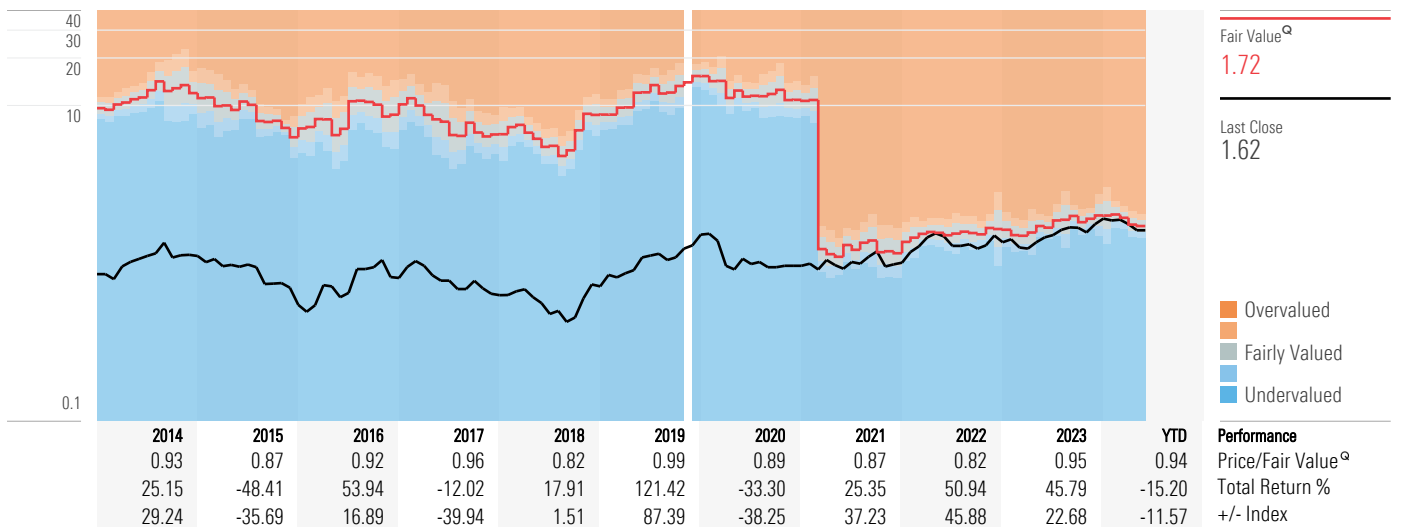


Cia Paranaense De Energia Copel Class B X COP ★★★ 16 May 2024, 22:35 UTC

Economic Moat ^Q	Uncertainty ^Q	Price/Fair Value ^Q	ESG Risk Rating Assessment ¹	Trailing Dividend Yield %	Market Cap	Investment Style	Sector	Industry
None	High	0.9	1 May 2024 05:00, UTC	4.38	4.9687 Bil	Large Core	Utilities	Utilities - Diversified



As of 16 May 2024 | Index: Morningstar Brazil GR BRL. Fair Value data as of 16 May 2024, 22:35 UTC.

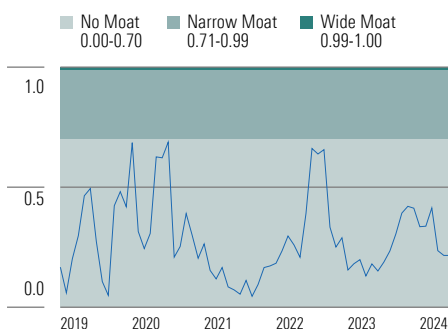
¹The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating. Lee Davidson, Chief Analytics Officer for Morningstar, Inc, oversees the methodology that supports Quantitative Fair Value Estimates and Quantitative Star Ratings. Mr. Davidson is guided by the Morningstar, Inc. Code of Ethics in carrying out his responsibilities. For information regarding Conflicts of Interests, visit <http://global.morningstar.com/equitydisclosures>.

