecopetrol's minority shareholders, the transaction can hedge the expected decline in oil and gas production resulting from the very low levels of reserves.

Although investors in the region have to cope with political risk,²⁶ ISA is present in countries with favorable track records in the implementation of electricity reforms. These countries have put into place institutional and regulatory frameworks conducive to significant increases in private investments in the sector and have undertaken a growing number of clean energy auctions since 2015.²⁷

The key to the success of this acquisition for Ecopetrol might rely on keeping ISA—which is already net zero—as an independent and autonomous company.²⁸ ISA has a better credit rating than Ecopetrol due to the diversity of its operations in investment grade countries like Chile and Peru. It also has enough cash generation capacity to fund a solid business plan.²⁹ The risk is that Ecopetrol—under pressure due to the decline in its oil and gas production—uses that cash to prioritize investments in fossil fuels. The potential acquisition of ISA should not necessarily be seen as an opportunity for Ecopetrol to fund its core business. On the contrary, by providing a safe and resilient hedge into the electrification side of the energy transition, the deal could allow Ecopetrol to accelerate its own decarbonization. Given Ecopetrol's leadership position in the oil and gas sector in Colombia, such a decarbonization plan could create spillover effects into the whole of the hydrocarbon market in the country, creating decarbonization opportunities beyond Ecopetrol and ISA.

Models for Oil Companies in the Energy Transition

There is not a one-size-fits-all model in the strategies for oil companies to adjust to the energy transition, and each company faces different pressures based on a number of factors, including their production mixes, reserve outlooks, and regions where they operate. Some commentators have been skeptical about Ecopetrol's acquisition of ISA on the grounds that this is not how other international oil companies have been crafting their energy transition plans, some of which are betting on renewables in electricity generation.³⁰

Ecopetrol might have more incentives than other national oil companies to transform itself into a more diversified energy company. Almost all of Ecopetrol's revenues come from domestic oil and gas production. However, its oil and gas reserves levels are low,³¹ and there is uncertainty around the political viability of large-scale development of shale resources in the country, which remains a contested issue.³²



Other companies appear to be in better condition to adapt to the energy transition, however. Some independent European oil companies are diversifying away from an oil-based business model by significantly increasing the share of renewable generation in their own CapEx at a global scale.³³ The crossover of expertise from offshore oil and gas production into offshore wind generation³⁴ has resulted in some European companies like Equinor focusing on the latter.³⁵

ISA brings diversification to Ecopetrol, not only in terms of energy segments, but also in terms of markets. While Ecopetrol has some experience in renewable generation at home, it is mainly for its own operations. Absent a fully integrated Latin American electricity market, Ecopetrol might find it challenging to significantly diversify (let alone substitute) its revenue base organically with electricity generation within the Colombian market. According to Colombia's national accounts, the dollar value of the Colombian electricity sector's GDP in 2020 was around \$6 billion when Ecopetrol's revenues have averaged around \$20 billion per year in the 2015–2020 period, with 50 percent coming from oil exports.

Also, Latin America is already highly dependent on renewables: 45 percent of the electricity comes from hydro sources and 15 percent from non-hydro renewables.³⁶ The expansion into clean generation might offer fewer opportunities relative to the reduction of emissions in transport, agriculture, and manufacturing. It is in this sense that a power transmission company brings an interesting business proposition into the energy transition in Latin America. While solar and wind have seen rapid growth,³⁷ their future expansion hinges on electricity connectivity. This is where ISA can play a key role as it would be necessary to expand and build a more resilient grid that will be required to accommodate the needs of a growing number of geographically dispersed power generation projects and the increased demand for electricity.³⁸

