

**BEFORE THE  
FLORIDA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 13 0198 -EI  
FLORIDA POWER & LIGHT COMPANY**

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**IN RE: PETITION FOR PRUDENCE  
DETERMINATION REGARDING NEW PIPELINE  
SYSTEM**

**DIRECT TESTIMONY & EXHIBITS OF:**

**TIMOTHY C. SEXTON**

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**JULY 26, 2013**

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1 I. INTRODUCTION

2  
3 **Q. Please state your name and business address.**

4 A. My name is Timothy C. Sexton. My business address is 14811 St. Mary's,  
5 Suite 175, Houston, TX 77079.

6 **Q. By whom are you currently employed and what position do you hold with**  
7 **that company?**

8 A. I am President of Gas Supply Consulting, Inc. ("GSC").

9 **Q. On whose behalf are you testifying in this proceeding?**

10 A. I am testifying on behalf of Florida Power & Light Company ("FPL" or  
11 "Company"), which I understand is seeking a determination in this proceeding  
12 that its selection of projects to meet its gas transportation requirements is  
13 prudent.

14 **Q. Please describe your education, background and qualifications.**

15 A. I have been actively involved in the natural gas business for approximately 24  
16 years. I received a Bachelor of Science degree in Civil Engineering from the  
17 University of Texas in May 1989 and a Masters in Business Administration  
18 from the University of Houston in August 1993. I am also a licensed  
19 professional engineer in the state of Texas. I have been with GSC since June  
20 1994. Prior to that, I was employed by Koch Gateway Pipeline Company  
21 (formerly United Gas Pipeline Company and currently Gulf South Pipeline  
22 Company) in various engineering, operations, planning and marketing  
23 positions of increasing responsibility culminating in the position of Regional

1           Manager of Supply Services. Upon arrival at GSC, I held the position of  
2           Associate from 1994 through 2006, Vice President from 2006 through 2011  
3           and have been President since January 2012. Exhibit TCS-1 is a copy of my  
4           resume.

5           **Q. What are the primary business functions of GSC?**

6           A. The company's core business is providing natural gas related consulting  
7           services for clients in various segments of the natural gas industry. GSC  
8           clients include local distribution companies, electric power generators, end-  
9           users, producers, LNG importers and exporters, midstream transporters,  
10          customer groups and other participants in the natural gas industry.

11          **Q. What type of consulting services does GSC typically provide for its  
12          clients?**

13          A. Our core services include: gas supply planning, including the design of service  
14          and supply portfolios; evaluation of service alternatives, including  
15          opportunities to introduce competition; evaluations of adequacy of pipeline  
16          facilities to meet demand requirements; natural gas pipeline contingency and  
17          reliability analyses; evaluation of pipeline expansion project alternatives;  
18          performance of natural gas pipeline steady state and transient flow simulation  
19          model analyses; preparation of pipeline engineering evaluations and cost  
20          estimates; design and implementation of supply related risk management  
21          programs; evaluations related to optimizing the value of contracted supplies  
22          and services; performance of energy purchasing audits; negotiation of term

1 firm supplies; and negotiation of upstream transportation, storage and  
2 balancing services.

3 **Q. Have you previously provided natural gas related consulting services on**  
4 **behalf of clients in the state of Florida?**

5 A. With respect to the Florida marketplace, I have performed numerous functions  
6 on behalf of FPL on various assignments since 1998. These assignments  
7 generally focused on assessment of the Florida pipeline infrastructure and its  
8 ability to meet the needs of FPL generation expansions at various proposed  
9 locations. I have also been engaged by the Florida Reliability Coordinating  
10 Commission (“FRCC”) since 2005 as a consultant to the FRCC’s “Fuel  
11 Reliability Working Group” in which my role is to evaluate and monitor the  
12 reliability of the fuel supply infrastructure serving the state of Florida.  
13 Finally, I have directed the development of natural gas supply and capacity  
14 portfolios on behalf of two industrial clients with facilities in the state of  
15 Florida.

16

17 **II. PURPOSE OF TESTIMONY AND EXHIBITS**

18

19 **Q. What is the purpose of your testimony?**

20 A. The purpose of my testimony is to:

21 (i) review the need for incremental natural gas pipeline capacity to serve  
22 future power generation fuel requirements of FPL;

1 (ii) evaluate the Request for Proposals (“RFP”) process undertaken by FPL to  
2 assess alternatives in meeting incremental natural gas pipeline capacity  
3 demand;  
4 (iii) compare the benefits provided by each of the proposed Northern and  
5 Southern Pipeline Projects received in response to the capacity RFP; and  
6 (iv) evaluate FPL’s conclusion that the best means of providing the needed  
7 incremental new transportation capacity required to meet forecasted natural  
8 gas fired generation requirements in 2017 and beyond is the combination of  
9 the (a) Sabal Trail Transmission, LLC (“Sabal Trail”) project proposed by  
10 Spectra Energy Corp. as the Northern Pipeline Project and (b) the Florida  
11 Southeast Connection, LLC (“FSC”) project, proposed by FPL’s self-build  
12 development team as the Southern Pipeline Project.

13 **Q. Are you sponsoring any exhibits in this proceeding?**

14 A. I am sponsoring the following exhibits which are attached to my direct  
15 testimony:

- 16 • **TCS-1** Resume of Timothy C. Sexton
- 17 • **TCS-2** Florida Pipeline Capacity Load Factor Calculation
- 18 • **TCS-3** Illustrative Map of (a) Pipelines on which FPL holds Firm  
19 Transportation Service Capacity and (b) the Transco System
- 20 • **TCS-4** Mobile Bay Area Pipeline Connectivity
- 21 • **TCS-5** Schematic Illustration entitled Capacity to Southeast Markets
- 22 • **TCS-6** Operational Map of Transco System per Transco EBB
- 23 • **TCS-7** Projected Growth in Shale Gas Production





- 1 (a) The existing pipeline infrastructure does not provide sufficient capacity to  
2 meet FPL's and the state of Florida's projected future natural gas  
3 requirements;
- 4 (b) New pipeline infrastructure will need to be constructed to meet FPL's  
5 future natural gas demand as well as growing third party natural gas  
6 demand in Florida;
- 7 (c) FPL would be well served to continue expanding its natural gas supply  
8 access beyond its traditional onshore Gulf Coast and offshore Gulf of  
9 Mexico sources;
- 10 (d) The RFP process utilized by FPL was an effective method of analyzing  
11 pipeline alternatives available to meet FPL's future natural gas demand  
12 requirements;
- 13 (e) FPL evaluated the various proposals received in response to its RFP  
14 process in an objective, prudent and fair manner; and
- 15 (f) FPL has made the correct choice in determining that the combination of  
16 the Sabal Trail and FSC projects is the best alternative to add needed  
17 natural gas pipeline infrastructure to meet the needs of FPL's customers.

