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June 12, 2020

Secretary Tanowa Troupe
Public Utilities Commission of Ohio
180 East Broad Street
Columbus, OH 43125

Re: **TriEagle Energy LP – PUCO Docket No. 14-0482-EL-CRS - Notice of Amendment to TriEagle Energy LP's Renewal Application for Retail Generation Providers and Power Marketers Filed May 6, 2020**

Dear Secretary Troupe,

Our client, TriEagle Energy LP, hereby notifies the Public Utilities Commission of Ohio of an amendment to the *Renewal Application for Retail Generation Providers and Power Marketers* filed on May 6, 2020 by TriEagle Energy LP in the above-referenced PUCO matter.

Specifically, with this notice TriEagle Energy LP is submitting the attached amended Exhibits C-4, C-5 and C-6 for its CRES renewal application. Please note that amended Exhibit C-5 is being submitted under seal with the Commission.

Thank you for your assistance, and please do not hesitate to contact me with any questions or concerns.

Sincerely,

/s/ David F. Proaño

David F. Proaño
Partner

FINANCIAL ARRANGEMENTS

TriEagle Energy LP's parent company, Vistra Operations Company LLC, has credit facilities that provide TriEagle Energy LP access to cash and letters of credit that are sufficient to satisfy TriEagle Energy LP's financial and collateral posting obligations as a CRES provider in Ohio. As of December 31, 2019, these credit facilities have approximately $1.426 billion in available liquidity. Additional information on Vistra Operations Company LLC's credit facilities can be found in Vistra Energy Corp.'s most recent Form 10-K for 2019 filed with the Securities and Exchange Commission:

https://www.sec.gov/ix?doc=/Archives/edgar/data/1692819/000169281920000005/vistra-20191231.htm. Links in the Form 10-K to the credit facilities are located starting at page 180 of the Form 10-K.

Vistra Operations Company LLC has provided a parent guaranty for TriEagle Energy LP (see Am. Ex. C-6). In addition, PJM through the below email has confirmed that TriEagle Energy LP has satisfied minimum credit and collateral requirements necessary to participate in PJM Markets.

From: Picarelli, David M. <David.Picarelli@pjm.com>
Sent: Friday, May 8, 2020 2:04 PM
To: Lynch, Vicki <Vicki.Lynch@vistraenergy.com>
Cc: Credit <credit_hotline@pjm.com>
Subject: Confirmation of Member Status, Dynergy Cos

EXTERNAL EMAIL

Confirmation of Member Status

To Whom It May Concern:

This is to confirm that the following Dynegy Marketing and Trade, LLC companies are PJM Member as of May 8, 2020. They are current on their billing and settlement obligations, and have satisfied minimum credit and collateral requirements necessary to participate in PJM Markets.

Ambit Northeast, LLC
Cincinnati Bell Energy, LLC
Dynegy Energy Services, LLC
Dynegy Marketing and Trade, LLC
Dynegy Power Marketing, LLC
Energy Services Providers, Inc.
Everyday Energy, LLC
Illinois Power Marketing Company
Trieagle Energy, L.P.
Viridian Energy PA, LLC

Regards

David Picarelli
Trade Risk and Analytics
& Credit and Surveillance
610-666-4221
David.Picarelli@pjm.com
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AMENDED EXHIBIT C-5

TriEagle Energy LP CRES Renewal Application - Case Number 14-0482-EL-CRS

“Forecasted Financial Statements,” provide two years of forecasted financial statements (balance sheet, income statement, and cash Dow statement) for the applicant's GRES operation, along with a list of assumptions, and the name, address, email address, and telephone number of the preparer. Applicant's forecasted financial information contains confidential and proprietary information and is being submitted under seal.

Proprietary and Confidential Information Filed under Seal

AMENDED EXHIBIT C-6
TriEagle Energy LP CRES Renewal Application
Case Number 14-0482-EL-CRS

Exhibit C-6

"Credit Rating," *provide a statement disclosing the applicant's credit rating as reported by two of the following organizations: Duff & Phelps, Dun and Bradstreet Information Services, Fitch IBCA, Moody's Investors Service, Standard & Poors, or a similar organization. In instances where an applicant does not have its own credit ratings, it may substitute the credit ratings of a parent or affiliate organization, provided the applicant submits a statement signed by a principal officer of the applicant's parent or affiliate organization that guarantees the obligations of the applicant.*

"Credit Rating" --- TriEagle Energy LP is not currently rated by the external rating agencies. Vistra Operations Company LLC is rated by S&P: Issuer Credit Rating "BB" senior unsecured (page 8 table) and by Moody's: Corporate Family Rating "Ba2" senior unsecured (page 16 table).

Please refer to the following pages of Exhibit C-6 for Vistra Operations Company LLC's credit rating and parent guaranty.

VISTRA ENERGY

Gabe Vazquez
VP & Associate General Counsel
Vistra Energy
6555 Sierra Drive
Irving, TX 75039

June 9, 2020

FILED ON PUCO DOCKET NO. 14-0482-EL-CRS

Secretary Tanowa Troupe
Public Utilities Commission of Ohio
180 East Broad Street
Columbus, Ohio 43215-3793

Re: TriEagle Energy LP – Guarantee by Vistra Operations Company LLC (PUCO Docket No. 14-0482-EL-CRS)

Dear Secretary Troupe:

This parent guaranty by Vistra Operations Company LLC is submitted in support of the CRES renewal application filed by TriEagle Energy LP in the above-referenced PUCO matter. In particular, this parent guaranty is provided in support of Exhibit C-6 of the CRES renewal application whereby TriEagle Energy LP has submitted the credit rating of Vistra Operations Company LLC.

Vistra Operations Company LLC, as a parent company of TriEagle Energy LP, hereby guarantees the obligations that TriEagle Energy LP incurs in the operation of its business as a Competitive Retail Electric Service provider in Ohio, to the extent necessary.

Gabe Vazquez
By: Gabe Vazquez (Jun 9, 2020 17:05 CDT)
Gabe Vazquez
VP & Associate General Counsel
Vistra Operations Company LLC

S&P Global
Ratings

RatingsDirect®

Research Update:

Vistra Energy Corp. Outlook Revised To Positive On Cost Savings And Stable Retail Business; Ratings Affirmed

September 4, 2019

PRIMARY CREDIT ANALYST

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Rating Action Overview

- Vistra Energy Corp. has improved its credit metrics.
- We revised our outlook on Vistra Energy Corp. to positive from stable. We also affirmed our 'BB' issuer credit rating on Vistra and all issue-level ratings on wholly owned subsidiary Vistra Energy Operations Co.
- The positive outlook reflects improvement in Vistra's credit measures, as reflected in its net debt-to-EBITDA ratio of about 3.4x, strong free cash flow generation, and high cash flow conversion (EBITDA to free operating cash flow). If the company continues to execute its integration strategy, we expect to raise the rating by a notch over the next six months.

Rating Action Rationale

Our current business and financial risk assessments for Vistra Energy Inc. are fair and significant, respectively. Compared to the financial measures that the company projects, our financial ratios--as reflected in adjusted debt to EBITDA--are about 0.40x weaker because of debt-like imputations (we impute debt for asset retirement obligations [AROs], capitalized operating leases, and unfunded pensions and other postemployment benefits), as well as lower cash flow expectations, which are based on our assumptions of forward power curves. Relative to the company's expected measures of about 3.0x-3.1x in 2019, our leverage ratios are about 3.4x. Similarly, our adjusted funds from operations (FFO)-to-debt ratio expectations are about 2.5%-3.0% lower. However, the company has shown a willingness and ability to reduce leverage, resulting in the positive outlook.

We have also been explicit that if the company continues to execute its integration plan and leverage ratios trend downwards toward 3.0x, we would likely upgrade it to 'BB+' over the next six months. Vistra's free operating cash flow to debt (i.e. cash flow generation after capital spending) ratios are in our intermediate financial risk range and stronger than some 'BB' rated peers.

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Yet, adverse power market conditions for Vistra (and the overall independent power producers sector) that began in 2016 haven't improved. In the Pennsylvania-Jersey-Maryland (PJM) market, the demand forecast continues to be revised lower, while the market remains very well supplied as new combined cycle gas turbines (CCGTs) come online to offset retired facilities. Similarly, capacity auction parameters point to lower pricing in the 2022 auction. Moreover, both capacity and energy price reforms are stalled at the Federal Energy Regulatory Commission and PJM stakeholder process. In response, PJM and other regional transmission organizations or independent system operators are increasingly intervening to prop up nuclear plants, with government intervention undercutting confidence in markets.