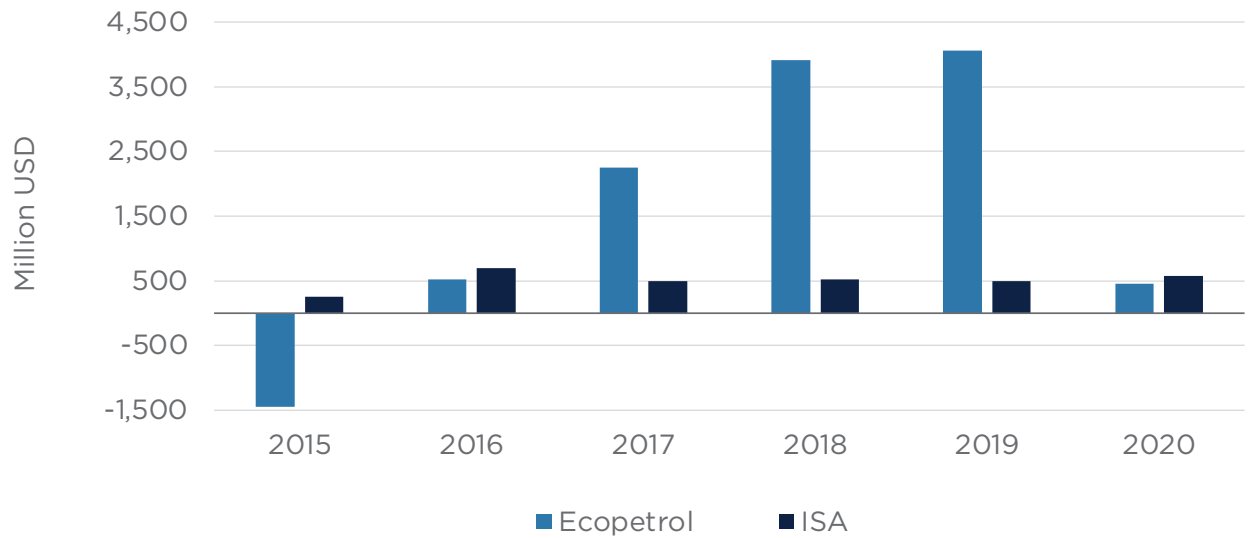
Other Potential Benefits for Ecopetrol: The Financial Angle

With a potential ISA acquisition, Ecopetrol would be gaining stability of cash flow. ISA saw a 25.7 percent increase in net income in 2020 (see Figure 1) during one of the worst economic crises the region had seen in decades due to the pandemic. Ecopetrol's net income remained positive in 2020 but fell by more than 80 percent. While Ecopetrol fared better than many international oil companies (Figure 2), revenues in this industry are very dependent on the price of oil, which is volatile.

As an electricity transmission company, ISA's revenues do not depend on the amount of energy transported. ISA's revenues are regulated and are based on the availability of the transmission lines in each country where it operates.³⁹

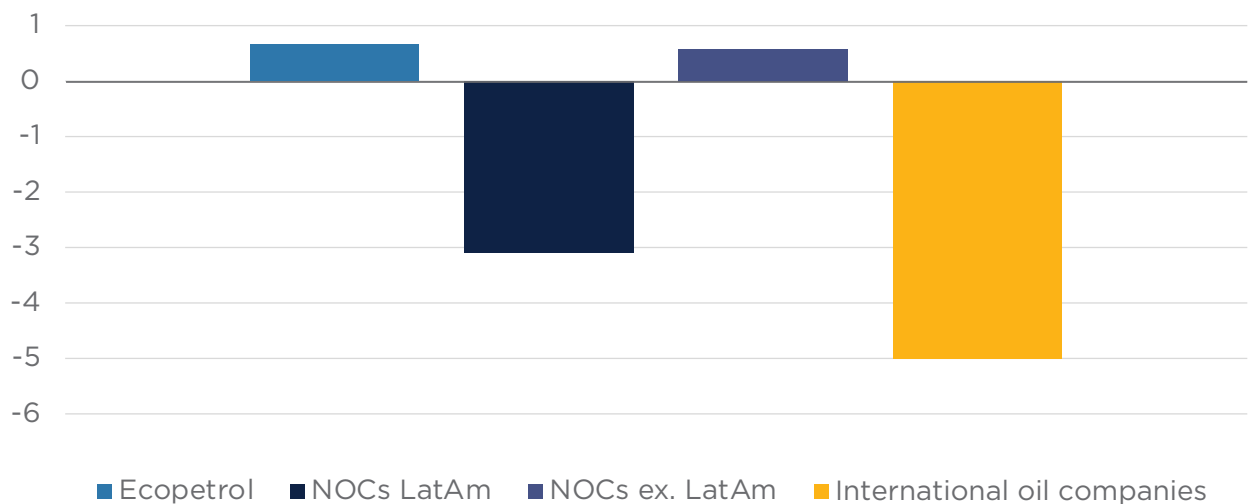


Figure 1: Ecopetrol and ISA net income



Source: Authors' estimates based on financial reports from Ecopetrol and ISA and Colombian peso conversion rates from Bloomberg LP; see note 40 for more information.

Figure 2: Net income (USD per barrel)



Note: NOCs LatAm include Petrobras, YPF, and PEMEX; NOCs ex. LatAm include Aramco, Rosneft, Equinor, Petrochina, and PTTEP; International oil companies include ConocoPhillips, Repsol, Hess, Eni, British Petroleum, Chevron, EXXON, Shell, and Total.