18 **Q. Please describe the Sabal Trail project that FPL has selected as the**  
19 **Northern Pipeline Project.**

20 A. The Sabal Trail project consists of (a) a lease of incremental pipeline  
21 transportation capacity on the Transcontinental Gas Pipe Line Company, LLC  
22 ("Transco") system from its Station 85 to a point near its Station 105 near  
23 Hillabee, Alabama in Transco's Zone 4; and (b) an approximate 465 mile 36-

1 inch pipeline extending from the proposed interconnection with Transco near  
2 Station 105 to its terminus at an interconnection in Osceola County, Florida  
3 with the proposed FSC project. The Sabal Trail project also includes the  
4 construction of the “Central Florida Hub,” at which hub wheeling services  
5 will be provided among the connected pipelines.

6 **Q. Please describe the Central Florida Hub.**

7 A. The Central Florida Hub, to be constructed and operated by Sabal Trail, will  
8 consist of: (a) a bi-directional interconnection between the Sabal Trail project  
9 and Florida Gas Transmission Company, LLC (“FGT”) including a 36”  
10 connecting lateral from the terminus of the Sabal Trail project mainline to the  
11 FGT mainline; (b) a bi-directional interconnection between the Sabal Trail  
12 project and Gulfstream Natural Gas System LLC (“Gulfstream”); (c) a  
13 delivery interconnection from the Sabal Trail project to the FSC project; and  
14 (d) hub compression as required. Sabal Trail will provide wheeling services  
15 at the Central Florida Hub which will enable FPL and other third party  
16 shippers to wheel natural gas supplies from or to any connected pipeline at the  
17 Central Florida Hub. As discussed in more detail herein, the Central Florida  
18 Hub is expected to increase supply reliability and market liquidity for FPL as  
19 well as for all natural gas consumers in the state of Florida.

20 **Q. Please describe the FSC project.**

21 A. The FSC project consists of an approximate 126 mile pipeline extending from  
22 its proposed interconnection with the Sabal Trail project at the Central Florida  
23 Hub to its terminus at its interconnection with FPL’s Martin plant and Riviera

1 Beach plant lateral located in Martin County Florida. FPL's self-build team  
2 provided alternative pipeline design options including a 30" pipeline project, a  
3 36" pipeline project and a hybrid 30"/36" project. As will be discussed in  
4 more detail herein, FPL's RFP evaluation team determined that the hybrid  
5 project provides the best solution to meet the Company's long term gas  
6 demand requirements and as such, has elected to move forward with the  
7 hybrid alternative as the FSC project. The selected hybrid project consists of  
8 a 36" pipeline from the Central Florida Hub to approximately mile post 77 of  
9 the project and then transitions to a 30" pipeline from mile post 77 to its  
10 terminus at FPL's Martin plant.

### 11

### 12 III. EXISTING GAS PIPELINE INFRASTRUCTURE

### 13

14 **Q. Please identify pipelines that deliver natural gas into the state of Florida.**

15 A. Currently, natural gas supplies are delivered into the state of Florida by four  
16 interstate pipeline systems. These pipelines include FGT, Gulfstream,  
17 Southern Natural Gas Company's Cypress Pipeline system ("Cypress") and  
18 Gulf South Pipeline Company, L.P. ("Gulf South"). Cypress has direct  
19 deliveries only to markets in the Jacksonville area, and Gulf South provides  
20 direct deliveries only to markets in the Pensacola area. Only FGT and  
21 Gulfstream operate pipeline systems that extend broadly into various markets  
22 within the state of Florida and they provide approximately 90 percent of the  
23 gas transportation capacity available into the state.

1       **Q.    Please provide a brief overview of natural gas transportation capacity**  
2       **into Florida via the Gulfstream and FGT systems.**

3       **A.**    FGT has the capacity to transport approximately 3.07 Bcf/day into Florida,  
4       and Gulfstream has the capacity to transport about 1.30 Bcf/day into Florida.  
5       Consequently, the total transportation capacity into Florida via these two  
6       pipelines is about 4.37 Bcf/day.

7       **Q.    Please provide a description of the FGT system.**

8       **A.**    FGT's system extends from South Texas through Texas, Louisiana,  
9       Mississippi and Alabama to its Florida markets. The system is designed to  
10      gather natural gas at supply area interconnects within its Western Division  
11      upstream of the Florida/Alabama state line (i.e., supplies received in Texas,  
12      Louisiana, Mississippi and Alabama) for delivery to markets within its Market  
13      Area in the state of Florida. As stated above, FGT's pipeline system currently  
14      has the capacity to transport about 3.07 Bcf/day of gas supplies into Florida  
15      from Western Division receipt points.

16      **Q.    Please provide a description of the Gulfstream system.**

17      **A.**    Gulfstream's system is designed to gather natural gas from various receipt  
18      points in the Mobile Bay Area to its mainline compressor station near Coden,  
19      Alabama. The system extends from the Coden Compressor Station across the  
20      Gulf of Mexico to an onshore landing in the state of Florida near Manatee,  
21      Florida. Gulfstream then extends from its onshore landing to various delivery  
22      points in Florida and terminates at its delivery point to FPL's West County

1 Energy Center in Palm Beach County, Florida. Gulfstream has a design  
2 capacity of approximately 1.30 Bcf/day into Florida.

3 **Q. Please summarize FPL's contractual firm transportation capacity rights**  
4 **on FGT and Gulfstream.**

5 A. As discussed in the testimony of FPL witness Forrest, FPL currently has  
6 1,274,000 MMBtu/day (approximately 1.27 Bcf/day) of firm transportation  
7 capacity on the FGT system and has 695,000 MMBtu/day (approximately 695  
8 MMcf/day) of firm transportation capacity on Gulfstream.