We are also seeing lower forward power prices in virtually all other independent power markets. At a high level, we think these declines reflect some combination of lower natural gas prices and a mild start to summer 2019 that weighed on prompt prices, which then cascaded out onto the forward curve. In addition, prices fell because fewer generating assets than the markets expected were retired. All of this has led to forward power price curves in backwardation, exacerbated by a lack of liquidity in the outer years.

Vistra's integrated wholesale generation and retail power model has built up some credibility over the past two years because retailing power appears to be providing a hedge for wholesale power operations when they are regionally matched, reducing the financial impact of lower forward power curves. Volatility has been lower (15% trough to crest) and the company has had stronger cash flow conversion rates than refineries. However, it is difficult to believe that a capital-lite model providing a consumer nondiscretionary service, such as electricity, will go uncontested. We still think that Vistra has not been tested enough, either in the competitive landscape where the fight for market share could intensify, or in the form of extreme (or very mild) weather where the efficiency and efficacy of the integration is tested. For instance, in a recession we expect both wholesale power prices and retail power margins to decline, especially if weather doesn't cooperate. Over the next months, favorable credit momentum would be contingent on consistent execution. This includes our continuing assessment of the sector, particularly our view of the success or failure of Vistra's retail power segment and the predictability of its cash flows.

What jumps out for Vistra is that almost 55%-60% of its gross margins are exposed to energy margins, compared to only about 35% for peer NRG Energy. In a market environment that is experiencing the continual onslaught of distributed generation and proliferating renewables, we think this is exposure may need to be mitigated with offsetting hedges.

With the acquisition of Ambit (a retail power company) and the announced closure of coal-fired assets in Illinois, Vistra is still net short retail in the Electric Reliability Council of Texas (ERCOT) and PJM regions, but still benefits if we assume retail countercyclicality on the portion of its wholesale fleet in each market that is matched with retail. Before the Ambit acquisition, the company had a load-to-generation match of 53% in ERCOT, which has since improved to about 64%. We think that to mitigate this risk, the company will either need to grow its retail business or reduce its merchant exposure in ERCOT. While we expect growth in ERCOT retail, given that Vistra produces over a third of its ERCOT generation from coal-fired assets (33 terawatt hours [TWh]), incremental plant closures (over the 4.2 gigawatts [GW] already announced) are possible.

Despite the fact that Vistra has about 14% of its generation capacity in Midcontinent Independent System Operator (MISO), it produced only about 7% of its wholesale gross margins (3.5% of wholesale EBITDA) there. Before the recent announcement of coal-fired plant closures, the company had a relatively low 48% load-to-generation match in PJM/MISO, which has since improved to 55%. To balance the wholesale–retail integration and improve its business risk profile, we thought the company would need to retire some Midwest units. Even after the recent retirement announcements related to Illinois multipollutant rules to reduce coal-fired generation

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by 10 TWh, almost 20 TWh of generation in MISO is still from coal-fired units. We think the company will have to close more of its power plants rather than build its retail business to mitigate exposure to wholesale generation. As a result, while Vistra's overall competitive advantage has improved, the price-taking nature of its portfolio (which is exposed to the vicissitudes of commodity prices) limits its competitive advantage to our adequate/weak assessment.

Scale and scope improved substantially after the merger with Dynegy. Now the largest IPP in the U.S., Vistra has nearly 41 GW of installed capacity, 190 TWh of generation capability, and 97 TWh of retail load across 3.4 million residential and 500,000 commercial and industrial customers. The combination increases scale and diversity by region and fuel type, and also offers the company a capacity revenue stream, which we view as favorable. We also believe Vistra's operating efficiency has somewhat improved because it recently announced the retirement of an additional 2 GW of coal-fired generation to comply with the multipollutant standards. Vistra has already retired substantial megawatts in ERCOT and replaced them with efficient gas-fired generation by acquiring the Odessa, Lamar, and Forney gas units and the Upton solar unit. Importantly, the company now estimates operating synergies of $565 million, which will ramp up from $195 million in 2018 to the full run rate by year-end 2020.

With one of the larger coal-fired fleets in ERCOT, Vistra's carbon footprint was significant, especially because the Sandow unit was supported by Vistra's Three Oaks coal mine. In late 2017, Vistra announced the closure of nearly 4.2 GW of its coal-fired capacity and the mine, which we view favorably. This is somewhat offset by the social and cost effects of future AROs, reflected in the debt adjustment in our financial analysis. We still see some of Vistra's coal-fired units as at risk. Their shuttering would improve environmental factors but could somewhat elevate social risks.

Vistra acquired Dynegy in April 2018. While the higher debt burden of the erstwhile Dynegy's balance sheet increases leverage, Vistra used cash on hand shortly after close to repay $850 million of Dynegy's 2019 maturities. The company also used cash held in letter of credit collateral accounts to extinguish a term loan C. Subsequently, the company refinanced about $1.253 billion of debt in first-quarter 2019. Our adjusted financial ratios are higher than the company's calculations because we factor imputed debt related to long-term obligations like pensions, AROs, and leases. The difference between the company's net leverage guidance and our calculations is from off-balance-sheet adjustments of about $1.3 billion and lower cash flows from our price assumptions in its wholesale business. After incorporating off-balance-sheet debt pertaining to these obligations (the company recently retired three coal-fired assets), but also giving credit for surplus cash, we estimate adjusted debt to EBITDA at about 3.4x at year end 2019. Also, based on the forward curve, we believe that Vistra should generate cash flow that results in adjusted debt to EBITDA potentially declining to below 3.0x by year-end 2020. Similarly, we expect adjusted FFO to debt between 25% and 28% through 2020.

While financial ratios have improved and could further, Vistra has started allocating excess cash opportunistically for retail business rollups and share repurchases. In fact, net deleveraging has slowed over the past two quarters even as repricing debt has lowered interest costs. As a result, we don't expect adjusted net debt to EBITDA (including off-balance-sheet items) to decline significantly below 3.0x. That said, Vistra's cash flow conversion rate (i.e., EBITDA to free operating cash flow, or cash flow after capital expenditures) is high. In 2019, we expect Vistra's cash flow conversion ratio to be above 50%. Management projects a similar level each year through at least 2020 (including the benefits of tax reform).

Vistra's relatively high cash flow conversion ratio is primarily attributable to a couple of company-specific factors. First, significant EBITDA comes from its retail business, which requires very little capital investment (we expect this to be lower as competition intensifies). In addition, as

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Vistra has evolved its supply base from older, coal-fueled plants to newer CCGTs, its free cash flow conversion rate has continued to increase. CCGTs are less capital intensive than coal plants and less expensive to maintain than refinery assets, which tend to be older and more complicated than power assets and require more maintenance capital.

Outlook

The positive outlook reflects S&P Global Ratings' view that increased fuel, regional, and revenue diversification, combined with capacity payments and retail revenues, which generate almost 45% of aggregate EBITDA, should allow Vistra to manage its adjusted debt to EBITDA of 3.25x and adjusted FFO to debt of about 25%. The positive outlook also incorporates our view that the less capital-intensive retail business will continue to provide a countercyclical hedge when wholesale margins decline while also generating solid cash flow conversion, which the company will use to eventually lower net debt to EBITDA below 3.0x.

Downside scenario

We could revise the outlook to stable if debt to EBITDA increased to above 3.5x on a sustained basis, or if FFO to debt declined below 22%. Our assessment also assumes less net debt treatment for surplus cash. We think expected deleveraging through 2019 could slow if the company chooses to deploy cash for acquisitions instead.

Upside scenario

We could raise the rating if we continue to gain confidence in the sustainability and stability of Vistra's retail power business, even as that business continues projected growth. With materially higher summer prices, we see some risks to retail margins given that this business has not been stressed since 2011. Specifically, we could raise the rating if adjusted debt to EBITDA declines below 3.0x or if adjusted FFO to debt increases above 28% on a sustained basis, and free cash flow generation continues to be high even under a sustained $2.5-$2.75 per million British thermal unit (mmBtu) gas environment. We will likely monitor performance through 2019 and could raise the rating over the next six months.