Key Metrics as of 10 May 2024

Metrics	Value	Percentile in Sector
Earnings Yield (%)	8.1	74.0
Sales Yield (%)	82.1	65.0
Book Value Yield (%)	86.7	66.0
Return on Assets (%)*	4.3	73.0
Revenue(Bil)*	4.2	70.0
Market Value (Bil)	5.1	69.0
Enterprise Value (Bil)	7.0	63.0
EVMV Ratio	1.4	40.0
Volatility TTM (%)	17.2	24.0
Drawdown TTM (%)	13.1	17.0
Volume (Mil)	16.8	94.0

*31 Dec 2023

Economic Moat ^Q History as of 16 May 2024



Business Description

Cia Paranaense De Energia Copel is engaged in the areas of generation, transmission, commercialization and distribution of energy. It operates a comprehensive and effective electrical system with its own generating plants, transmission lines, substations, electrical lines and grids of the distribution system. The company's reportable segments include Power generation and transmission, Power distribution, GAS, Power sale, Holding and Services. Majority of its revenue is generated from the Power generation and transmission segment under which it produces electricity from hydraulic, wind, and thermal projects and provides services of transmission and transformation of electric power and other related services.

Valuation ^Q as of 16 May 2024

Morningstar affirms a 3-star quantitative rating for Cia Paranaense De Energia. We calculate this outcome using the company's underlying model-driven valuation and uncertainty scores.

The stock's last closing price was 1.62, a discount of 7.27% to its Quantitative Fair Value estimate of 1.75. This discount has ranged between 18.38% and 2.12% over the past year. The stock's price to fair value ratio is at the 79th percentile in our global equity coverage universe for this methodology and at the 71st percentile relative to its peers in the utilities sector.

Cia Paranaense De Energia furthermore holds a High quantitative uncertainty rating.

The company's quantitative star rating dates to after 11/24/2023, before which it was 4-star. Similarly, the firm's uncertainty rating changed from Very High to High after 05/10/2024.

We examine the financials and market statistics for Cia Paranaense De Energia to determine these ratings. Its earnings yield is 7.98% and its annualized

trailing 12-month volatility is 17.39%. These fall at the 80th and 14th percentiles in the equity universe and at the 74th and 25th in the utilities sector, respectively.

Economic Moat ^Q as of 16 May 2024

Morningstar maintains a quantitative moat rating of None on the company. The firm's quantitative moat score of 0.16 sits at the 12th percentile in the utilities sector. This is a decrease from 0.59, the maximum of its moat scores over the past year.

The quantitative financial health rating for Cia Paranaense De Energia is Moderate. Its financial health score, termed Distance to Default, sits at the 62nd percentile in the universe and 78th percentile in the sector.


The significant drivers of these ratings are the company's book value yield and enterprise value-to-market value ratio. The book value yield for Cia Paranaense De Energia is 85.01%, and its enterprise value-to-market value ratio is 1.36. They sit at the 65th and 73rd percentile in the global equity universe, respectively.

Fundamentals as of 16 May 2024

Cia Paranaense De Energia maintains earnings per share of 0.79. The company further earns a return on invested capital of 6.22%. The shares offer a dividend yield of 4.38%. These values are calculated over a trailing 12-month period.

As of last market close, Cia Paranaense De Energia has a price-to-earnings ratio of 11.99, falling below the 34th percentile in its sector (where a lower percentile means a lower ratio) and ranging between 11.82 and 23.69 over the past year. The company's price-to-free cash flow ratio is 7.73, falling at the 36th percentile in its sector and ranging between 7.08 and 13.25 over the past year.