9 **Q. Does FPL hold firm transportation capacity on Gulf South or Cypress**  
10 **with delivery rights within the state of Florida?**

11 A. No. Since the Gulf South and Cypress systems are not configured to provide  
12 deliveries directly to FPL markets in the state of Florida, FPL has no firm  
13 transportation capacity on either Cypress or Gulf South with delivery rights in  
14 Florida.

15 **Q. Is firm interstate capacity in Florida constrained today?**

16 A. Yes. Per FGT's Electronic Bulletin Board, available unsubscribed firm  
17 transportation capacity on the FGT system totals about 184 MMcf/day for the  
18 peak summer months during 2017. Further, the Gulfstream system is fully  
19 subscribed with no firm transportation capacity available during the summer  
20 months. As such, total capacity on these two pipelines is about 96%  
21 subscribed during the peak 2017 summer season with minimal capacity  
22 available to meet incremental demand growth in the state.

1       **Q.    Is a significant portion of the firm capacity into the state of Florida**  
2       **underutilized and available for sale in the secondary market under non-**  
3       **peak day conditions?**

4       A.    No. The Florida market, with gas usage dominated by electric generation, is a  
5       high load factor market. In fact, based upon data compiled by the Energy  
6       Information Administration (“EIA”) of the United States Department of  
7       Energy, and listed in the table of Florida Natural Gas Consumption at:  
8       [http://tonto.eia.doe.gov/dnav/ng/ng\\_cons\\_sum\\_dcu\\_SFL\\_m.htm](http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_dcu_SFL_m.htm), over the last  
9       three calendar years (2010 through 2012) about 87 percent of total gas  
10      consumption in Florida was to support electric generation. As depicted in the  
11      table attached as Exhibit TCS-2, a comparison of natural gas consumption  
12      versus capacity into the state reveals that capacity into the state was utilized at  
13      an average load factor of about 82 percent of available design capacity during  
14      the summer months of June through September 2012.

15  
16      Specific to FPL, utilization is even higher with the Company utilizing its firm  
17      transportation service capacity on Gulfstream and FGT at an average load  
18      factor of approximately 96% of contracted firm capacity during this same  
19      peak demand period of June through September 2012.

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1       **Q.    In summary, is there capacity available via the existing natural gas**  
2       **pipeline infrastructure in Florida to support substantial incremental firm**  
3       **natural gas demand?**

4       A.    No. As detailed above, the existing infrastructure is 96% subscribed on a  
5       long-term firm contractual basis, and there is minimal existing pipeline  
6       capacity available in the state to be contracted on a long-term firm basis. To  
7       put this in perspective, the total of 184 MMcf/day of firm capacity available  
8       during the 2017 peak summer season equates to approximately 4% of current  
9       peak daily capacity into the state. Moreover, this capacity will likely no  
10      longer be available in the 2017 timeframe in which FPL seeks to acquire  
11      additional pipeline capacity. This is especially the case given that annual  
12      natural gas consumption in the state of Florida has grown at an average 8%  
13      per year rate during the past five years.

14  
15                                   **IV.    CURRENT FLORIDA NATURAL GAS SUPPLY MIX**

16  
17      **Q.    Please provide a description of the natural gas supply mix accessible via**  
18      **the FGT system.**

19      A.    Within its Western Division, the portion of FGT's system upstream of its  
20      Compressor Station 10 in Perry County, Mississippi serves to gather gas  
21      supplies from traditional onshore Gulf Coast and offshore Gulf of Mexico  
22      sources and has a design capacity to gather and transport about 1.33 Bcf/day  
23      of gas supplies. This capacity upstream of FGT's Station 10 represents a little

1 over 40% of the total 3.07 Bcf/day of FGT's maximum capacity into the state  
2 of Florida. As a result, in order to transport this 3.07 Bcf/day design capacity  
3 into Florida, nearly 60% (about 1.74 Bcf/day) of gas supplies must be  
4 received into FGT between its Compressor Station 10 and the Florida border  
5 in and around the Mobile Bay Area.

6 **Q. Please provide a description of the gas supply mix accessible via**  
7 **Gulfstream.**

8 A. Gulfstream receives one hundred percent of the gas supply into its system  
9 from pipeline interconnection points in and around the Mobile Bay Area.  
10 Thus, the full 1.30 Bcf /day of supply required into Gulfstream under design  
11 day conditions currently must be received into Gulfstream from Mobile Bay  
12 Area receipt points.

13 **Q. In summary, what is the overall supply mix available to the Florida**  
14 **market via FGT and Gulfstream?**

15 A. As discussed above, FGT provides access to receipts into its system of  
16 approximately 1.33 Bcf/day of traditional onshore Gulf Coast and offshore  
17 Gulf of Mexico supply sources and 1.74 Bcf/day of receipts into its system in  
18 and around the Mobile Bay Area and Gulfstream has its entire 1.30 Bcf/day of  
19 receipt capacity in and around the Mobile Bay Area. In summary, these two  
20 pipelines provide the Florida market with access to 1.33 Bcf/day of traditional  
21 Gulf Coast and offshore Gulf of Mexico supply sources and 3.04 Bcf/day of  
22 receipts in and around the Mobile Bay Area.



1       **Q.    Please summarize FPL's current supply access rights on Gulfstream and**  
2       **FGT.**

3       A.    FPL's primary receipt point rights on FGT include approximately 812  
4       MMcf/day of receipts from points within FGT's Zone 3 in and around the  
5       Mobile Bay Area and approximately 462 MMcf/day of receipts within FGT's  
6       Zones 1 and 2 from traditional Gulf of Mexico supply locations.  Further,  
7       FPL's primary receipt point rights on Gulfstream include approximately 695  
8       MMcf/day of receipts from Mobile Bay Area points.  In total, FPL has firm  
9       access to about 1.51 Bcf/day of Mobile Bay Area supply and about 0.46  
10       Bcf/day of traditional Gulf Coast / Gulf of Mexico supply.  As Gulfstream  
11       does not provide direct access to supplies upstream of the Mobile Bay Area  
12       and as FGT's on-system capacity is fully subscribed from receipt points  
13       upstream of the Mobile Bay area to delivery points in Florida, FPL's ability to  
14       access supplies upstream of the Mobile Bay area has become constrained and  
15       is limited to quantities available for delivery into FGT or Gulfstream from  
16       upstream connected pipelines.