Company Description

Vistra is an independent power company headquartered in Texas. that operates retail and generation businesses throughout the U.S. On April 9, 2018, Vistra acquired Dynegy in a merger agreement. As a result, Vistra now owns about 41 GW of installed generation capacity. Vistra's retail arm now serves about 2.2 million residential customers, about 1.2 million in municipal aggregation customers, and about 500,000 business customers, with estimated retail sales of 86 TWh (about 97 TWh after the Ambit acquisition). The company is one of two large retail electricity providers in ERCOT and will now expand its retail footprint in Dynegy's regions of operations.

We expect aggregate EBITDA contributions of about $3.1 billion-$3.3 billion to be about 70% from Vistra's wholesale operations (including hedges), with declining margins, and about 30% from retail power operations, with some mitigating pickup in cash flows. This balance can shift based on economic and commodity cycles.

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Our Base-Case Scenario

- Henry Hub gas prices of $2.5-2.75/mmBtu through 2021 and PJM Interconnection West hub power prices between $30 and $31 per megawatt hour (MWh) through 2021.
- ERCOT round-the-clock prices significantly backwardated, declining to $31/MWh in 2020 and to $25/MWh through 2023.
- Only current hedges are assumed.
- Capital expenditures between $500 million and $600 million through 2021.
- Total wholesale generation of about 190 TWh through 2021.
- Total retail load of about 85 TWh through 2021.

Liquidity

We assess Vistra's liquidity as strong. As of June 30, 2019, the liquidity was substantial $965 million of cash on hand and $2.2 billion available under its combined credit lines. We see Vistra's standing as strong in the marketplace. By repricing and refinancing originally raised debt since 2016, the company has a demonstrated it can access the credit markets. Over the next 12-24 months we expect the company's liquidity sources to exceed its uses by more than 6.0x (excluding the effects of the proposed acquisition, as well as nonmandatory debt repayment).

Principal liquidity sources:

- FFO of about $2.2 billion-$2.3 billion.
- Availability under the revolver of about $2.2 billion.
- Cash on hand of about $965 million.

Principal liquidity uses:

- Capital expenditures of about $600 million.
- Mandatory debt amortization of about $12 million.
- Share repurchases.
- About $100 million of working capital outflows.

Issue Ratings - Recovery Analysis

Key analytical factors

We valued Vistra using a discrete asset valuation approach for its power assets and an EBITDA multiple approach for the retail business. Our simulated default stress scenario assumes a default at year-end 2023 caused by low natural gas prices and significant renewable proliferation. Substantial utilization of renewable assets during peak summer hours inhibits the scarcity price formation and mutes round-the-clock prices. This affects the implied market heat rate based on lower-than-expected demand growth. We also assume that Luminant (Vistra's wholesale power

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business) does not add to the current hedges, given the low market prices, and has operational issues at its facilities, while recent regulatory announcements do not improve the dispatch and margins of coal assets, and most of them are shut down.

Our recovery valuation attributed no value to the Texas seasonal coal plants and valued the baseload coal units at $25-$150 per kilowatt (kW) (Oak Grove is highest). The operating coal assets in the midwest are also valued at $25-$75/kW. The base load natural gas assets acquired from La Frontera were assigned a distressed valuation of at $400-425/kW, which is somewhat higher than the distressed valuation witnessed during 2009-2011 ($330/kW), but is based on a haircut on the purchase price of the assets. The new assets, Upton and Odessa, were similarly valued at close to their development/acquisition prices. We valued the Comanche Peak facility at about $350/kW given a view of prolonged depressed power pricing in ERCOT, but also factoring in its synergies with the retail electric business. Dynegy's CCGTs across PJM and New England are valued at $350-$375/kW. However, its less-efficient CCGT in ERCOT are valued at $250/kW.

We assumed a 25% haircut to average expected retail EBITDA over the next few years (this also muted the impact of lower power prices, which aids retail margin expansion). We assumed a distressed multiple of 5x for the retail business. While recent transactions have been at higher multiples (6.0x-8.0x), given the size of the retail operations we think a distressed multiple would be lower because there are not many buyers capable of absorbing such a large portfolio.

Simulated default and valuation assumptions

- Simulated default occurs at year-end 2023.
- Increased regulatory scrutiny on coal plants contributes to weaker cash flows, which results in the closure of the seasonal facilities.
- Lower gas prices continue to drive down power prices, resulting in a less economical nuclear unit.
- Decline in secular demand and milder weather affects volumes and/or margins of both the wholesale and retail electric segments.
- Operational costs increase in response to weaker availability and worsening heat rates.

Simplified waterfall

- Gross enterprise value (EV), wholesale business ($/kW basis): about $8.9 billion
- Gross EV, retail business (EBITDA multiple basis): about $3.6 billion
- Total EV: about $12.6 billion
- Net EV available to secured creditors (after 5% administrative expenses): about $11.9 billion
- First-lien debt outstanding at default at Vistra Operating Co. LLC: about $8.5 billion (assumes 85% revolver draw, unamortized term loans at default, capital and leverage lease obligations, preferred stock, and an assumed six-months' pre-petition accrued interest)
- --Recovery expectations for secured debt: 95% (recovery rating '1')
- Value available to unsecured noteholders at Vistra Energy: $3.4 billion
- Unsecured debt at default: $4.7 billion
- --Recovery expectations for unsecured debt: Capped at 65% (recovery rating capped at '3')

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Ratings Score Snapshot

Issuer credit rating: BB/Positive/--

Business risk: Fair

- Country risk: Very low
- Industry risk: Moderately high
- Competitive position: Fair

Financial risk: Significant

Cash flow/leverage: Significant

Anchor: bb

Modifiers

- Diversification/portfolio effect: Neutral
- Capital structure: Neutral
- Financial policy: Neutral
- Liquidity: Strong
- Management and governance: Fair
- Comparable rating analysis: Neutral

Stand-alone credit profile: bb

- Group credit profile: bb

Related Criteria

- General Criteria: Group Rating Methodology, July 1, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria | Corporates | General: Recovery Rating Criteria For Speculative-Grade Corporate Issuers, Dec. 7, 2016
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria - Corporates - Industrials: Key Credit Factors For The Unregulated Power And Gas Industry, March 28, 2014
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012

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- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Ratings List

Ratings Affirmed		
Vistra Operations Company LLC		
Senior Secured	BBB-	
Senior Unsecured	BB	
Ratings Affirmed; Outlook Action		
	To	**From**
Vistra Energy Corp		
Issuer Credit Rating	BB/Positive/--	BB/Stable/--
Ratings Affirmed; Recovery Ratings Unchanged		
Vistra Operations Company LLC		
Senior Secured	BBB-	
Recovery Rating	1(95%)	
Senior Unsecured	BB	
Recovery Rating	3(65%)	

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.capitaliq.com. All ratings affected by this rating action can be found on S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box located in the left column.

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MOODY'S INVESTORS SERVICE

CREDIT OPINION
31 December 2019

Update

Rate this Research

RATINGS

Vistra Energy Corp.

Domicile	Texas, United States
Long Term Rating	Ba1
Type	LT Corporate Family Ratings
Outlook	Positive

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.

Contacts

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Vistra Energy Corp.

Update following upgrade to Ba1

Summary

Vistra Energy's credit profile reflects its large and diversified generation portfolio, strong and profitable retail operation, and moderate leverage of around 3.1x net debt to EBITDA.

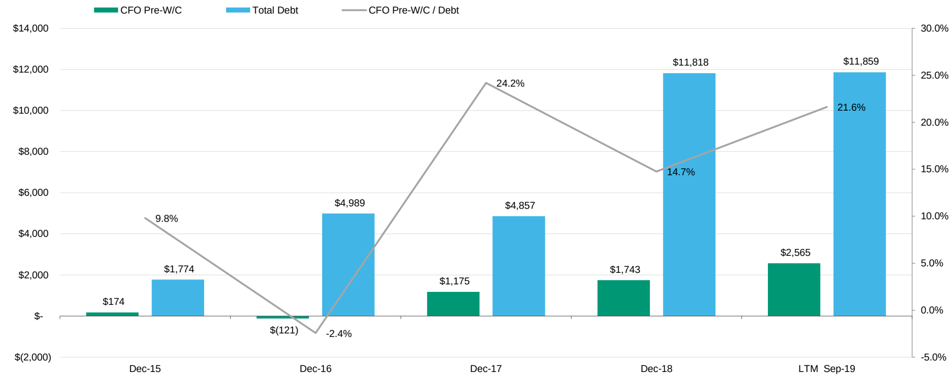
Vistra's generation business provides about 70% of consolidated EBITDA. The fleet is comprised largely of natural gas and coal-fired power plants, but most of the value of the generation fleet lies within 20 GW of high-efficiency natural gas-fired power plants. This large fleet of gas plants, as well as strong retail operations, helps mitigate volatile merchant power markets.

