

# City of Vero Beach

## Firm Gas Transport Agreement Analysis

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July 2012



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## **1. FIRM GAS TRANSPORT AGREEMENTS**

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The City of Vero Beach ("Vero Beach" or the "City") is party to two (2) firm natural gas transportation agreements (together, the "Transport Agreements") with Florida Gas Transmission Company, LLC ("FGT"), which supply Vero Beach with firm natural gas pipeline capacity for the delivery of natural gas into the City.<sup>1</sup> FGT's pipeline originates in eastern Texas, travels through Louisiana, Mississippi and Alabama, along the Florida panhandle and terminates in south Florida.<sup>2</sup> The basic terms of the Transport Agreements include the following:

- Vero Beach's FTS-1 agreement allows for a maximum daily quantity ("MDQ") of 5,156 to 12,160 MMBtu, depending on the delivery month, and its primary term expires December 31, 2030; and
- Vero Beach's FTS-2 agreement allows for an MDQ of 8,000 MMBtu, and its primary term expires December 31, 2016.<sup>3</sup>

Edwards Wildman Palmer LLP ("EWP"), on behalf of Vero Beach, requested that PA Consulting Group, Inc. ("PA") opine on the fair market value ("FMV") of the Transport Agreements, in conjunction with the potential acquisition of Vero Beach's electric generation, transmission and distribution system by Florida Power and Light ("FPL").

Overall, PA estimates the value of the transport agreements is between \$10.8 and \$5.5 million, based on range of discount rates ranging from 4% to 14%. The range of discount rates reflects the weighted average cost of capital (WACC) for the universe of potential buyers. This includes municipal electric and cooperative utilities on the low end of the WACC range to financial institutions and Independent Power Producers on the high end of the WACC range. Specifically, PA has also calculated the expected value to Orlando Utilities Commission ("OUC") and Florida Power and Light ("FPL"), as they are two interested parties in the potential sale of the contracts. The low end of the WACC range underpins the value of the Transport Agreements to OUC (approx. \$10.8m), while the value to FPL would be \$10.0 million based on a 5% WACC.

The following memorandum outlines PA's methodology, assumptions and findings, which are all consistent with our standard approach to contract valuation.

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<sup>1</sup> It is important to understand that these agreements are for firm pipeline capacity only; natural gas commodity to be transported over the pipeline is purchased separately.

<sup>2</sup> The two Transport Agreements are for FTS-1 and FTS-2 service, respectively, where FTS is defined as Firm Transportation Service. The primary difference between FTS-1 and FTS-2 service is a trade-off between fixed reservation charges (FTS-1 fixed reservation costs are lower than FTS-2 fixed reservation costs) and variable usage costs (FTS-1 variable usage costs are higher than FTS-2 variable usage costs).

<sup>3</sup> Shippers (e.g., Vero Beach) have the right of first refusal to retain existing capacity at the expiration of the primary term of the contract.

## 1. Firm gas transport agreements

### 1.1 METHODOLOGY AND ASSUMPTIONS

The FMV of firm natural gas transportation contracts can be derived by analyzing the potential natural gas commodity price arbitrage opportunity between the contracted receipt and delivery points on the pipeline *minus* the fixed and variable charges associated with the firm gas transportation agreement. In short, the value of a given firm natural gas transportation contract is determined by the ability to “buy natural gas” at the agreement’s receipt point and “sell natural gas” at the agreement’s delivery point, relative to the cost of obtaining the ability to do so.