17  
18       Exhibit TCS-3 provides an illustration of the locations of (a) the pipeline  
19       systems on which FPL has contracted for firm transportation service capacity  
20       and (b) the Transco pipeline system discussed herein.

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1       **Q.    What is the production outlook for offshore Gulf of Mexico supplies in**  
2       **the future?**

3       A.    Offshore natural gas production in the Gulf of Mexico has declined  
4       significantly over the past several years. In fact, a review of data published by  
5       the EIA reveals that U.S. offshore production declined from a peak of about  
6       5.1 Tcf in 1997 to a low of about 2.0 Tcf in 2011. As to future production  
7       levels, within its recently published Annual Energy Outlook for 2013, EIA  
8       projects that offshore Gulf of Mexico production levels will remain flat at the  
9       current reduced levels with annual offshore Gulf of Mexico natural gas  
10      production levels ranging from about 1.8 Tcf to about 2.6 Tcf during each  
11      year through 2040.

12      **Q.    Are forecasts for natural gas production in Mobile Bay consistent with**  
13      **Gulf of Mexico forecasts?**

14      A.    Yes. EIA Production forecasts for Gulf of Mexico production includes gas  
15      produced in Mobile Bay area fields. In addition, deepwater gas that flows into  
16      Mobile Bay area pipelines is also included in the deep water Gulf of Mexico  
17      production data. As a result, data specific to Alabama State Offshore  
18      production fields indicates a decline in production consistent with that for the  
19      overall shallow water Gulf of Mexico production. In fact, according to EIA  
20      data, Alabama State Offshore production peaked at a level of 222 Bcf/year in  
21      1998 and has steadily declined since to a level of just 84 Bcf/year in 2011.

22  
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1       **Q.    Has the demand for Mobile Bay area sourced supplies increased in the**  
2       **recent past?**

3       A.    Yes.  On April 1, 2011 FGT placed its Phase VIII expansion project in  
4       service.  This project added about 821 MMcf/day of pipeline capacity to the  
5       FGT system with one hundred percent of the project receipts in the Mobile  
6       Bay area.  In addition, between 2008 and 2011, Gulfstream placed its Phases  
7       III, IV and V expansion projects in service with these three projects supported  
8       by a combined 535 MMcf/day in firm transportation capacity contracts with  
9       receipts in the Mobile Bay Area.  These expansion projects have added  
10      significantly to the demand for supplies in the Mobile Bay Area.

11      **Q.    How has the market reacted to this increasing demand for natural gas**  
12      **supply coupled with decreasing traditional supply availability in the**  
13      **Mobile Bay Area?**

14      A.    In order to meet the increasing demand for natural gas supply in the Mobile  
15      Bay Area, market participants have entered into upstream transportation  
16      service agreements that have resulted in the construction of the Southeast  
17      Supply Header (“SESH”) and two southbound expansions of Transco’s 4A  
18      lateral (Mobile Bay South and Mobile Bay South II expansion projects).  
19      These projects were designed to transport incremental natural gas supplies to  
20      the Mobile Bay area to meet the increasing demand for supply at this location.  
21      Most recently, market participants have entered into agreements supporting  
22      the proposed construction of Gulf South’s Southeast Market Expansion  
23      Project.  In March, 2013, Gulf South submitted an application to the Federal

1 Energy Regulatory Commission (“FERC”) for a certificate to construct this  
2 project and has a targeted project in-service date of November 1, 2014.

3 **Q. Please provide a description of SESH and natural gas supplies accessible**  
4 **via SESH.**

5 A. SESH was placed into service during the fall of 2008 and consists of 274  
6 miles of 42 and 36-inch pipeline extending from the Perryville Hub in  
7 Northern Louisiana to its terminus at its interconnection with Gulfstream in  
8 Coden, Alabama. The pipeline has a maximum transportation capacity of  
9 about 1.025 Bcf/day. One hundred percent of this 1.025 Bcf/day of pipeline  
10 capacity is currently subscribed under long-term firm transportation  
11 agreements. As such, while SESH has provided a needed addition of supply  
12 diversity into Gulfstream and FGT in the Mobile Bay area, the pipeline, as  
13 currently configured, is sold out and unavailable to provide incremental  
14 supply to the Florida market.

15 **Q. Does FPL have any contracted capacity on SESH?**

16 A. Yes. FPL has firm contractual rights of approximately 580 MMcf/day (more  
17 than half of the total SESH capacity) from the Perryville Hub to Gulfstream  
18 and FGT in the Mobile Bay area.

19 **Q. Please provide a description of the Transco 4A Lateral and natural gas**  
20 **supplies accessible via the 4A Lateral.**

21 A. Transco’s 4A Lateral is an approximately 123 mile 30-inch pipeline from  
22 Transco’s Station 85 to the Mobile Bay area. After the construction of the  
23 aforementioned Mobile Bay South and Mobile Bay South II expansion

1 projects, it is now capable of transporting about 633.5 MMcf/day from Station  
2 85 to Gulfstream and FGT in the Mobile Bay Area. One hundred percent of  
3 this southbound capacity is subscribed under long term contracts (through  
4 2025 and/or 2026).

5 **Q. Does FPL have any contracted firm transportation capacity on Transco's**  
6 **4A lateral?**

7 A. Yes. FPL Currently holds a total of about 200,000 MMBtu/day (about 200  
8 MMcf/day) of capacity on Transco's 4A lateral from Transco's Compressor  
9 Station 85 to the FGT and Gulfstream interconnect points in the Mobile Bay  
10 area. With this said, however, agreements associated with 78,500  
11 MMBtu/day (about 78.5 MMcf/day) of this capacity will expire in April 2016  
12 with the remaining 121,500 MMBtu/day (about 121.5 MMcf/day) scheduled  
13 to expire in 2026.