Vistra's retail business, which contributes about 30% of consolidated EBITDA, is stable and profitable because of its large scale, strong brands, and the company's ownership of generation assets. Owning generation provides a critical competitive advantage because it gives the retail operation greater control over the costs and risks associated with power procurement.

Vistra recorded a ratio of CFO pre-WC to debt of 22% in the last twelve months ended 30 September 2019, a substantial improvement from 15% in 2018. As the company reduces its net debt to EBITDA leverage to a projected 2.6x in 2020 and 2.5x in 2021, Vistra's CFO pre-WC to debt should rise to around 25% or better, a level that is consistent with our financial metric guidelines for investment-grade unregulated power companies.

Exhibit 1

Historical CFO Pre-WC, Total Debt and CFO Pre-WC to Debt ($ MM)



Source: Moody's Financial Metrics

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Credit Strengths

» Stable, profitable residential retail operations

» Strong wholesale market conditions in Texas

» A large fleet of high-efficiency gas plants

» Relatively low and declining debt leverage

Credit Challenges

» Geographically concentrated in Texas

» Oversupply of generating capacity in PJM

» High carbon transition risk due to sizable coal generation

Rating Outlook

Vistra's positive ratings outlook reflects management's commitment to deleverage, which includes reducing net debt to EBITDA to 2.6x for 2020 and 2.5x for 2021. The positive outlook also incorporates the favorable power price environment in ERCOT.

Factors that Could Lead to an Upgrade

We could consider an upgrade of Vistra to investment grade should the company maintain its net debt to EBITDA targets and sustain a CFO pre-WC to debt ratio above 23% starting in 2020, and if commodity markets remain manageable.

Factors that Could Lead to a Downgrade

We could consider stabilizing the outlook or take a negative rating action if the company relaxes its debt leverage target. A downgrade is also likely should its CFO Pre-WC to debt ratio fall below 18%.

Key indicators

Exhibit 2

Vistra Energy Corp. [1]

	Dec-15	Dec-16	Dec-17	Dec-18	LTM Sept-19
CFO Pre-W/C + Interest / Interest	3.0x	0.2x	5.8x	4.1x	4.7x
CFO Pre-W/C / Debt	9.8%	-2.4%	24.2%	14.7%	21.6%
RCF / Debt	7.7%	-15.5%	25.1%	17.9%	20.8%

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Financial Metrics™
Source: Moody's Financial Metrics

Profile

Vistra is the largest independent power producer in the US, with 38.9 gigawatts (GW) of generating capacity and 181 terawatt-hours (TWh) of power production. It is also one of the largest residential retail energy suppliers in the US, with about 35 TWh a year of retail load and about 2.8 million residential customers (excluding municipal aggregation customers but including the Ambit and Crius acquisitions).

Vistra has three major sources of cash flow -- retail, Texas generation and non-Texas generation. Moody's estimates that the retail operation will generate about 30% of consolidated EBITDA while Texas generation and non-Texas generation will each contribute about 35%. Because retail operations require only a minor amount of maintenance capital expenditures, the retail operation's free cash flow contribution is markedly higher than its EBITDA contribution.

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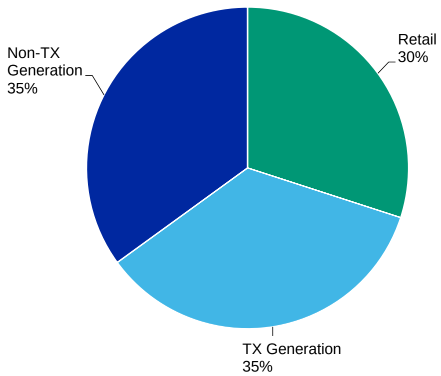
Exhibit 3
Approximate EBITDA contribution from retail, Texas generation and non-Texas generation



Source: Moody's estimates

Generation Assets

ERCOT is the most important market for Vistra's generation business because of its large asset position and its importance to the residential retail operation. Its generation base in ERCOT is concentrated near its incumbent territory of North Texas and it is comprised of a mix of coal, high-efficiency gas plants, and its sole nuclear facility.

PJM is the second most important market for Vistra. The company has a large fleet of high-efficiency gas plants, combustion turbines, as well as some coal capacity, concentrated in Ohio and the ComEd zone (Chicago area).

Vistra's generation assets in New England only represent 10% of its total capacity, but it is a fairly large position considering the size of the New England market. The New England market is one of the smallest unregulated markets in the US, with a peak demand of around 28 GW.

Exhibit 4
Vistra operating generation capacity by location and technology type

Region	Capacity (MW)	% of total
ERCOT (TX)	18,356	47%
PJM	10,769	28%
New England	3,518	9%
New York	1,212	3%
MISO - IL	3,833	10%
CAISO - CA	1,185	3%
Grand Total	**38,873**	**100%**

Technology	Capacity (MW)	% of total
CCGT (gas)	19,490	
CT (gas and oil)	2,883	
Steam Gas	2,480	
Total gas and oil	**24,853**	**64%**
Coal	11,540	30%
Nuclear	2,300	6%
Solar & Battery	180	0.5%
Grand Total	**38,873**	**100%**

Source: Company filings

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Retail Operation

Vistra's retail customer base can be segmented into three types: residential (including small business), commercial and industrial (C&I), and municipal aggregation. The residential business produces by far the strongest margin and dominates the EBITDA contribution for the retail operation. Both the C&I and the municipal aggregation are high volume (in terms of TWh sold), thin margin businesses.

Vistra supplies directly to residential customers and indirectly through its municipal aggregation business. We mainly focus on the customer count that Vistra serves directly because of its higher profitability.

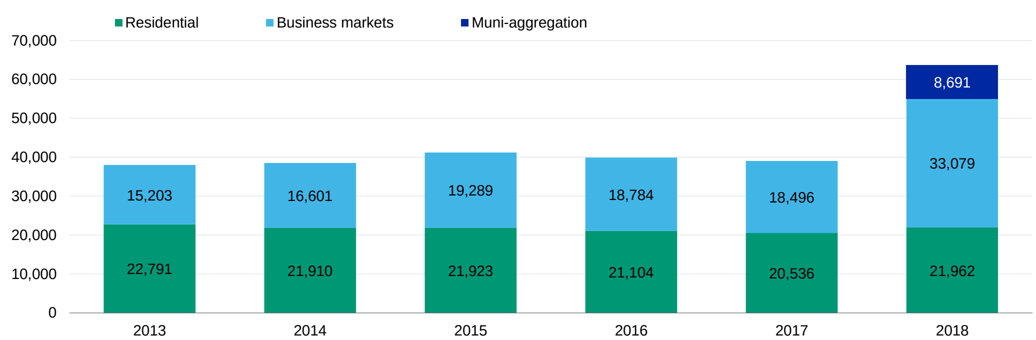
Prior to 2019, Vistra had little or no residential (and small business) retail business outside of Texas. However, with the acquisition of Crius and Ambit, Vistra is now also one of the largest retail energy providers nationwide within the residential market. Crius and Ambit sell both electricity and natural gas products to residential and small business customers in several states.

Exhibit 5
Vistra's residential retail operation

	Customer Count (million)	Purchase price ($m)
Existing operation	1.5	
Crius (acq. July 2019)	0.5	400
Ambit (acq. Nov 2019)	0.8	475
	2.8	

Source: Vistra's 2Q2019 and 3Q2019 earnings presentations

Exhibit 6
Steady Volume from Retail Sales



Source: Company Presentations

Capital Structure

Vistra has about $6.8 billion of secured debt and it comprises about 60% of Vistra's total long-term debt. $3.1 billion of the secured debt are senior secured notes. These notes have a fall-away lien clause in their indenture, in which the collateral securing the notes will be released if Vistra Operations' senior, unsecured long term debt securities obtain an investment grade rating from two out of the three rating agencies. The security interest would be reinstated if Vistra fails to maintain the investment grade rating from two rating agencies. The term loan and other secured debt do not currently have a fall-away provision.