Source: Authors' estimates based on company information and currency conversion rates from Bloomberg LP and reporting from Pemex; see note 41 for more information.



Another potential benefit for Ecopetrol coming out of the ISA transaction could be opening the door for the national oil company to venture into a new source of financing. This is particularly relevant now, given the recent decision by S&P and Fitch to downgrade Ecopetrol to junk status (BB+) in line with Colombia's sovereign rating while leaving ISA as investment grade given its regional diversification.⁴²

ISA has been integrating ESG principles into its business model for some time. Given the growing appetite in the financial sector for sustainable investments, ISA might provide additional incentives for Ecopetrol not only to accelerate its energy transition goals, but also to begin to tap into these growing sources of funding as ESG-linked bonds could potentially represent a lower cost of financing.⁴³

Funds that invest in ESG companies have been growing rapidly, rising to \$2.3 trillion in the second quarter of 2021, according to Morningstar.⁴⁴ While most of these funds have gone toward companies in advanced economies, emerging markets are also attracting investor interest.

ISA has been capitalizing on the ESG financing trend. In 2020, it became the first non-financial corporation in Colombia and Peru, the first power company in Brazil, and the first transmission company in Latin America to issue green bonds.⁴⁵

Recent news reports have suggested that Ecopetrol could complete the ISA transaction with a bond issuance of \$1.4 billion in combination with its own cash flow generation.⁴⁶

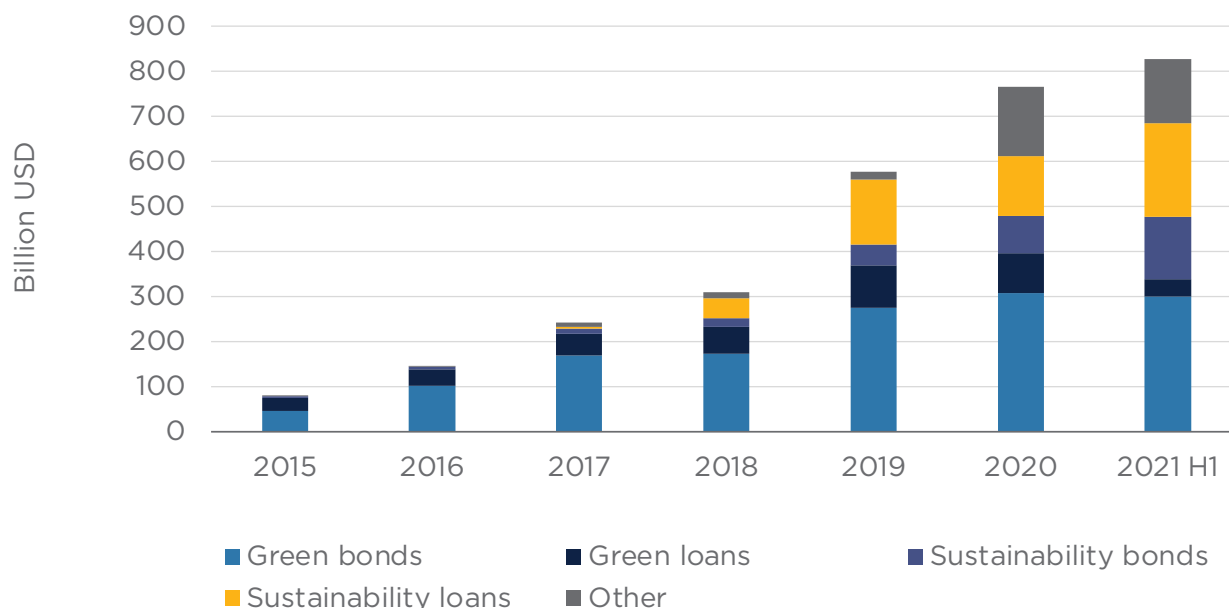
Ecopetrol might have an interesting opportunity if it manages to tap into the ESG bond market and open the space for other NOCs to do the same.⁴⁷ Combining the features of a traditional green bond, where proceeds from the bond are earmarked for the purchase of ISA, with those of a sustainability-linked bond or the newer concept of a transition bond—with a variable coupon rate contingent on the company meeting a specific emissions performance target—could result in a lower yield relative to a conventional bond.

As discussed earlier, Ecopetrol has committed to a net-zero emissions target by 2050. It unveiled a plan to reduce its scope 1 and 2 emissions by 25 percent by 2030 and to meet a zero-flaring target agreed upon under the World Bank's zero flare initiative.⁴⁸ These targets could be part of the performance indicators in a transitional bond.⁴⁹

There are some models for Ecopetrol. The first sustainability-linked bond by an emerging market corporation was issued by Brazilian pulp producer Suzano.⁵⁰ It will have a 10-year maturity and embed a 25-basis points coupon step if the company fails to reduce gas emission intensity by 10.9 percent from a 2015 baseline by 2025. This key performance indicator will be reviewed by an independent third party, which could potentially give greater confidence to investors.