14 **Q. Please provide a description of Gulf South's Southeast Market Expansion**  
15 **Project and natural gas supplies accessible via the project.**

16 A. Gulf South's Southeast Market Expansion Project is designed as an integrated  
17 expansion of the Gulf South system that will transport new shale gas supplies  
18 produced in Texas, Oklahoma and Louisiana to markets in the Southeast  
19 including to a proposed interconnect with FGT in FGT's Zone 3 in George  
20 County, Mississippi. Per Gulf South's FERC Certificate Application, the  
21 project is supported by binding precedent agreements with customers for  
22 510,000 MMBtu/day (approximately 510 MMcf/day) of firm transportation  
23 service capacity.

1       **Q.    Please summarize pipeline capacities constructed into the Mobile Bay**  
2       **Area over the past few years.**

3       A.    Exhibit TCS-4 provides a schematic illustration of locations and delivery  
4       capacities of the SESH Pipeline, Transco's 4A lateral and Gulf South's  
5       Southeast Market Expansion project into the Mobile Bay Area as well as  
6       locations and takeaway capacities of the FGT and Gulfstream systems from  
7       the Mobile Bay Area.

8       **Q.    Does Gulf South's Southeast Market Expansion Project provide any**  
9       **insight as to supply availability in the Mobile Bay Area.**

10      A.    Yes. As mentioned in Gulf South's Certificate Application, this project is a  
11      "market-pull" project with contracted customers consisting of electric power  
12      generators and industrial end-users. The fact that the market is continuing to  
13      support the construction of pipeline facilities to deliver new supplies to FGT  
14      within its Zone 3 is an indication that locally produced supplies are not  
15      adequate to meet customer demand absent such upstream facility expansions.

16      **Q.    Does FPL have any contracted capacity on Gulf South's Southeast**  
17      **Market Expansion Project?**

18      A.    Yes. FPL has executed a precedent agreement for 200,000 MMBtu/day  
19      (approximately 200 MMcf/day) of firm transportation capacity on Gulf  
20      South's Southeast Market Expansion project to Gulf South interconnections  
21      with FGT and Gulfstream in the Mobile Bay Area. Further, this capacity  
22      contract provides FPL with receipt point rights of 100,000 MMBtu/day of  
23      capacity from the Perryville Hub and 100,000 MMBtu/day of capacity to

1 points upstream of Perryville in the Carthage area in East Texas. In addition,  
2 FPL has acquired an incremental 145,000 MMBtu/day of firm “summer only”  
3 capacity on Gulf South with receipt rights in the Carthage area and delivery  
4 rights to FGT and Gulfstream in the Mobile Area. However, this contract  
5 expires in 2017.

6 **Q. Please provide a description of natural gas available at the Perryville**  
7 **Hub.**

8 A. In addition to receiving traditional Gulf of Mexico production, via upstream  
9 connected pipelines the Perryville Hub also receives supplies of natural gas  
10 from the Barnett Shale in Texas, the Haynesville Shale in North Louisiana and  
11 East Texas, from traditional Cotton Valley supply sources in the Carthage  
12 Area of East Texas, the Woodford Shale in Southeastern Oklahoma and the  
13 Fayetteville Shale in Northeast Arkansas. FPL is able to access those sources  
14 using its existing capacity on SESH and its future capacity on Gulf South’s  
15 Southeast Market Expansion Project. However, FPL’s long term gas  
16 transportation rights on SESH and Gulf South to this area are limited to a total  
17 of about 0.78 Bcf/day and, with both SESH and the Southeast Market  
18 Expansion project fully contracted; these projects do not provide FPL with an  
19 opportunity to expand these rights absent additional facility expansions.

20  
21  
22  
23

1       **Q.     Taking into account FPL’s capacity on SESH, Transco’s 4A Lateral and**  
2       **Gulf South, please summarize long term natural gas supply access**  
3       **available to FPL via its connected pipelines.**

4       A.     As stated previously in my testimony, FPL’s primary receipt point rights on  
5       FGT and Gulfstream include about 1.51 Bcf/day of Mobile Bay Area receipts  
6       and 0.46 Bcf/day of traditional onshore and offshore Gulf of Mexico Area  
7       receipts. Summing its long term capacity rights on SESH, the Transco 4A  
8       lateral and Gulf South (i.e., excluding the capacity set to expire in the next  
9       few years of 78.5 MMcf/day on the 4A lateral and 145 MMcf/day of seasonal  
10      capacity on Gulf South), FPL holds long term firm capacity of 901,500  
11      MMBtu/day (about 901.5 MMcf/day) that provides access to supply sources  
12      upstream of the Mobile Area into FGT and Gulfstream. As such, in the longer  
13      term, FPL’s supply mix will consist of about (a) 0.90 Bcf/day available from  
14      upstream sources via third party pipeline systems; (b) 0.61 Bcf/day from  
15      Mobile Bay Area receipts absent upstream capacity rights; and (c) 0.46  
16      Bcf/day of traditional Gulf Coast receipts.

17      **Q.     Is there available firm capacity on SESH, Transco’s 4A lateral or Gulf**  
18      **South’s Southeast Market Expansion project to transport incremental**  
19      **supplies to the Mobile Bay Area?**

20      A.     No. As mentioned above, these projects are 100% subscribed and there is  
21      currently no available capacity on these projects. In addition, it is important  
22      to note that over 95% of the capacity held on SESH and nearly 70% of the  
23      southbound capacity on Transco’s 4A lateral is held by electric generators



1 and/or utility type shippers as opposed to producer type shippers. In addition,  
2 as mentioned on page 6 of Gulf South’s FERC Certificate Application Filing  
3 for its Southeast Market Expansion Project (FERC Docket No. CP13-96), “the  
4 customers supporting this project are electric power generators and industrial  
5 end-users.” This distinction is important as capacity held by generators and/or  
6 end user shippers is generally purchased to meet end user requirements and is  
7 not available to third parties on a peak demand day basis. Conversely,  
8 capacity held by producers or natural gas aggregators or marketers is typically  
9 held to support sales to generators and/or utility type shippers and as such,  
10 would increase supply availability at the delivery point location. In short, as  
11 the majority of the capacity to this area is held by generators and end-users,  
12 there is little to no additional gas supply for FPL to purchase as a result of the  
13 SESH, Transco 4A lateral and Gulf South pipeline expansions.