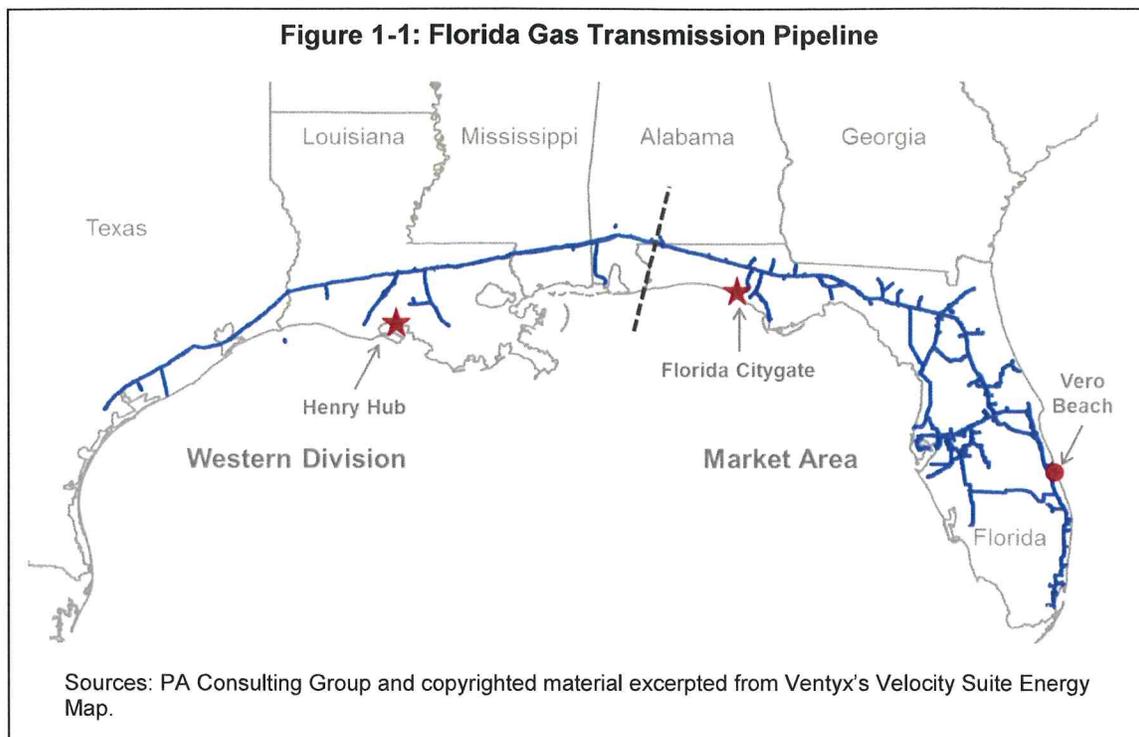
To determine the value of the arbitrage opportunity between the contracted receipt and delivery points, PA analyzed historical actual natural gas prices and employed its proprietary stochastic (e.g., volatility) model to analyze underlying natural gas price volatility and correlations between these two points. Using this model, PA analyzed the points in time in which price arbitrage opportunities have existed between the receipt and delivery points, and assumed that the contracted counterparty would liquidate natural gas into the Florida market to capture the available price margin during these times.<sup>4</sup>

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<sup>4</sup> As discussed in Section 1.2, limited liquidity in the Florida gas market may prevent realization of arbitrage value in all hours.

**1.1.1 Natural gas prices**

Under the Transport Agreements, the City has the firm right to transport gas from receipt points in the Western Division of FGT’s system to the delivery point, Vero Beach, in FGT’s Market Area. PA assumed Henry Hub prices as a proxy for receipt point prices and used Florida Citygate as a proxy for pricing at the delivery point. PA determined that Henry Hub’s close location to the Western Division of FGT’s system and the Hub’s deep liquidity made it an appropriate pricing hub for the receipt point. And, of the natural gas price hubs in Florida, PA determined that Florida Citygate is the closest hub to the delivery point and it has sufficient reported daily prices and adequate liquidity to use for this purpose.



PA’s analysis used natural gas price projections based on PA’s Henry Hub price forecast, and PA’s market-by-market view of demand seasonality and natural gas spot price basis differentials to the Henry Hub. PA’s Henry Hub price projections incorporate NYMEX futures contract prices, as of December 30, 2011, for 2012 and 2013. For 2014 and 2015 natural gas price projections are trended to a long-term consensus forecast commencing in 2016.<sup>5</sup> For this analysis, the Florida Citygate prices reflect historical seasonal variability and basis differentials to Henry Hub.

<sup>5</sup> Since the end of 2011, near- and long-term forwards and projections for natural gas commodity prices have declined; for example, as of May 30, 2012, 2013 Calendar Year Henry Hub gas price forwards have declined approximately \$0.30/MMBtu, or approximately 8%) relative to December 30, 2011 . At the same time, the projected price at Florida Citygate has fallen almost as much. As a result, though overall natural gas prices have fallen since the end of 2011, these changes have a minimal impact on the value of the Transport Agreements due to the fact that PA’s analysis analyzes the arbitrage opportunity between the FTS contracted receipt and delivery points (see this Section 1.1 for a discussion on methodology); on average, the projected delta between the two arbitrage points has narrowed by approximately \$0.01/MMBtu since the end of 2011.

1. Firm gas transport agreements



**Table 1-1: Projected Annual Henry Hub & Florida Citygate Prices as of 12/30/2011 (nominal \$/MMBtu)**

	Henry Hub	Florida Citygate
2012	3.24	3.54
2013	3.94	4.32
2014	4.56	5.00
2015	5.29	5.80
2016	6.13	6.72
2017	6.32	6.93
2018	6.45	7.07
2019	6.63	7.26
2020	6.87	7.53
2021	7.16	7.85
2022	7.48	8.20
2023	7.78	8.53
2024	8.12	8.90
2025	8.47	9.28
2026	8.76	9.60
2027	9.08	9.95
2028	9.39	10.29
2029	9.73	10.67
2030	10.01	10.98
2031	10.31	11.30
2032	10.49	11.50
2033	10.68	11.71
2034	10.87	11.92
2035	11.07	12.13
2036	11.27	12.35

Sources: PA Consulting Group analysis, Ventyx's Energy Velocity Suite and Platts, The McGraw-Hill Companies Inc.