Figure 3: ESG debt issuance



Note: 2021 H1 includes data from January 1–June 30, 2021.

Source: Bloomberg LP, “BI ESG Data Library ESG Debt,” accessed July 2021.

Keeping ISA’s Independence

With the issuance of an ESG bond, Ecopetrol could implicitly commit to an ESG stewardship to benefit its governance strategy vis-à-vis ISA. Fitch has argued that Ecopetrol’s potential acquisition of ISA’s shares owned by the Colombian government could be neutral to negative for ISA. This outlook could materialize if ISA’s corporate governance, business, or financial strategy comes under pressure from Ecopetrol’s majority ownership, “particularly in the event of an increase in dividends.”⁵¹

While such risk perception is valid, it could be contained if the current ownership structure remains intact and this is not a merger.⁵² In other words, it is critical that the current governance provided by ISA’s capital structure, with a well-diversified minority investor base, is preserved.

Also, the commitments provided within ESG or transition bonds could create strong incentives for Ecopetrol to use the dividends provided by ISA to finance its decarbonization commitments.

Conclusion

ISA’s acquisition offers Ecopetrol a number of benefits, including diversification into the electricity market through a non-carbon emitter with a stable revenue source. In addition, ISA has a number of unexploited growth opportunities as the energy transition in Latin America



requires expansion and modernization of the grid. ISA has the potential not only to continue to be a profitable business for its majority shareholder, but also to become a growing business segment for Ecopetrol.

If the transaction is to accelerate its transformation into a clean energy company, Ecopetrol would need to ensure that there are some technological spillovers—including in terms of its own energy consumption and the operation of pipelines and other logistic infrastructure. But more fundamentally, Ecopetrol could use this opportunity to introduce new financing models that are more reliant on the use of capital markets to credibly commit to a reduction in emissions.

Ecopetrol's acquisition of ISA could provide lessons for other NOCs attempting to navigate the energy transition. Acquiring a company that aligns with net-zero goals and that already has a presence in the growing ESG bond market could suggest a path for some NOCs. However, for this type of deal to effectively reduce carbon emissions, there should be clear and tangible positive spillovers for the NOC in terms of technology, innovation, and discipline with climate targets. Ecopetrol's acquisition of a power transmission company like ISA has that potential and could result in a reduction in carbon emissions. If those benefits materialize, this transaction could provide a new alternative for other NOCs that are yet to make decisions on how to proceed.

Notes

1. Michael Boyd, "Exxon, Chevron, Shell: Death by ESG," *Seeking Alpha*, March 28, 2021, <https://seekingalpha.com/article/4431884-exxon-chevron-shell-death-by-esg>; Alastair Marsh and Saijel Kishan, "Engine N#1's Exxon Win Signals Turning Point for ESG Investors," *Bloomberg*, May 27, 2021, <https://www.bloomberg.com/news/articles/2021-05-27/engine-no-1-s-exxon-win-signals-turning-point-for-esg-investors>; Robin Mills, "Why International Oil Companies Are Facing Greater Scrutiny by Investors," *The National News*, May 30, 2021, <https://www.thenationalnews.com/business/comment/why-international-oil-companies-are-facing-greater-scrutiny-by-investors-1.1232315>.
2. Ecopetrol, "Ecopetrol Informa que Firmó el Contrato Mediante el Cual Adquiere 51.4% de la Participación Accionaria de ISA," press release, August 11, 2021, <https://www.ecopetrol.com.co/wps/portal/Home/es/NuestraEmpresa/salaPrensa/ecopetrol-isa>.
3. See Top Companies in Colombia by Market Cap as on 2020 (value.today).
4. For Ecopetrol's operational and financial data, see Ecopetrol, *Integrated Sustainable and Management Report 2020*, 2021, https://drive.google.com/u/0/uc?id=1SQraGPn_Np8kKhdPTnsAR-bl-hUswULK&export=download.
5. For data on Ecopetrol's share in Colombia's oil and gas production, see Agencia Nacional de Hidrocarburos, "Estadísticas de Producción," 2021, <https://www.anh.gov.co/estadisticas-del-sector/sistemas-integrados-operaciones/estad%C3%ADsticas-producci%C3%B3n>.
6. Ecopetrol, *Integrated Sustainable and Management Report 2020*.