14 **Q. In summary, is supply available in the Mobile Bay Area to meet natural**  
15 **gas demand growth in Florida?**

16 A. No. As traditional supplies in the Mobile Bay area are in decline and as  
17 pipelines to this area are fully subscribed, natural gas supply in this area  
18 would be insufficient, absent the further construction of upstream pipeline  
19 expansions to meet incremental demand growth in the Florida market.

1                   V.     **NATURAL GAS SUPPLY MIX VIA SABAL TRAIL**

2  
3     **Q.     Please describe the receipt point access that will be provided via the**  
4     **proposed Sabal Trail project.**

5     A.     Through its capacity lease on the Transco system, Sabal Trail will offer its  
6     shippers primary firm receipt point access to Transco Zone 4 at Station 85 as  
7     well as to the Transco interconnects with Gulf South and the Midcontinent  
8     Express Pipeline, LLC (“MEP”) located near Station 85 (a map of the Transco  
9     system illustrating the location of Transco Zone 4 is attached as Exhibit TCS-  
10    5). In addition, the Transco lease enables Sabal Trail to offer its customers  
11    access to receipts located within Transco’s Zone 4 with Station 85, which will  
12    enable Sabal Trail’s shippers to access natural gas supply receipts located at  
13    any point within Transco’s Zone 4.

14    **Q.     Please provide a description of the Gulf South System immediately**  
15    **upstream of the proposed interconnect with the Sabal Trail project.**

16    A.     Exhibit TCS-6 provides an illustration of the MEP, Gulf South and Transco  
17    systems and capacities at and around Station 85.

18  
19           The portion of the Gulf South system to which the Sabal Trail project will  
20           connect is a 42” pipeline with a capacity of 1.9 Bcf/day known as Gulf  
21           South’s “Southeast Expansion” that was placed in service by Gulf South in  
22           2008. This line originates in Harrisville, Mississippi and terminates in  
23           Choctaw County, Alabama near Transco’s Compressor Station 85. Upstream

1 of the Southeast Expansion, Gulf South operates its East Texas to Mississippi  
2 Expansion facilities, also placed in service in 2008, which, with a capacity of  
3 approximately 1.7 Bcf/day, aggregates deliveries from intra-state pipelines in  
4 East Texas and carries gas through the Perryville Hub. The East Texas to  
5 Mississippi Expansion continues from Perryville and terminates at Harrisville,  
6 Mississippi, where the gas can continue along the Southeast Expansion.  
7 Finally, the Gulf Crossing Pipeline owned and operated as an affiliate of Gulf  
8 South Pipeline, is an interstate pipeline consisting of 357 miles of 42-inch  
9 pipeline extending from Sherman, Texas to the Perryville Hub in Northern  
10 Louisiana with a capacity of approximately 1.7 Bcf/day. At the Perryville  
11 Hub, Gulf Crossing can deliver to third party pipelines or directly into Gulf  
12 South's East Texas to Mississippi Expansion.

13 **Q. Please provide a description of MEP.**

14 A. MEP, placed in service in 2009, is a 50/50 joint venture between Kinder  
15 Morgan Energy Partners, L.P. and Energy Transfer Partners, LLC. MEP has a  
16 capacity of 1.8 Bcf/day and consists of approximately 265 miles of 42-inch,  
17 196 miles of 36-inch and 41 miles of 30-inch pipeline extending from  
18 southeast Oklahoma, across northeast Texas, northern Louisiana and central  
19 Mississippi, to an interconnection near Transco Station 85 near Butler,  
20 Alabama in Transco Zone 4.

21 **Q. Please provide a brief description of Transco Pipeline Facilities.**

22 A. Transco operates an extensive pipeline network that stretches from Texas,  
23 through Louisiana, Mississippi, Alabama, Georgia, South Carolina, North

1 Carolina, Virginia, Maryland, Pennsylvania and New Jersey to its terminus in  
2 the New York Metropolitan Area. The system provides receipt point access to  
3 numerous supply sources including the fast growing Eagle Ford Shale play in  
4 South Texas and the prolific Marcellus Shale play in Pennsylvania. Near  
5 Station 85, Transco operates multiple pipeline loops with a throughput  
6 capacity of approximately 4.7 Bcf/day.

7 **Q. Please provide a summary of supply sources that will be available to the**  
8 **proposed Sabal Trail project via the Gulf South and MEP Interconnects.**

9 A. MEP provides access to natural gas supplies from the Barnett Shale and  
10 Bossier Sands in Texas, the Fayetteville Shale in Arkansas and the Woodford  
11 / Caney Shale in Oklahoma. The Gulf South System, via its upstream  
12 interconnects, provides access to the Barnett Shale and Haynesville Shale as  
13 well as to the Perryville Hub. Via these two upstream pipelines, the Sabal  
14 Trail project will have access to a diverse mix of growing shale gas resources.

15 **Q. What is the outlook for shale gas supplies in the next few years?**

16 A. Unlike traditional offshore Gulf of Mexico supplies discussed previously in  
17 my testimony, shale gas production has been growing rapidly over the past  
18 few years and is projected to continue this rapid growth in the future. In fact,  
19 within its Annual Energy Outlook 2013, the EIA projects that Lower 48 Dry  
20 Gas Production in the US will increase from a level of about 18.5 Tcf in 2010  
21 to over 29 Tcf in 2040. The EIA also projects that this production growth will  
22 be primarily driven by the continued rapid growth in total shale gas  
23 production from less than 5 Tcf in 2010 to 16.7 Tcf in the year 2040. Exhibit

1 TCS-7 provides a graphic illustration of this projected rapid growth in natural  
2 gas production. The rapid growth in natural gas production, driven primarily  
3 by growth in shale gas resources, has the potential to support increasing  
4 natural gas demand requirements; including demand increases to support  
5 natural gas fired electric generation facilities, into the distant future.

6

7 The Sabal Trail project, with its access to production from a diverse mix of  
8 shale gas resources via Transco as well as the MEP and Gulf South systems  
9 will ensure that FPL, and the state of Florida as a whole, have direct access to  
10 this growing production resource in future years.