## 1. Firm gas transport agreements

### 1.1.2 Transport Agreement charges

As is the case with all interstate pipelines in the United States, FGT publishes tariff rates for various service types (e.g., firm and interruptible) over its pipeline. In particular, the current tariffs for FTS-1 and FTS-2 service are found in the FERC Gas Tariff of Florida Gas Transmission Company, LLC, Fifth Revised Volume No. 1.<sup>6</sup> Key tariff components for these two agreements are shown in Table 1-2.

**Table 1-2: FGT Tariff Components (nominal \$)**

Charge	FTS-1	FTS-2
Reservation Charge (\$/MMBtu reserved capacity)	0.4694	0.7185
Usage Charge (\$/MMBtu shipped)	0.0256	0.0076
ACA Charge (\$/MMBtu shipped)	0.0018	0.0018
Fuel Reimbursement Charge	3.01%	3.01%

Source: FERC Gas Tariff of Florida Gas Transmission Company, LLC, Fifth Revised Volume No. 1

In general, the cost components of the FTS-1 and FTS-2 tariffs can be placed into two “buckets”:

- **Fixed Charges:** The reservation charge, which must be paid by the counterparty to FGT based on the applicable contracted MDQ, regardless of whether or not the pipeline capacity is actually used; and
- **Variable Charges:** Includes the usage charge, ACA<sup>7</sup> surcharge and fuel reimbursement charge, and only apply if the contracted pipeline capacity is used to transport natural gas.

Based on PA’s analysis and other market knowledge available to PA, the current tariff rates,<sup>8</sup> with the exception of the fuel reimbursement charge, are assumed to remain constant going-forward on a nominal dollar basis. The fuel reimbursement charge will fluctuate depending on the underlying price of natural gas.

<sup>6</sup> As of the date of this analysis (February 2012), the current tariffs are Version 5.0.0, and can be found at [http://infopost.panhandleenergy.com/InfoPost/jsp/FGT\\_frameSet.jsp?pipe=fgt](http://infopost.panhandleenergy.com/InfoPost/jsp/FGT_frameSet.jsp?pipe=fgt).

<sup>7</sup> Annual Charge Adjustment (“ACA”) is a surcharge permitted by Section 154.38 (d) (6) of the FERC’s Regulations permitting interstate pipeline companies to recover all Total Annual Charges assessed to them by FERC.

<sup>8</sup> With the exception of the fuel reimbursement charge percentage, which is updated semi-annually, there is no fixed schedule for the adjustment of transport rates. Since 2005 Florida Gas Transmission Company has had one rate case, filed in October 2010, addressing transport rates.

1. Firm gas transport agreements

1.2 RESULTS

Based on the methodology and assumptions outlined in the previous section, PA calculated the expected arbitrage value associated with buying gas at the Transport Agreements' receipt point and selling gas at the delivery point, as well as the fixed and variable costs associated with the firm rights to move gas from the receipt point to the delivery point as desired. The result of these calculations (shown in Appendix A) is a forecast of expected cash flows associated with the Transport Agreements.

In performing these calculations PA has limited the realized arbitrage opportunities to periods of high natural gas usage in the power sector only, given the historically limited market liquidity in the Florida natural gas market. PA believes this assumption to be reasonable yet conservative, and it produces a reasonable range of expected cash flows for the Transport Agreement.<sup>9</sup>

PA calculated the FMV of the Transport Agreements to be \$10.8 to \$5.5 million based on the present value of these expected future cash flows using a range of discount rates from 4% to 14%. The range of discount rates reflects the WACC range for the universe of potential buyers. This includes municipal electric and cooperative utilities on the low end of the WACC range to financial institutions and Independent Power Producers on the high end of the WACC range. Specifically, PA has also calculated the expected value to OUC and FPL as they are two interested parties in the potential sale of the contracts. The low end of the WACC range underpins the value to OUC (approx. \$10.8m), while the value to FPL would be \$10.0 million based on a 5% WACC.

**Table 1-3: Contract Values by WACC (millions \$)**

	4%	14%
FTS-1	8.9	4.0
FTS-2	1.9	1.5
Total	10.8	5.5

Source: PA Consulting Group analysis.