7. For a list of Ecopetrol's assets, see Ecopetrol, *Ecopetrol's Net Zero Commitment*, April 12, 2021, https://www.ecopetrol.com.co/wps/wcm/connect/27c55628-b7f9-4996-ba35-5ca5e9e776e8/1.+PPT_IPECA_FB_vf.pdf?MOD=AJPERES&attachment=false&id=1618935477024.
8. Ecopetrol, "Ecopetrol Submits a Binding Offer to Acquire the Ministry of Finance and Public Credit's Controlling Stake in ISA," press release, August 2, 2021, <https://www.prnewswire.com/news-releases/ecopetrol-submits-a-binding-offer-to-acquire-the-ministry-of-finance-and-public-credits-controlling-stake-in-isa-301345960.html>.
9. Ecopetrol, "Ecopetrol Informs that the Ministry of Finance and Public Credit Accepted the Non-Binding Offer Submitted on January 27 to Acquire ISA Stock," press release, February 8, 2021, <https://www.prnewswire.com/news-releases/ecopetrol-informs-that-the-ministry-of-finance-and-public-credit-accepted-the-non-binding-offer-submitted-on-january-27-to-acquire-isa-stock-301223834.html>.
10. For ISA's corporate structure, see ISA, "Corporate Presentation 4A2020," 2021, https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/04/PPT-ISA-VF_ENG_4Q2020_web.pdf and ISA, *Integrated Management Report 2020*, March 4, 2021, https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/05/ISA-Reporte-Gestion-2020_INGLES.pdf.
11. For a full description of ISA's operations, see ISA, *Integrated Management Report 2020*.
12. ISA, "ISA Affiliate in Brazil Energizes its First Project of the Year," press release, March 5, 2021, <https://www.isa.co/en/press/isa-affiliate-in-brazil-energizes-its-first-project-of-the-year>.
13. Rating agency Fitch states in its credit risk assessment of ISA that the company's "low business risk profile stems from its participation in regulated natural monopolies with no demand risk." See Fitch Ratings, "Fitch Affirms Interconexión Eléctrica SA's IDR at BBB+; Outlook Negative," April 21, 2021, <https://www.fitchratings.com/research/corporate-finance/fitch-affirms-interconexion-electrica-sa-idr-at-bbb-outlook-negative-21-04-2021>.
14. For ISA's business presence in Brazil, see ISA's Brazilian subsidiary website <http://www.isacteep.com.br/en/isacteep/profile>.
15. For an account of the importance of the Colombia-Panama electricity interconnection, see Arturo Alarcón, "La Interconexión Colombia-Panamá, un Paso Más Hacia la Integración Regional," IADB, July 21, 2021, <https://blogs.iadb.org/energia/es/interconexion-colombia-panama-integracion-regional/>.
16. Ezra Fieser and Oscar Medina, "Ecopetrol CEO Defends \$4 Billion Deal That Unnerved Investors," *Bloomberg*, February 26, 2021, <https://www.bloomberg.com/news/articles/2021-02-26/ecopetrol-ceo-defends-4-billion-deal-that-unnerved-investors>.
17. Law 226 of 1995 mandates a very detailed and lengthy procedure for selling government-owned companies (which does not apply when the buyer is controlled by the public sector). See local press article listing the criticism of the transaction, "Sigue Encendido



el Debate por la Venta de ISA a Ecopetrol” *Semana*, February 21, 2021, <https://www.semana.com/economia/articulo/sigue-encendido-el-debate-por-la-venta-de-isa-a-ecopetrol/202100/>.