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Exhibit 7
Vistra's Long-Term Debt Structure Pro Forma YE2019

Security	Long Term Debt Type	$ Billions	% of total
Unsecured	Senior notes	4.7	
	Total unsecured	**4.7**	**41%**
Secured	Term Loan B (1st lien)	2.7	
	Sr secured notes (fall-away 1st lien)	3.1	
	Others (various liens)	1.0	
	Total secured	**6.8**	**59%**
	Total long term debt	**11.5**	**100%**

Source: Company filings

Detailed Credit Considerations

Retail business is strong and stable

We generally view retail operations as having a high business risk, but Vistra's retail business is substantially more stable and profitable than the typical retail energy provider in the US. Vistra, along with NRG, are the leaders in the US residential retail market with strong brand names and access to owned generation. These strong brand names allow the companies to maintain a high margin while owning generation allows them to better manage risk and control the cost of power supply.

Strong brand name

In the residential retail energy market, a strong brand can create significant pricing power and strong margins for the energy retail provider. For example, the top three brands in Texas – TXU Energy, Reliant Energy and Direct Energy – had a weighted average retail price of 12.75 cents/kWh for residential customers in 2018 based on Energy Information Administration (EIA) data. The rest of the retailers averaged only 10.25 cents/kWh. For Vistra, higher prices associated with its TXU Energy brand alone may have generated an additional $555 million of pretax cash flow relative to the weaker brands (see exhibit 8). The calculation is based on EIA's data, which indicates that TXU Energy sold 20.7 TWh of electricty to residential customers at a 2.7 cent/kWh premium compared to the smaller retail energy suppliers in Texas.

Exhibit 8
TXU Energy's retail premium

Residential Rates	
TXU Energy retail rate (c/kWh)	12.9
Non premum retail rates (c/KWh)	10.3
TXU Energy rate premium (12.9 - 10.3=)	2.7
TXU Energy residential volume (TWh)	20.7
TXU Energy premium revenue ($m) (2.7 x 20.7 =)	**555**

Source: EIA 2018 Form 861

The strong residential retail margin appears to be sustainable. Though many view electricity as a commodity, the willingness of customers to pay more for a quality brand has persisted for almost 18 years, since Texas's retail competition began in January of 2002. Even though Vistra's TXU Energy brand had a head start as it was the incumbent supplier in the Oncor service territory (Dallas and surrounding areas) when Texas deregulated, the TXU Energy brand has since been tested by plenty of competition.

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Typically, TXU Energy is in competition with about 50 other retail energy providers. The vast majority of customers (>95%) in Texas have, at one point or another since 2002, either switched or actively renewed their contracts with a retail energy supplier of their choice, rather than relying on the default supplier selection process. Vistra's customer base has been rigorously churned (i.e., customers switching or actively renewing contracts) over this period. We estimate that each month about 1% to 2% of customers leave Vistra for various reasons. To maintain its customer count, Vistra has to actively acquire new customers every month.

Access to owned generation – a competitive advantage

Vistra's retail business benefits greatly from having access to owned generation. From time to time, the wholesale power market can exhibit extreme volatility, which has occurred because of large swings in gas prices or severe weather events under tight market conditions. It is not surprising to observe spot power prices jumping from the $30/MWh range to over $1,000/MWh, and then back down to $30/MWh over the course of a few days.

Vistra and NRG's retail subsidiaries have a significant competitive advantage because they can effectively hedge their supply costs with owned generation and not have to post large sums of collateral. In contrast, with wild market swings, energy retailer providers that do not have access to owned generation can easily incur large losses if they do not protect their margin with a large volume of hedged positions. While hedging is an effective way to minimize market risk, a large hedged position also means a large demand for financial liquidity. Retail energy providers can have a perfect hedged position from a market risk perspective but often still have to post margins (or other forms of collateral) to the wholesale side of the trade. The demand on liquidity with the collateral calls can be overwhelming at times because a large price swing is being applied to a large volume of trade positions. Not hedging enough or not having the liquidity to support the hedged positions is usually the cause of financial distress for retail energy providers.

Other synergistic effects of owning both retail and generation

Pairing generation with a retail operation has many other synergistic benefits besides effective hedging and reducing demand on liquidity. Some generation assets are in less liquid locations and many markets do not have an active and liquid forward market. The brokerage cost of hedging in markets with poor liquidity can be expensive, often in the $2/MWh to $4/MWh range. The level of savings garnered by avoiding these costs is high as the gross margin of C&I retail suppliers is also in this range.

By owning both retail and generation, a company's overall cash flow may be more stable because the generation margin and retail margin are countercyclical in the short-term. Because mass retailers want to keep their mass customer electric bills relatively stable, a rise in wholesale power prices may depress the retail margin in the short term but higher wholesale prices often mean better margins for the generation assets. The reverse is also true. When wholesale prices fall, the generation margin declines immediately but the retail margin expands because retailers can reducing retail rates at a much slower rate without losing customers.

History of stable cash flows

Since 2010, Vistra's retail operations have generated EBITDA of about $800 million each year, except in 2014 when a jump in gas prices pushed its EBITDA down to $682 million (see exhibit 9). Vistra's retail gross margin for residential customers has been consistently above $30/MWh since 2010. The company's retail EBITDA should grow by $120 million due to the Crius acquisition and another $125 million due to the Ambit acquisition on a run rate basis.

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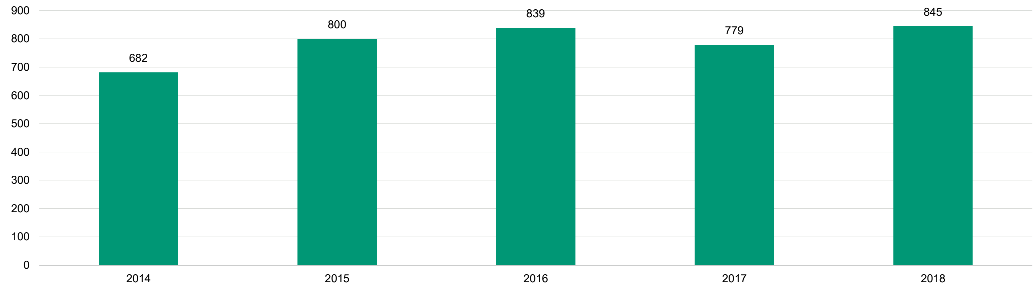
Exhibit 9

Retail EBITDA



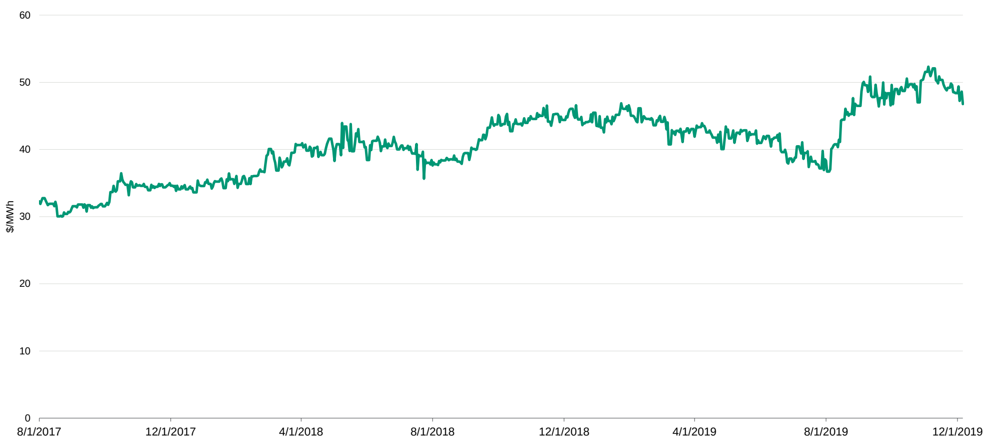
Source: Company Filings

Generation – ERCOT market remains tight

After years of oversupply and rock-bottom prices, the ERCOT market (which covers about 90% of Texas) has recovered strongly and currently has tight supply-demand fundamentals, with a reserve margin of 10.6% falling below planning targets of 13.75%. This is in large part because of Vistra's decision to retire 4.2 GW of its uneconomic coal-based generating capacity in early 2018. Since then, ERCOT power prices have improved significantly. For example, ERCOT Houston's forward on-peak prices for 2020 delivery rose to $50/MWh, from about $30/MWh before the closure announcement (see exhibit 10).