Cia Paranaense De Energia Copel Class B XCOB ★★★ 16 May 2024, 22:35 UTC

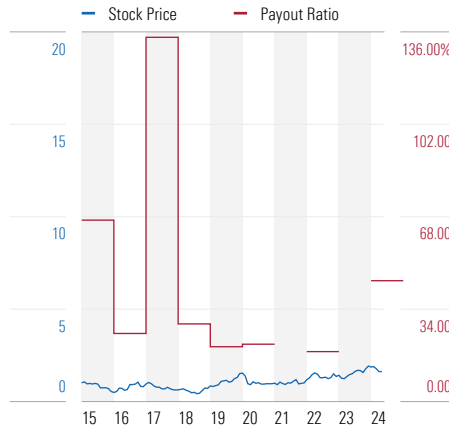
Economic Moat ◊	Uncertainty ◊	Price/Fair Value ◊	ESG Risk Rating Assessment †	Trailing Dividend Yield %	Market Cap	Investment Style	Sector	Industry
None	High	0.9	 1 May 2024 05:00, UTC	4.38	4.9687 Bil	Large Core	Utilities	Utilities - Diversified

Earnings as of 10 May 2024

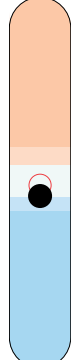
Earnings	%	Percentile in Sector
Dividend Yield*	4.4	55.0
Payout Ratio*	44.5	37.0
Price to Earnings	11.8	35.0
Price to Cash Flow	7.6	38.0
ROIC**	6.2	62.0

*30 Apr 2024
**31 Dec 2023

Dividends as of 16 May 2024



Valuation ◊ as of 16 May 2024



Fair Value ◊
1.72

Uncertainty ◊ :
High

Last Close
1.62

XCOB is Undervalued
at a 6% discount.

Economic Moat ◊
None

Financial Health ◊
Moderate

1-Star Price ◊
> 2.05

5-Star Price ◊
< 1.45

Contact

Rua Jose Izidoro Biazetto, 158, Curitiba, PR 81200-240
+55 4133314011
<https://www.copel.com>

Financials as of 16 May 2024 (Fiscal Year End 31 Dec 2024)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	Fiscal
	14	15	13	14	15	16	19	-13	-13	21	21	Revenue (Bil)
	1,616	1,991	1,782	1,994	2,157	3,129	4,892	2,914	1,280	3,186	3,186	Operating Income (Mil)
	11.54	13.32	13.6	14.22	14.82	19.72	26.25	—	—	14.83	14.83	Operating Margin (%)
	1,206	1,110	896	1,034	1,407	1,990	3,904	4,953	1,112	2,259	2,259	Net Income (Mil)
	0.42	0.39	0.31	0.36	0.49	0.69	1.36	1.61	0.39	0.79	0.79	Diluted Earnings/Share
	1,091	1,321	1,477	989	1,771	2,945	3,941	3,387	3,903	3,518	3,518	Operating Cash Flow (Mil)
	-2,149	-1,721	-2,213	-2,012	-1,216	-373	-237	-343	-390	-218	-218	Capital Spending (Mil)
	-1,058	-401	-736	-1,023	555	2,572	3,704	3,044	3,512	3,300	3,300	Free Cash Flow (Mil)
	2,737	2,737	2,737	2,737	2,737	2,737	2,737	2,737	2,737	2,831	2,831	Avg Shares Outstand(Mil)

Valuation as of 16 May 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Current	Calendar
	0.93	0.87	0.92	0.96	0.82	0.99	0.89	0.87	0.82	0.95	0.94	Price/Fair Value ◊
	0.92	0.41	0.58	0.54	0.57	1.21	0.96	0.78	0.92	1.36	1.18	Price/Sales
	8.32	6.60	5.55	17.25	8.17	9.52	5.28	4.20	13.14	14.14	11.95	Price/Earnings
	12.01	8.75	4.31	4.76	6.17	8.32	4.08	4.98	5.73	9.82	7.23	Price/Cash Flow
	0.76	0.47	0.50	0.45	0.53	1.07	0.84	0.83	1.00	1.32	1.12	Price/Book

Operating Performance as of 16 May 2024 (Fiscal Year End 31 Dec 2024)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Q3	Fiscal (%)
	4.95	4.37	3.23	3.25	4.07	5.36	9.18	10.28	2.24	4.28	1.32	Return on Assets
	9.28	8.65	6.59	6.87	9.01	11.96	20.98	23.7	5.21	10.11	3.13	Return on Equity
	6.15	5.14	3.78	4.06	4.89	6.61	12.41	14.93	3.37	6.22	1.94	Rtn on Invested Capital