18. Ecopetrol, “Ecopetrol Informa que Firmó el Contrato.”
19. Andrea Jaramillo and Oscar Medina, “Colombia’s Dollar Bonds Drop After S&P Cuts Nation to Junk,” *Bloomberg*, May 19, 2021, <https://www.bloomberg.com/news/articles/2021-05-19/colombia-s-credit-rating-downgraded-to-junk-by-s-p>; Fitch Ratings, “Fitch Downgrades Colombia’s Ratings to ‘BB+’ from ‘BBB-’; Outlook Revised to Stable,” July 1, 2021, <https://www.fitchratings.com/research/sovereigns/fitch-downgrades-colombia-ratings-to-bb-from-bbb-outlook-revised-to-stable-01-07-2021>.
20. Ecopetrol, *Ecopetrol’s Net Zero Commitment*.
21. International Energy Agency, *Net Zero by 2050: A Roadmap for the Global Energy Sector* (Paris: International Energy Agency, May 2021), 82, https://iea.blob.core.windows.net/assets/beceb956-0dcf-4d73-89fe-1310e3046d68/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf.
22. Gavin Rennie, “Will Latin America Realize its Energy Future?” *EY*, May 22, 2019, https://www.ey.com/en_gl/power-utilities/shared-journey-different-choices-will-latin-america-realize-its-energy-future.
23. IEA, “Electricity Demand Growth in Latin America, 2021–2040” February 17, 2021, <https://www.iea.org/data-and-statistics/charts/electricity-demand-growth-in-latin-america-2021-2040>.
24. World Energy Council, “The Future of The Electric Grid in Latin America,” webinar, August 14, 2020, <https://www.worldenergy.org/experiences-events/past-events/entry/the-role-of-transmission-companies-in-the-futureelectric-grid-oflatin-america-and-the-caribbean>; World Energy Council and PWC, *Performing While Transforming: The Role of Transmission Companies in the Energy Transition* (London: World Energy Council, 2020), https://www.worldenergy.org/assets/downloads/Transmission_Brief_FINAL.pdf.
25. BP, *Statistical Review of World Energy* (London: BP, July 2021), <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2021-full-report.pdf>.
26. Michael Scott, “LatAm Political Risk Leaves Investors Wary,” *Financial Times*, March 28, 2021, <https://www.ft.com/content/a54d2a25-ad11-4ac9-9144-a67eae476f5>.
27. For a comprehensive analysis of the clean energy auctions that have taken place in Latin America in the 2015–2019 period, see Lisa Viscidi and Ariel Yepez, *Clean Energy Auctions in Latin America* (IADB, 2019), <https://www.thedialogue.org/analysis/clean-energy-auctions-in-latin-america/>.
28. According to ISA’s 2020 sustainability report, 80 percent of its operations are carbon



neutral with offsets totaling 36.781 tons of CO₂e from the emissions of the electric power transmission business. See ISA, “Special Report ESG: Environmental, Social and Governance 2020,” May 2021), 6, https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/05/InformeASG_ISA2020_Mayo18_INGLES.pdf.

29. See ISA’s 2020 results for a description of CapEx plans for the next five years: ISA, “Results Conference ISA Group: Fourth Quarter of 2020,” March 4, 2021, https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/03/ISA4Q20_Ppt_EN-60410df699b67.pdf.
30. See local press article listing the criticism around the transaction: “Sigue Encendido el Debate.”
31. For Ecopetrol’s operational and financial data, see Ecopetrol, *Integrated Sustainable and Management Report 2020*.
32. Matthew Smith, “Could Fracking Save Colombia’s Oil Industry?” *Oil Price*, June 21, 2021, <https://oilprice.com/Energy/Energy-General/Could-Fracking-Save-Colombias-Oil-Industry.html>.
33. See BP’s energy transition strategy at BP, *Reimagining Energy: Sustainability Report 2020* (London: BP, 2021), <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/sustainability/group-reports/bp-sustainability-report-2020.pdf>, and Shell’s net-zero strategy at Shell, “Our Climate Target,” February 2021, https://www.shell.com/energy-and-innovation/the-energy-future/our-climate-target/_jcr_content/par/relatedtopics.stream/1626776260893/b3b0516bd70fd3abe01f39d7b6f0f36014a3d68c/our-climate-target.pdf.
34. Aaron Larson, “Chevron Joins Growing List of Oil and Gas Companies Investing in Offshore Wind,” *Power*, April 22, 2021, <https://www.powermag.com/chevron-joins-growing-list-of-oil-and-gas-companies-investing-in-offshore-wind/>; “Utilising Expertise from Offshore Oil and Gas for Offshore Wind,” *The Explorer*, November 22, 2019, <https://www.theexplorer.no/stories/energy/utilising-expertise-from-offshore-oil-and-gas-for-offshore-wind/>.
35. For example, Equinor is expecting to achieve gross investments in renewables of around \$23 billion from 2021 to 2026, increasing the share of renewables to 50 percent of its CapEx by 2030 (<https://www.equinor.com/en/news/20210615-cmd-2021.html>).
36. “Electricity Supply and Demand,” Hub de Energía, <https://hubenergia.org/en/indicators/electricity-supply-and-demand>.
37. The IADB estimates an increase of 45 percent in investments in renewable energy capacity in 2019 in relation to 2018. Luis Carlos Perez, “A Global Net-Zero Emissions Future: Harnessing the Strengths of Latin America,” *Energía Para el Futuro Blog*, IADB, June 29, 2021, <https://blogs.iadb.org/energia/en/global-future-with-net-zero-emissions-strengths-of-latin-america/>.
38. Eduardo Cavallo, Andrew Powell, and Tomás Serebrisky, eds., *From Structures to Services: The Path to Better Infrastructure in Latin America and the Caribbean* (IADB, July 2020),



<https://flagships.iadb.org/en/DIA2020/from-structures-to-services>.