<sup>9</sup> It should be noted that PA has not analyzed market sensitivities as part of this analysis. However, it is possible that certain scenarios could lead to increased price volatility and liquidity in the Florida natural gas market (including the addition of significant gas-fired generating capacity by Florida electric utilities), which may lead to a FMV between the "on-peak only" and "all-hours" valuation ranges.

## APPENDIX A: DETAILED RESULTS

This section provides detailed proformas of PA's projections.

**Table A-1 (a): FTS-1 Contract Cash Flow Projections (2012 – 2021) (nominal \$)**

Units	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
<b>Operations</b>											
Capacity	MMBtu/day	8,057	8,057	8,057	8,057	8,057	8,057	8,057	8,057	8,057	
<b>Gas transport decision</b>											
Henry Hub price	\$/MMBtu	3.24	3.94	4.56	5.29	6.13	6.32	6.45	6.63	6.87	7.16
Florida Citygate price	\$/MMBtu	3.54	4.32	5.00	5.80	6.72	6.93	7.07	7.26	7.53	7.85
Commodity Rate (includes ACA)	\$/MMBtu	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
Fuel Reimbursement Charge	% of flow	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%
<b>Variable Marketing Margin</b>											
Variable marketing margin	\$'000	289	370	460	538	629	649	663	682	709	740
<b>Fixed Expense</b>											
Reservation charge	\$/MMBtu	0.469	0.469	0.469	0.469	0.469	0.469	0.469	0.469	0.469	0.469
Expense	\$'000	21	21	21	21	21	21	21	21	21	21
<b>Total Margin</b>	<b>\$'000</b>	<b>268</b>	<b>349</b>	<b>439</b>	<b>516</b>	<b>607</b>	<b>628</b>	<b>642</b>	<b>661</b>	<b>688</b>	<b>719</b>

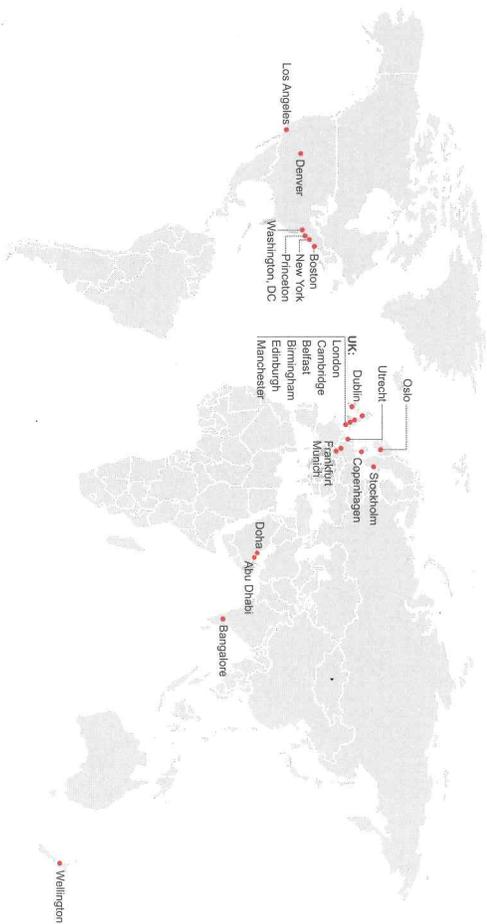
Source: PA Consulting Group analysis.

**Table A-1 (b): FTS-1 Contract Cash Flow Projections (2021 – 2030) (nominal \$)**

Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Operations</b>										
Capacity	MMBtu/day	8,057	8,057	8,057	8,057	8,057	8,057	8,057	8,057	
<b>Gas transport decision</b>										
Henry Hub price	\$/MMBtu	7.48	7.78	8.12	8.47	8.76	9.08	9.39	9.73	10.01
Florida Citygate price	\$/MMBtu	8.20	8.53	8.90	9.28	9.60	9.95	10.29	10.67	10.98
Commodity Rate (includes ACA)	\$/MMBtu	0.0274	0.0274	0.0274	0.0274	0.0274	0.0274	0.0274	0.0274	0.0274
Fuel Reimbursement Charge	% of flow	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%	3.01%
<b>Variable Marketing Margin</b>										
Variable marketing margin	\$'000	774	806	843	881	912	946	980	1,016	1,047
<b>Fixed Expense</b>										
Reservation charge	\$/MMBtu	0.469	0.469	0.469	0.469	0.469	0.469	0.469	0.469	0.469
Expense	\$'000	21	21	21	21	21	21	21	21	21
<b>Total Margin</b>	<b>\$'000</b>	<b>752</b>	<b>785</b>	<b>822</b>	<b>859</b>	<b>890</b>	<b>925</b>	<b>959</b>	<b>995</b>	<b>1,026</b>

Source: PA Consulting Group analysis.

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