11 **Q. Please provide a summary of natural gas supply sources made available**  
12 **to the Sabal Trail project via its ability to access Transco Zone 4 Pool**  
13 **Receipts.**

14 A. The ability to utilize pooling rights within Transco's Zone 4 Pool will enable  
15 Sabal Trail shippers to contract with upstream shippers on the Transco system  
16 delivering natural gas into Transco's Zone 4 Pool. This pooling right provides  
17 Sabal Trail shippers with access to all receipt points in Transco's Zone 4  
18 including Transco interconnects with SESH, Elba Express, Tennessee Gas  
19 Transmission, Petal Gas Storage, Southern Natural Gas Company, among  
20 others. Further, to the extent that third party shippers have the capability to  
21 transport natural gas supplies from receipt points outside of Zone 4 to points  
22 within Zone 4, the pooling right will provide Sabal Trail shippers with access  
23 to these third party deliveries into Zone 4.

1 As Transco's system stretches from South Texas to the Eastern Seaboard, the  
2 system can provide indirect access to a multitude of gas supply basins from  
3 the growing Eagle Ford Shale in Texas to the prolific Marcellus Shale  
4 formation in Pennsylvania. Further, with a system capacity near Transco's  
5 Station 85 of about 4.7 Bcf/day, shippers have a significant capability to  
6 deliver gas supplies into Zone 4. As such, pooling capacity on the Transco  
7 system provided via the Sabal Trail capacity lease will provide FPL with  
8 access to a vast array of gas supply options that would not be obtained in the  
9 absence of this lease; as otherwise, FPL would be limited to a physical  
10 interconnection with Transco's system at Station 85.

11 **Q. Are there adequate capacity and supplies upstream of the Sabal Trail**  
12 **project to meet the demands of the FPL markets?**

13 A. Yes. As discussed previously, third party capacity to Transco near its Station  
14 85 totals about 3.7 Bcf/day (1.9 Bcf/day via the Gulf South Southeast  
15 Expansion and 1.8 Bcf/day via MEP). This capacity, coupled with Transco's  
16 traditional capacity upstream of Station 85 of about 4.7 Bcf/day provides a  
17 total of about 8.4 Bcf/day of potential supply access to the Transco Station 85  
18 area. This will be sufficient to meet the demands of all of Transco's customers  
19 as well as the demand on the proposed Sabal Trail project.

20  
21 With respect to gas supplies accessible via this capacity, MEP and the Gulf  
22 South expansions were constructed to transport growing shale gas supply  
23 sources to southeast markets. In addition, via its connections with several

1 shale gas resource plays, Transco provides additional access to this growing  
2 resource. As discussed in detail above, shale gas supply sources are projected  
3 to continue to grow in the next several years, and the Sabal Trail project will  
4 provide FPL with access to this growing resource base.

5 **Q. Would increased diversity in the available natural gas supply mix benefit**  
6 **FPL and the state of Florida?**

7 A. Yes. With the state of Florida generally and FPL specifically reliant to a large  
8 degree on Gulf Coast supplies, the introduction of access to an additional  
9 source of shale gas supplies via the Sabal Trail project will increase supply  
10 diversity and will correspondingly increase supply reliability. As discussed  
11 previously, Gulf Coast production is projected to decline whereas shale gas  
12 production is projected to grow in the future. In addition, Gulf Coast  
13 production remains subject to disruption due to hurricane activity during the  
14 peak summer demand period. Diversification of the supply mix will mitigate  
15 the impact of such disruptions on the overall natural gas supply portfolio.

16 **Q. Do current market prices indicate the value that increased supply**  
17 **diversity would provide?**

18 A. Yes. Pricing dynamics would suggest that as the ratio of demand for natural  
19 gas at a particular location increases versus available supply, the market price  
20 for natural gas at this location will increase. Conversely, as available supply  
21 increases at a location versus demand, the market price will decline. A  
22 comparison of the market price of natural gas in the vicinity of the proposed  
23 Sabal Trail project receipt points in Transco's Zone 4 (Station 85 is within

1 Transco's Zone 4) versus the market price of natural gas in the vicinity of  
2 FPL's traditional receipt points on FGT and Gulfstream in the Mobile Bay  
3 area reveals that the supply/demand mix available to the Sabal Trail project is  
4 preferable to that available via FPL's traditional Mobile Bay area supply  
5 sources.

6  
7 As to price data, prices of natural gas bought and sold in Transco's Zone 4  
8 during the 2009 through 2012 period carried an average premium of a little  
9 less than \$0.017 per MMBtu versus gas bought and sold at the Henry Hub,  
10 Louisiana. By comparison, natural gas bought and sold in FGT's Zone 3  
11 (Mobile Bay Area is within FGT's Zone 3) during this same period carried an  
12 average premium versus the Henry Hub of about \$0.094 per MMBtu. Thus,  
13 natural gas in the Mobile Bay Area during this period was priced about \$0.08  
14 per MMBtu higher than at Transco's Zone 4. Perhaps even more indicative of  
15 current conditions, during the most recent calendar year of 2012, after the  
16 installation of FGT's Phase VIII and Gulfstream's Phase V project increased  
17 demand pressure in the Mobile Bay Area, the price spread became more  
18 pronounced with gas purchased and sold at Transco's Zone 4, trading at a  
19 premium to the Henry Hub of \$0.027 per MMBtu, which was approximately  
20 \$0.164 per MMBtu lower than prices in the Mobile Bay Area, which traded at  
21 an average premium of about \$0.191 per MMBtu during this same period.





1 nuclear facilities, 896 MW are coal facilities, 648 MW are oil facilities, 35  
2 MW are solar facilities, 12,585 MW can be fueled by either natural gas or fuel  
3 oil and 6,568 MW can be fueled only with natural gas. It is also important to  
4 note that the majority of FPL's generation facilities that can be fueled by  
5 either natural gas or fuel oil utilize fuel oil as a backup fuel only and as such,  
6 fuel oil supplies on hand are only available to support short duration (2 to 4  
7 day) outages in gas supply.