39. For a credit analysis of ISA, see Fitch's rating report: <https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/01/Fitch-Ratings-complete-report-2020.pdf>.
40. Ecopetrol, *Grupo Empresarial Ecopetrol Presenta sus Resultados para el Cuarto Trimestre y el Acumulado del Año 2015*, March 6, 2016, <https://nuevoportal.ecopetrol.com.co/documentos/inversionistas/Reporte-Resultados-4Q-2015.pdf>; Ecopetrol, *Grupo Empresarial Ecopetrol Presenta sus Resultados para el Cuarto Trimestre y el Acumulado del Año 2016*, March 6, 2017, <https://nuevoportal.ecopetrol.com.co/documentos/inversionistas/Reporte%20Resultados%204Q%2016-%2005%2003%202017%20-%20FINAL.pdf>; Ecopetrol, *Grupo Empresarial Ecopetrol Presenta sus Resultados para el Cuarto Trimestre y el Acumulado del Año 2017*, February 27, 2018, <https://nuevoportal.ecopetrol.com.co/documentos/inversionistas/Reporte%204Q%202017%20-%2026%2002%202018%20-%20FINAL.pdf>; Ecopetrol, *Resultados 2018: Continuamos por la Senda del Crecimiento Rentable*, February 26, 2019, <https://www.ecopetrol.com.co/wps/wcm/connect/3624b154-f323-4db2-8469-f0d57e056f9e/Reporte-4T18.pdf?MOD=AJPERES>; Ecopetrol, *Resultados 2019: Avanzamos por la Senda del Crecimiento Rentable y Sostenible*, February 25, 2020, <https://www.ecopetrol.com.co/wps/wcm/connect/05960c22-4b99-41ff-a109-3b087568f611/Reporte%204T19%20VF%20ESPA%C3%91OL.pdf?MOD=AJPERES&attachment=false&id=1584473390120>; Ecopetrol, *Resultados 2020: Solidez y Competitividad en un Entorno Sin Precedentes*, February 23, 2021, <https://www.ecopetrol.com.co/wps/wcm/connect/363573c6-6783-44b9-b0b8-274f19d1296f/Reporte+4T20+FINAL+4+PM.PDF?MOD=AJPERES&attachment=false&id=1614117349394>; ISA, *Resultados Financieros: Cuarto Trimestre de 2015*, March 1, 2016, <https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/01/Informe-de-resultados-financieros-cuarto-trimestre-de-2015.pdf>; ISA, *Resultados Financieros 2016*, February 27, 2017, <https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/01/Informe-de-resultados-financieros-cuarto-trimestre-de-2016.pdf>; ISA, *Resultados Financieros: Cuarto Trimestre de 2017*, February 26, 2018, <https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/01/Informe-de-resultados-financieros-cuarto-trimestre-de-2017.pdf>; ISA, *Resultados Financieros: Cuarto Trimestre de 2018*, March 7, 2019, <https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/01/Informe-de-resultados-financieros-cuarto-trimestre-de-2018.pdf>; ISA, *Resultados Financieros: Cuarto Trimestre de 2019*, March 4, 2020, <https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/01/Informe-de-resultados-financieros-cuarto-trimestre-de-2019.pdf>; ISA, *Resultados Financieros: Cuarto Trimestre de 2020*, March 3, 2020, https://isasapaginaswebisa001.blob.core.windows.net/paginawebisawordpress/2021/03/ISA-InformeResultados-4Q20_ES_v2.pdf; Bloomberg LP, "COP Curncy Graph Average" for 2015–2020, accessed July 2021.
41. Bloomberg LP, "Total_Production_world_MBOE_DY" for Ecopetrol, YPF, Aramco, Rosneft, Equinor, Petrochina, ConocoPhillips, PTTEP, Hess, Eni, British Petroleum, Chevron, EXXON, Shell, Total, and PETROBRAS, accessed July 2021; Bloomberg LP, "Earn_For_Common,"