Exhibit 10

On-peak forward power prices for 2020 delivery to ERCOT North



Source: SPGMI

Because of Vistra's highly hedged position in the near term, the effects of higher prices were relatively mild in 2018 but became much more significant in 2019. We estimate that, with all being equal, the price improvement is boosting Vistra's CFO pre-WC to debt by about 500 basis points.

The sustainability of the current high market prices in ERCOT is uncertain, however. Texas is known for the ease of building new power plants owing to ample land availability and light permitting requirements. In past years (2014-2017), developers were eager to build new plants based on an expected supply shortfall. When that demand growth failed to materialize, the new capacity became surplus supply. We expect that some developers likely have learned from their overbuilding experience, but it is difficult to predict if they will remain disciplined given the intense investment interest in this sector.

As shown in Exhibit 11, ERCOT's forward market appears strong for 2020 but declines every year after that. The backwardation of the forward curve (i.e., forward prices in the near term are higher than those further out) is an indication that market participants may

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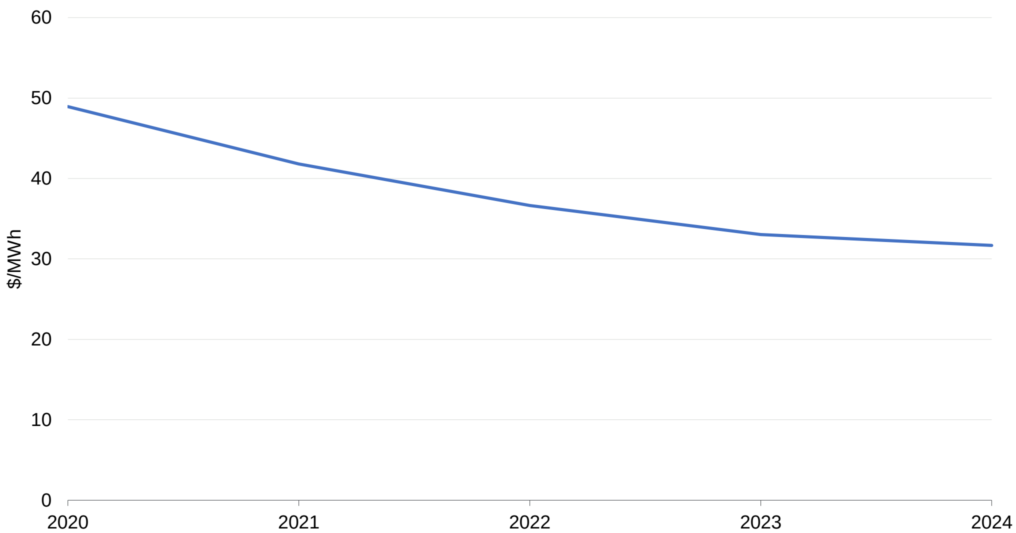
not be confident about the sustainability of high prices in the future. However, some of the long-dated deliveries, such as those for 2022 and beyond, are thinly traded and may not be a reliable indicator of overall market conditions. Moreover, the backwardation may limit the amount of new entrants because it hinders developers' ability to hedge in a profitable period that is often required to finance construction.

Due to the growing share of wind generation, we expect price volatility to increase in ERCOT. An increase in volatility is likely to benefit Vistra's fossil plants as they are dispatchable and increase the importance of the generation assets to its retail operation. ERCOT is the only market in the US that is growing strongly, with about a 2% increase per year (~1,500 MW of additional dependable capacity a year) due to population growth and oil and gas development in West Texas. However, the growing peak demand is mainly being met by more renewable generation like wind and solar. ERCOT now has 22,051 MW of installed wind power, which makes up roughly one-quarter of the region's generation mix. As a result of the large and growing amount of renewable generation in ERCOT, a shortfall in wind generation has become an equal or greater concern than extreme heat for causing a severe power shortage event, such as we saw in August 2019.

Exhibit 11
Forward Curve for On-Peak Power at ERCOT North Zone as of December 21, 2019



Source: SPGMI

Vistra owns about 18.4 GW of generating capacity in ERCOT, with about 62% gas/oil-fired and 37% coal-fired or nuclear. The company's most valuable assets within ERCOT are the high-efficiency gas plants. Vistra's Odessa gas plant is particular lucrative because its fuel supply economics are tied to Permian gas prices that are substantially below Henry Hub prices (see exhibit 13).

Vistra closed 4.2 GW of its high cost coal plants in 2018 but still have significant of coal capacity (4.5 GW) remaining. We estimate that Vistra produces about 30 TWh of power using coal generation and 17 TWh of power from the Comanche Peak nuclear plant. As a result, a $1/MWh swing in power prices is likely to result in $47 million change in pretax cash flows, with all else equal.

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Exhibit 12

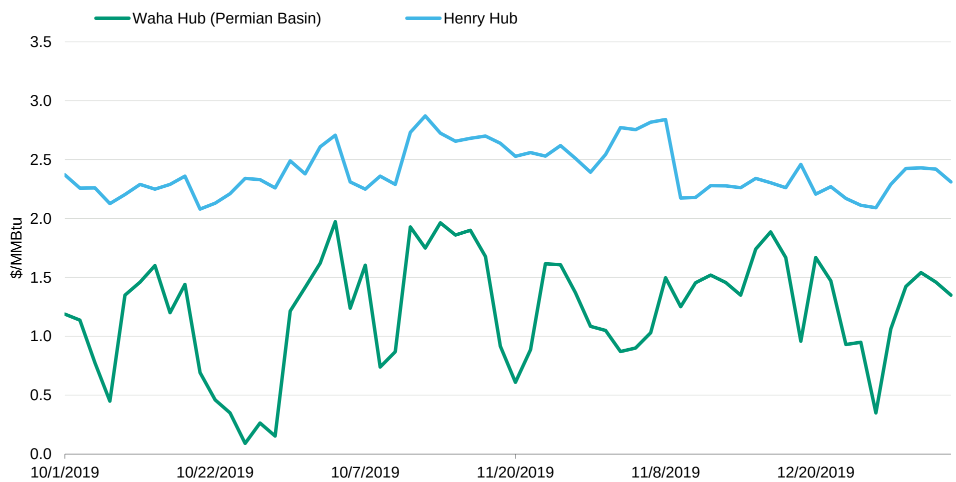
Vistra's ERCOT generation capacity and 2018 capacity factors

Technology type	Capacity (MW)	2018 Capacity Factor (%)
CCGT (Gas)	7,838	51
Comb. Turbines (Gas & Oil)	1,058	1
Steam Gas	2,480	2
Total Gas & Oil	**11,376**	
Coal	4,500	73
Nuclear	2,300	95
Coal & Nuclear	**6,800**	
Solar	**180**	25
Grand Total	**18,356**	

Source: Company filings and SPGMI

Exhibit 13

Spot gas price at Waha Hub (Permian Basin) compared to Henry Hub



Source: SPGMI

Value of generation assets concentrated in the CCGTs

Within Vistra's generation portfolio, its large fleet of high-efficiency gas plants represents the most important value proposition. These gas units are also known as CCGTs because they use combined cycle gas turbine technology to achieve high fuel efficiency for power generation. We estimate the value of these CCGTs to be about $11.7 billion, which is on par with the $11.6 billion unadjusted debt balance at the end of the third quarter of 2019.

Among Vistra's three key markets, ERCOT, PJM and New England represent about 46%, 30% and 19% of this value, respectively. To value Vistra's CCGT fleet, we ascribed a $700/kW valuation to its plants in ERCOT and $600/kW to PJM and New England. Vistra owns 7.8 GW of CCGTs in ERCOT, 5.9 GW in PJM and 3.5 GW in New England. Vistra also has about 1 GW of CCGT capacity in California and a little more than 1.2 GW in upstate New York. We have attributed $400/kW of value to California and $100/kW to New York and they each represent only about 3% and 1% of aggregate value within the CCGT portfolio.