Dividends as of 16 May 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Current	Calendar (%)
	0.24	0.09	0.13	0.30	0.12	0.28	0.31	1.31	0.89	0.33	0.07	Dividend Per Share
	—	4.82	4.17	4.1	3.45	3.55	5.28	—	4.86	—	4.38	Trailing Dividend Yield
	—	—	—	—	—	—	—	—	—	—	—	Buyback Yield

Appendix

Economic Moat [®]History as of 16 May 2024 (No Moat: 0.00-0.70, Narrow Moat: 0.70-0.99, Wide Moat: 0.99-1.00)

Year	January	February	March	April	May	June	July	August	September	October	November	December
2024	0.34	0.34	0.41	0.24	0.22	—	—	—	—	—	—	—
2023	0.16	0.18	0.20	0.13	0.18	0.15	0.19	0.23	0.31	0.39	0.42	0.41
2022	0.18	0.23	0.30	0.26	0.21	0.39	0.66	0.64	0.66	0.33	0.25	0.29
2021	0.26	0.15	0.12	0.17	0.08	0.07	0.05	0.11	0.05	0.09	0.17	0.17
2020	0.69	0.32	0.24	0.31	0.63	0.62	0.69	0.21	0.25	0.39	0.30	0.20
2019	0.17	0.06	0.20	0.30	0.46	0.49	0.27	0.11	0.05	0.42	0.48	0.42

Quantitative Equity Report Overview

The quantitative report on equities consists of data, statistics and quantitative equity ratings on equity securities. Morningstar, Inc.'s quantitative equity ratings are forward looking and are generated by a statistical model that is based on Morningstar Inc.'s analyst-driven equity ratings and quantitative statistics. Given the nature of the quantitative report and the quantitative ratings, there is no one analyst in which a given report is attributed to; however, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative equity ratings used in this report. As an employee of Morningstar, Inc., Mr. Davidson is guided by Morningstar, Inc.'s Code of Ethics and Personal Securities Trading Policy in carrying out his responsibilities.

Quantitative Equity Ratings

Morningstar's quantitative equity ratings consist of: (i) Quantitative Fair Value Estimate, (ii) Quantitative Star Rating, (iii) Quantitative Uncertainty, (iv) Quantitative Economic Moat, and (v) Quantitative Financial Health (collectively the "Quantitative Ratings").

The Quantitative Ratings are calculated daily and derived from the analyst-driven ratings of a company's peers as determined by statistical algorithms. Morningstar, Inc. ("Morningstar", "we", "our") calculates Quantitative Ratings for companies whether or not it already provides analyst ratings and qualitative coverage. In some cases, the Quantitative Ratings may differ from the analyst ratings because a company's analyst-driven ratings can significantly differ from other companies in its peer group.

i. **Quantitative Fair Value Estimate:** Intended to represent Morningstar's estimate of the per share dollar amount that a company's equity is worth today. Morningstar calculates the Quantitative Fair Value Estimate using a statistical model derived from the Fair Value Estimate Morningstar's equity analysts assign to companies. Please go to <http://global.morningstar.com/equitydisclosures> for information about Fair Value Estimate Morningstar's equity analysts assign to companies.

ii. **Quantitative Economic Moat:** Intended to describe the strength of a firm's competitive position. It is calculated using an algorithm designed to predict the Economic Moat rating a Morningstar analyst would assign to the stock. The rating is expressed as Narrow, Wide, or None.

Narrow – assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 70% but less than 99%.

Wide – assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 99%.

None – assigned when the probability of an analyst receiving a "Wide Moat" rating by an analyst is less than 70%.

iii. **Quantitative Star Rating:** Intended to be the summary rating based on the combination of our Quantitative Fair Value Estimate, current market price, Quantitative Uncertainty Rating, and momentum. The rating is expressed as One-Star, Two-Star, Three-Star, Four-Star, and Five-Star.

★ – the stock is overvalued with a reasonable margin of safety.