- for Ecopetrol, YPF, Aramco, Rosneft, Equinor, Petrochina, ConocoPhillips, PTTEP, Hess, Eni, British Petroleum, Chevron, EXXON, Shell, Total, and PETROBRAS, accessed July 2021; Bloomberg LP, “Currency Graph Average 2020” for Colombian pesos, Brazilian reals, Argentine pesos, Chinese yuan, euros, Saudi riyals, Russian rubles, and Thai baht, accessed July 2021; Pemex, “Estado de Resultados Consolidado,” 2020, https://www.pemex.com/ri/finanzas/Resultados%20anuales/Anexos%204T20_D.xls.
42. Ecopetrol, “Fitch Ratings Downgrades Ecopetrol S.A. Following the Same Rating Action on Colombia’s Sovereign Rating,” July 7, 2021, <https://www.prnewswire.com/news-releases/fitch-ratings-downgrades-ecopetrol-sa-following-the-same-rating-action-on-colombias-sovereign-rating-301326791.html>; Fitch Ratings, “Fitch Takes Various Actions on Colombian Corporates Following Sovereign Downgrade,” July 6, 2021, <https://www.fitchratings.com/research/infrastructure-project-finance/fitch-takes-various-actions-on-colombian-corporates-following-sovereign-downgrade-06-07-2021>.
 43. For a description of how ISA’s business model is built around ESG principles, see ISA, “Special Report ESG.”
 44. Patturaja Murugaboopathy and Simon Jessop, “Global Sustainable Fund Assets Hit Record \$2.3 tln in Q2, Says Morningstar” *Reuters*, July 27, 2021, <https://www.reuters.com/business/sustainable-business/global-sustainable-fund-assets-hit-record-23-tln-q2-says-morningstar-2021-07-27/>.
 45. “ISA’s Green Bonds Issued Successfully: The First Issuance for a Company of the Real Sector in the Stock Market,” *Market Screener*, August 18, 2020, <https://www.marketscreener.com/quote/stock/INTERCONEXI-N-ELECTRICA-S-9059184/news/ISA-s-green-bonds-issued-successfully-the-first-issuance-for-a-company-of-the-real-sector-in-the-st-31138966/>. For a description of ISA’s green bonds, see “Green Bond Fact Sheet,” *Climate Bonds Initiative*, March 9, 2020, https://www.climatebonds.net/files/files/2020-08_CO_Interconexion_Electrica.pdf.
 46. “Ecopetrol SA Gets Preliminary Colombian Government Authorization for \$1.4 Billion in Bond Sales,” *Market Screener*, June 30, 2021, <https://www.marketscreener.com/quote/stock/ECOPETROL-S-A-9059900/news/Ecopetrol-S-A-Gets-Preliminary-Colombian-Government-Authorization-for-1-4-Billion-in-Bond-Sales-35756921/>.
 47. Peter Cripps, “Are Oil and Gas Firms Still Locked Out of the Sustainable Bond Market?” *Environmental Finance*, June 2021, <https://www.environmental-finance.com/content/analysis/green-bond-comment-june-2021-are-oil-and-gas-firms-still-locked-out-of-the-sustainable-bond-market.html>.
 48. For a full description of Ecopetrol’s plan, see Ecopetrol, “Ecopetrol Group Announces Its Commitment and Plan to Achieve Net Zero Carbon Emissions by 2050,” March 25, 2021, https://www.ecopetrol.com.co/wps/portal/Home/en/?1dmy&page=detailNews&uril=wcm:path:/ecopetrol_wcm_library/as_en/news/noticias-2021/emissions-reduction. Ecopetrol had already signed on to the World Bank’s zero routine gas flaring initiative in early 2020 (“Colombia’s Ecopetrol Commits to Stop



Routine Gas Flaring at Operations,” *Reuters*, January 30, 2020, <https://www.reuters.com/article/us-ecopetrol-colombia/colombias-ecopetrol-commits-to-stop-routine-gas-flaring-at-operations-idUSKBN1ZT2PP>).

49. Climate Bonds Initiative, “Financing Credible Transitions: How to Ensure the Transition Label Has Impact,” white paper, September 2020, https://www.climatebonds.net/files/reports/cbi_fincredtransitions_final.pdf.
50. Karin Strohecker and Simon Jessop, “Emissions-Linked Suzano Bond Seen Spurring More EM Firms to Market,” *Reuters*, September 11, 2020, <https://www.reuters.com/article/us-suzano-bond/emissions-linked-suzano-bond-seen-spurring-more-em-firms-to-market-idUSKBN2622ML>.
51. Fitch Ratings, “Fitch Affirms Interconexión Eléctrica SA’s IDR at ‘BBB+’.”
52. For a brief description of mergers versus acquisition strategies, see Matt Gavin, “What are Mergers and Acquisitions? 4 Key Risks,” Harvard Business School Blog, July 25, 2019, <https://online.hbs.edu/blog/post/mergers-and-acquisitions>.

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