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Exhibit 14

CCGT values are concentrated in ERCOT and PJM

Region	Capacity (MW)	Valuaton ($/kW)	Total value ($bn)	% of total value
ERCOT (TX)	7,838	700	5.5	47%
PJM (OH, PA, IL, VA, NJ)	5,902	600	3.5	30%
New England	3,518	600	2.1	18%
California	1,020	400	0.4	3%
New York	1,212	100	0.1	1%
Total	**19,490**	**599**	**11.7**	**100%**

Source: Moody's and company filings

Coal capacity outside of ERCOT is more of an option value play

Outside of ERCOT, because of the strong competition from gas, coal plants are generally struggling with break even or mildly positive cash flows. In fact, coal and smaller nuclear plants are prime candidates for retirement in the current commodity environment. However, these plants could also capture significant upside should power prices spike due to an unexpected shortage or a jump in gas prices.

We estimate that Vistra produces about 28 TWh of power using coal outside of ERCOT. Therefore, a $1/MWh increase in wholesale prices, with all else equal, would translate to $28 million of additional pretax cash flow on an unhedged basis.

Exhibit 15

Estimated run-rate generation and power price sensitivity for Vistra's coal capacity

Region	Production (TWh)	Revenue sensitivity to $1/MWh change in power price ($million)
PJM	15	
MISO	13	
Outside ERCOT total	28	28
ERCOT	30	30
Grand Total	58	58

Source: Moody's estimates

PJM's capacity prices at risk

The level of capacity payments in PJM and in particular the ComEd zone have been fairly high considering that the PJM market is oversupplied with generating capacity. The market had a reserve margin close to 29% in the summer of 2019, well in excess of the 15% the independent system operator has established as the target reserve margin needed for one in ten year outage event reliability.

The catalyst that triggers a decline in PJM's capacity prices could come from Illinois, which is looking to extract itself from PJM's capacity auction process and set up its own capacity procurement process. The enabling legislation could pass as early as the spring of 2020, though the passage is not a given because there are still some technical and political hurdles.

If Illinois sets up its own capacity procurement process, it will likely procure what it needs for its own load plus a reserve margin required for reliability. Since Illinois' ComEd zone is currently oversupplied, the surplus supply beyond what is required for Illinois'

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procurement program will seek to export itself to the rest of PJM. If capacity is added to the rest of PJM without the accompanying load, PJM's capacity prices will fall.

Illinois's motivation to remove itself from PJM's capacity market is partly attributable to the lengthy debate over how to fairly price state-subsidized nuclear capacity within the capacity market. Most recently, in a ruling issue on December 19, 2019, the FERC required that starting in the next PJM auction, power plants that receive state-level financial support have to bid their capacity into the auction based on their unsubsidized cost structure. This requirement, in theory, should boost capacity prices and support unsubsidized generators because it is removing the price suppressive effects of state-level subsidies. But in reality, it may end up hurting PJM's system-wide capacity prices instead.

States that are providing the financial support such as Illinois, New Jersey, Maryland and Ohio may feel that they are being financially penalized for supporting their environmental goals and respond by moving their capacity procurement process out of the PJM capacity market through the fixed resource requirement alternative. Since these states will only have to procure enough capacity to support their load, the surplus capacity will likely find its way to the rest of PJM and depress the system-wide capacity price.

Illinois could be first one to leave PJM's capacity auction process but other states such as New Jersey, Maryland and Ohio may follow. As these states dump their surplus capacity into the rest of PJM, capacity prices could be driven to a very low level and may eventually raise doubts about the viability of a capacity market construct within PJM.

PJM energy market reforms are credit positive

PJM has proposed new price setting rules for fast start and inflexible generation in the energy market as well as the redesign of its operating reserves demand curves. We expect the redesigned operating reserves demand curve and fast start pricing to take effect in early 2020 with inflexible generation reform to follow thereafter. These rule modifications could raise spot market prices and bolster generators' cash flow.

The rule changes involve a market microstructure for how inflexible generating units are bid into the spot market for power trading. A generation unit is deemed inflexible if it has to run at a certain minimum load because of technical or economic reasons. Based on existing rules, these inflexible units are prohibited from setting prices when quantities are below their minimum utilization rates because they risk driving up market prices owing to the cost of their inflexibility. However, under the new rule, inflexible units are recognized as part of market dynamics and are free to set the market price even if they drive up prices.

In theory, this reform has the potential to benefit generators greatly, something in the order of $3.50/MWh according to PJM's modeled results (see PJM's proposed power market reform would be credit positive for generators.) However, the forward market has had a muted response to this reform and we are also circumspect on the actual upside, especially for the period beyond 2021. We believe that the impact of such a reform is hard to predict because the spot power market is extremely complex and subject to many volatile commodity and operational factors that are hard to model accurately.

ESG Considerations

Elevated carbon transition risk

From an environmental risk perspective, Vistra is most exposed to carbon regulation. The company has elevated carbon transition risk within the power generation sector on account of its business model as an unregulated power generator with significant fossil fuel exposure. Vistra owns nearly 11 GW of coal-fired generation and 25 GW of natural gas-fired generation out of total owned generation of approximately 39 GW. For the year 2018, Vistra generated 119 million metric tons of carbon dioxide equivalents.

Vistra's coal plants are most vulnerable to the threat from the growing renewables and environmental restrictions. In the past two years, the company has announced the retirement of 7.8 GW of coal/lignite capacity and has closed 7.2 GW so far. The plant closures in ERCOT and in the MISO portion of Illinois can be partly attributable to the growth of renewable generation, environmental restrictions and carbon transition pressure. The plant closures in PJM are less related to renewable growth.

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Exhibit 16

Vistra's recent coal/lignite plant closures

Plant name	Location	Owned Capacity Interest (MW)	Year offline
Monticello	ERCOT - TX	1,880	2018
Sandow	ERCOT - TX	1,137	2018
Big Brown	ERCOT - TX	1,150	2018
	Total ERCOT - TX	**4,167**	
Northwestern	PJM - PA	51	2018
Killen	PJM - OH	204	2018
Stuart	PJM - OH	679	2018
	Total PJM - OH	**934**	
Coffeen	MISO - IL	915	2019
Duck Creek	MISO - IL	425	2019
Havana	MISO - IL	434	2019
Hennepin	MISO - IL	294	2019
Edwards	MISO - IL	585	2022
	Total MISO - IL	**2,653**	
	Grand total	**7,754**	

Source: company filings

Going forward, Vistra's coal plants in MISO are under the highest threat because energy prices continue to be low in MISO-Illinois and capacity revenues are insignificant. Vistra's coal plants in PJM are in less danger and are likely to remain economic, but could come under pressure with a very low or zero capacity price. The low capacity price scenario could play out if states supporting renewable and nuclear plants decide to extract themselves from PJM's capacity market as discussed previously.

Vistra's coal plants in ERCOT are not under threat for the foreseeable future because Vistra has closed the higher cost coal plants and ERCOT currently has a favorable market conditions for just about any generation asset in operation. However, a severe downturn at some point could still pose threat to these plants. Exhibit 17 lists our ranking of closure risk for Vistra's coal plants from highest to lowest.

Exhibit 17

Ranking of closure risk for Vistra's coal plants from highest risk to lowest risk

Plant Name	Market location	Capacity (MW)	2018 Capacity Factor %	2017 Capacity Factor %	Year last operatng unit added
Joppa	MISO - IL	802	55	45	1955
Newton	MISO - IL	615	60	61	1977
Baldwin	MISO - IL	1,185	45	50	1975
Coleto Creek	ERCOT - South	650	69	70	1980
Kincaid	PJM - ComEd	1,108	49	48	1968
Miami Fort	PJM - OH	1,020	61	75	1978
W.H. Zimmer	PJM - OH	1,300	70	70	1991
Martin Lake	ERCOT - North	2,250	65	59	1979
Oak Grove	ERCOT - North	1,600	84	92	2011
Total		**10,530**	**59**	**61**	

Source: SPGMI and Moody's

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Carbon transition is not all negative for Vistra, however. The company is now one of the leading developers of battery facilities. It is currently building the Moss Landing battery storage project in California, one of the largest in the US. The company could find other opportunities in California where they have ownership of sites with transmission infrastructure as well as niche opportunities in ERCOT.

We expect the US power sector to continue to decarbonize even in the absence of federal regulations due to state/local policies, consumer preferences as well as technology trends. Moody's framework for assessing carbon transition risk in this industry is set out in Carbon Transition Brings Risks and Opportunities for Unregulated Utilities (June 2018).