*Log (Quant FVE/Price) < -1*Quantitative Uncertainty*

*Micro-Caps: Log (Quant FVE/Price) < -1.5*Quantitative Uncertainty*

★★ – the stock is somewhat overvalued.

*Log (Quant FVE/Price) between (-1*Quantitative Uncertainty, -0.5*Quantitative Uncertainty)*

*Micro-Caps: Log (Quant FVE/Price) between (-1.5*Quantitative Uncertainty, -0.75*Quantitative Uncertainty)*

★★★ – the stock is approximately fairly valued.

*Log (Quant FVE/Price) between (-0.5*Quantitative Uncertainty, 0.5*Quantitative Uncertainty)*

*Micro-Caps: Log (Quant FVE/Price) between (-0.75*Quantitative Uncertainty, 0.75*Quantitative Uncertainty)*

★★★★ – the stock is somewhat undervalued.

*Log (Quant FVE/Price) between (0.5*Quantitative Uncertainty, 1*Quantitative*

Uncertainty)

*Micro-Caps: Log (Quant FVE/Price) between (0.75*Quantitative Uncertainty, 1.5*Quantitative Uncertainty)*

★★★★★ – the stock is undervalued with a reasonable margin of safety.

*Log (Quant FVE/Price) > 1*Quantitative Uncertainty*

*Micro-Caps: Log (Quant FVE/Price) > 1.5*Quantitative Uncertainty*

After the initial calculation for the star rating, there is a final filtering step based on the momentum of the company. We rank the companies based on their 12-1 month momentum, then restrict those below the 30th percentile to a maximum of 3 stars.

iv. **Quantitative Uncertainty:** Intended to represent Morningstar's level of uncertainty about the accuracy of the Quantitative Fair Value Estimate. Generally, the lower the Quantitative Uncertainty, the narrower the potential range of outcomes for that particular company. The rating is expressed as Low, Medium, High, Very High, and Extreme.

Low – the interquartile range for possible fair values is less than 10%

Medium – the interquartile range for possible fair values is less than 15% but greater than 10%

High – the interquartile range for possible fair values is less than 35% but greater than 15%

Very High – the interquartile range for possible fair values is less than 80% but greater than 35%

Extreme – the interquartile range for possible fair values is greater than 80%

v. **Quantitative Financial Health:** Intended to reflect the probability that a firm will face financial distress in the near future. The calculation uses a predictive model designed to anticipate when a company may default on its financial obligations. The rating is expressed as Weak, Moderate, and Strong.

Weak – assigned when Quantitative Financial Health < 0.2

Moderate – assigned when Quantitative Financial Health is between 0.2 and 0.7

Strong – assigned when Quantitative Financial Health > 0.7

Other Definitions

i. **Last Close** – Price of the stock as of the close of the market of the last trading day before date of the report.

ii. **Quantitative Valuation** – Using the below terms, intended to denote the relationship between the security's **Last Price** and Morningstar's quantitative fair value estimate for that security.

Undervalued – Last Price is below Morningstar's quantitative fair value estimate.

Fairly Valued – Last Price is in line with Morningstar's quantitative fair value estimate.

Fairly Valued – Last Price is in line with Morningstar's quantitative fair value estimate.

Overvalued – Last Price is above Morningstar's quantitative fair value estimate.

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Sustainalytics analyzes over 1,300 data points to assess a company's exposure to and management of ESG risks. In other words, ESG Risk Ratings measures a company's unmanaged ESG Risks represented as a quantitative score. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) with lower scores representing less unmanaged risk and, for 95% of cases, the unmanaged ESG Risk score is below 50.

Based on their quantitative scores, companies are grouped into one of five Risk Categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree

of unmanaged ESG risk across all subindustries covered.

The ESG Risk Rating Assessment is a visual representation of Sustainalytics ESG Risk Categories on a 1 to 5 scale. Companies with Negligible Risk = 5 Globes, Low Risk = 4, Medium Risk = 3 Globes, High Risk = 2 Globes, Severe Risk = 1 Globe. For more information, please visit sustainalytics.com/esg-ratings/

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