Financial policy is critical for debt leverage

Vistra recorded a ratio of CFO pre-WC to debt of 21.6% in the last twelve months ended 30 September 2019, a substantial improvement from 15% in 2018. As the company reduces its debt by $1.35 billion in 2020 to meet its target net debt to EBITDA ratio of 2.6x for 2020 and 2.5x in 2021, Vistra's CFO pre-WC to debt should rise to around 25% or better.

We view Vistra's ability to maintain low debt leverage as mainly a matter of financial policy because its businesses generate plenty of after dividend free cash flow (>$1.5 billion a year) to allow Vistra to adjust its debt burden as necessary. While Vistra's financial policy of low leverage has been articulated since it emerged from bankruptcy in October 2016 and debt to EBITDA target has been in place since late 2017, we do not view it as adequately seasoned and we will evaluate the sustainability of this financial policy with additional tests of time.

We believe that Vistra has reasons to stay committed to its low leverage strategy. Vistra is trying to break from past association with the failed independent power producers that were financially unstable. Vistra has stated that low leverage is important for it to eliminate the effects of the commodity cycle and allow opportunistic acquisitions for growth. Having an investment grade credit profile also reduces trade collateral and increases the willingness of retail counterparties to engage in business transactions. Ultimately, Vistra may stay with its current strategy because it has been working, as its stock has doubled since its emergence from bankruptcy.

Liquidity Analysis

Vistra's SGL-1 speculative liquidity rating reflects very good liquidity. The company is expected to have the capacity to meet its obligations over the coming 12 months through internal resources without relying on external sources of committed financing. Moody's expects Vistra to produce more than $1.5 billion of annual free cash flow and maintain a minimum of $400 million of unrestricted cash on hand.

Vistra's strong liquidity profile is supported by $2.725 billion of secured revolving credit facilities that can be used to support letters of credit or fund short-term cash needs. As of 30 September 2019, $1.84 billion was available under the revolving credit facilities. The revolving credit facility contains a material adverse change clause for new borrowing. The revolving facility also has a covenant of 4.25x consolidated first lien net debt to EBITDA but only applies when the usage for borrowing is above 30%. The company was well within this financial covenant requirement at the end of the third quarter of 2019.

Vistra's next major long-term debt maturity is a $500 million of senior unsecured notes due June 2023.

Structural Considerations

Vistra has rationalized its debt structure, which mainly involved consolidating all of the bank loans at subsidiary Vistra Operations. Vistra Operations is also guaranteeing the unsecured senior notes at the Vistra parent holding company.

Due to their first lien position, the bank loans are rated Baa3, one notch above the CFR of Ba1. The senior unsecured notes at the parent holding company are rated Ba2, one notch below the CFR.

Because of a negative covenant on lien subordination in some of Vistra's senior unsecured notes, the amount of principal properties that could be used to secure the bank loan on a first lien basis could be adversely affected. But we believe that based on the current level of secured debt, the amount of value leakage involved would be minor if at all in most scenarios.

Vistra Operations' credit agreement contains certain limitations on making restricted payments. At this point, Vistra Operations has plenty of room (~$6.3 billion as of 3Q2019) to make dividend distributions up to Vistra, including to service the senior unsecured notes at the holding company.

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Rating Methodology and Scorecard Factors

Exhibit 18

Rating Factors

Vistra Energy Corp.

Unregulated Utilities and Unregulated Power Companies Industry Grid [1][2]	Current LTM 9/30/2019		Moody's 12-18 Month Forward View As of Date Published [3]	
Factor 1 : Scale (10%)	**Measure**	**Score**	**Measure**	**Score**
a) Scale (USD Billion)	A	A	A	A
Factor 2 : Business Profile (40%)				
a) Market Diversification	Baa	Baa	Baa	Baa
b) Hedging and Integration Impact on Cash Flow Predictability	Ba	Ba	Ba	Ba
c) Market Framework & Positioning	Ba	Ba	Ba	Ba
d) Capital Requirements and Operational Performance	Baa	Baa	Baa	Baa
Factor 3 : Financial Policy (10%)				
a) Financial Policy	Ba	Ba	Ba	Ba
Factor 4 : Leverage and Coverage (40%)				
a) (CFO Pre-W/C + Interest) / Interest (3 Year Avg)	4.3x	Baa	6x - 7x	Baa
b) (CFO Pre-W/C) / Debt (3 Year Avg)	16.3%	Ba	22% - 27%	Baa
c) RCF / Debt (3 Year Avg)	18.0%	Baa	20% - 25%	Baa
Rating:				
a) Scorecard Indicated Outcome		Ba1		Baa3
b) Actual Rating Assigned		Ba1		Ba1

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of 9/30/2019(L)
[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures
Source: Moody's Financial Metrics

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Appendix

Exhibit 19
Cash Flow and Credit Metrics [1]

CF Metrics	Dec-15	Dec-16	Dec-17	Dec-18	LTM Sept-19
As Adjusted					
FFO	137	219	1,217	2,114	2,650
+/- Other	37	(340)	(42)	(371)	(85)
CFO Pre-WC	174	(121)	1,175	1,743	2,565
+/- ΔWC	89	(7)	260	(225)	(116)
CFO	263	(128)	1,435	1,518	2,449
- Div	-	992	-	-	181
- Capex	486	381	415	577	721
FCF	(223)	(1,501)	1,020	941	1,547
(CFO Pre-W/C) / Debt	9.8%	-2.4%	24.2%	14.7%	21.6%
(CFO Pre-W/C - Dividends) / Debt	9.8%	-22.3%	24.2%	14.7%	20.1%
FFO / Debt	7.7%	4.4%	25.1%	17.9%	22.3%
RCF / Debt	7.7%	-15.5%	25.1%	17.9%	20.8%
Revenue	5,370	5,164	5,430	9,144	11,511
Cost of Good Sold	2,654	2,764	2,889	4,985	5,808
Interest Expense	85	151	244	571	692
Net Income	(193)	8,470	(70)	266	362
Total Assets	15,977	15,513	15,014	26,468	26,443
Total Liabilities	38,870	8,909	8,657	18,450	18,677
Total Equity	(22,893)	6,604	6,357	8,018	7,766

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments. Periods are Financial Year-End unless indicated. LTM = Last Twelve Months
Source: Moody's Financial Metrics

Exhibit 20
Peer Comparison Table [1]

	Vistra Energy Corp.			Exelon Generation Company, LLC			NRG Energy, Inc.			TransAlta Corporation		
	Ba2 Positive			Baa2 Stable			Ba2 Positive			Ba1 Stable		
	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM
(in US millions)	Dec-17	Dec-18	Sept-19	Dec-17	Dec-18	Sept-19	Dec-17	Dec-18	Sept-19	Dec-17	Dec-18	Sept-19
Revenue	5,430	9,144	11,511	18,500	20,437	19,348	9,074	9,478	9,618	1,779	1,736	1,778
CFO Pre-W/C	1,175	1,743	2,565	3,269	3,987	3,563	1,818	1,678	1,739	576	671	564
Total Debt	4,857	11,818	11,859	11,058	10,901	11,252	10,414	7,335	7,071	3,190	2,588	2,668
CFO Pre-W/C + Interest / Interest	5.8x	4.1x	4.7x	6.6x	8.3x	6.9x	4.0x	4.2x	4.6x	4.3x	5.4x	5.0x
CFO Pre-W/C / Debt	24.2%	14.7%	21.6%	29.6%	36.6%	31.7%	17.5%	22.9%	24.6%	18.7%	24.6%	21.2%
RCF / Debt	25.1%	17.9%	20.8%	24.6%	27.7%	24.9%	17.8%	23.7%	23.2%	12.2%	17.5%	15.1%

[1] All figures & ratios calculated using Moody's estimates & standard adjustments. FYE = Financial Year-End. LTM = Last Twelve Months. RUR* = Ratings under Review, where UPG = for upgrade and DNG = for downgrade
Source: Moody's Financial Metrics

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Ratings

Exhibit 21

Category	Moody's Rating
VISTRA ENERGY CORP.	
Outlook	Positive
Corporate Family Rating	Ba1
Speculative Grade Liquidity	SGL-1
VISTRA OPERATIONS COMPANY LLC	
Outlook	Positive
Sr Sec Bank Credit Facility	Baa3/LGD3
Senior Secured	Baa3/LGD3
Senior Unsecured	Ba2/LGD5

Source: Moody's Investors Service

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Case No(s). 14-0482-EL-CRS

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