8 **Q. How does the total quantity of natural gas utilized to generate electricity**  
9 **in the state of Florida compare to that of other states?**

10 A. As depicted in the EIA data summarized in Exhibit TCS-8, in a comparison of  
11 all fifty states, the state of Florida was the second largest consumer of natural  
12 gas to generate electricity during 2012 with only the state of Texas consuming  
13 more natural gas to generate power than Florida. After Florida, the state with  
14 the third largest use of natural gas to generate electricity, California, utilized  
15 only about 80 percent as much natural gas as Florida, and the states that were  
16 fourth and fifth (New York and Louisiana) each utilized less than 45 percent  
17 as much natural gas to generate power as Florida.

18  
19 Clearly, with no large scale in-state production available and with heavy  
20 demand for natural gas to support electric generation, the natural gas pipeline  
21 infrastructure delivering to generators is critical to maintain adequate  
22 generation capacity in Florida.

1       **Q.    How does natural gas pipeline and supply access in Florida compare to**  
2       **that available in Texas?**

3       A.    Texas is a net exporter of natural gas to other states, whereas Florida is a net  
4       importer of natural gas from other states. In other words, more natural gas is  
5       produced than consumed in the state of Texas, whereas virtually all of the  
6       natural gas consumed in the state of Florida is produced outside of the state.  
7       More specifically, within its “Natural Gas Annual 2011” report (released by  
8       the EIA in February 2013), the EIA reported that in 2011 Florida imported a  
9       net of 1,208 Bcf of natural gas whereas Texas exported a net of 3,034 Bcf.  
10      Because there is significantly more gas produced than consumed in the state  
11      of Texas while essentially all natural gas consumed in Florida must be  
12      imported into the state, it is clear that supply access in Texas is greater than  
13      that available in Florida.

14  
15      Further, the pipeline network in the state of Texas is well developed, with  
16      numerous intrastate and interstate pipelines traversing the state and providing  
17      a competitive environment for natural gas access available to customers  
18      within the state. In contrast, access to gas supply in the state of Florida must  
19      be obtained via the interstate pipelines operating within the state. With more  
20      than forty intrastate pipeline systems and twenty-five interstate pipeline  
21      systems operating in the state of Texas (compared to the two interstate  
22      pipeline systems, Gulfstream and FGT, that primarily serve the state of

1 Florida), it is clear that access to transportation capacity available to end use  
2 consumers is more competitive in Texas than in Florida.

3 **Q. How does natural gas pipeline and supply access in Florida compare to**  
4 **that available in California?**

5 A. Like Florida, California is a net importer of natural gas with EIA reporting net  
6 natural gas imports to California of 1,864 Bcf in 2011. However, the  
7 California marketplace is unique in that natural gas is primarily delivered to  
8 the state border by multiple long haul interstate pipelines. The gas is then  
9 transported within the state via a network of intrastate pipelines owned and  
10 operated by California utilities. As reported by the EIA these systems include  
11 the Pacific Gas & Electric pipeline system with approximately 3,500 miles of  
12 pipeline in service having a capacity of 3.2 Bcf/day, the Southern California  
13 Gas system with approximately 1,900 miles of pipeline in service and a  
14 capacity of 4 Bcf/day and the San Diego Gas and Electric pipeline system  
15 with approximately 830 miles of pipeline in service and a capacity of about  
16 900 MMcf/day. As such, unlike the Florida market, the California market is  
17 not dependent upon interstate pipelines to deliver natural gas to ultimate  
18 consumers within the state but is only dependent upon such pipelines to  
19 transport the gas to the state border. This in effect moves the “point of  
20 competition” for natural gas supplies away from individual markets within the  
21 state to points of aggregation at the state border.

22 A consumer located on one of these utility systems in California obtains  
23 access, via the utility pipeline network, to any of a number of interstate

1 pipelines delivering to the utility pipeline system, which provides the end user  
2 with the potential to access multiple supply basins via these upstream  
3 interstate pipeline systems. For example, Transwestern Pipeline Company,  
4 LLC and El Paso Natural Gas Company, LLC receive supplies from West  
5 Texas and San Juan basin sources, Kern River Gas Transmission Company  
6 and Ruby Pipeline, LLC receive supplies from Rocky Mountain sources and  
7 Gas Transmission Northwest, LLC receives supplies from Canadian and  
8 Rocky Mountain sources. Each of these five pipelines delivers to the  
9 intrastate utility systems, providing end users within California with access to  
10 any of these supply sources (i.e., Canadian, Rocky Mountain, West Texas and  
11 San Juan Basin) via the utility pipeline systems.

12  
13 In contrast, within the state of Florida, the majority of end use markets  
14 (including several FPL generation facilities) are connected to only one of two  
15 pipelines and thus, only access supplies made available via the directly  
16 connected pipeline.

17 **Q. What conclusions do you reach with respect to natural gas supply access**  
18 **in Florida versus access to supplies available in other states that use**  
19 **comparable quantities of natural gas in support of electric generation?**

20 A. Unlike those in Texas and California, generators operating in Florida, such as  
21 FPL, typically have access only to supplies delivered by either Gulfstream or  
22 FGT and primarily from only onshore Gulf Coast and offshore Gulf of  
23 Mexico supply sources. Thus, I conclude that gas supply access in Florida is

1 not as robust as that available in comparable states such as Texas and  
2 California. Efforts to diversify the natural gas supply mix and the delivery  
3 pipeline alternatives available to the state of Florida will benefit FPL and all  
4 other consumers in the state by increasing competition, diversity and  
5 reliability.

6  
7 **VII. NEED FOR NEW TRANSPORTATION CAPACITY**

8  
9 **Q. Is natural gas transportation capacity available on a secondary or**  
10 **interruptible basis in sufficient quantities to support FPL generation fuel**  
11 **requirements under peak demand day conditions?**

12 A. No. First, it is important to note that natural gas pipelines (such as FGT or  
13 Gulfstream) are typically designed to meet the obligations of shippers that  
14 hold firm gas transportation capacity, and there is no equivalent of electric  
15 generation reserve margin on the pipeline systems. As a result, if firm  
16 transportation capacity is sold out on a pipeline and the shippers holding the  
17 firm capacity are fully utilizing their contracted capacity, then there is no  
18 capacity left on the pipeline for those shippers that do not hold firm capacity.  
19 As mentioned previously in my testimony, the existing pipeline infrastructure  
20 serving the state of Florida is essentially sold out on a firm basis. Further, the  
21 sizable majority of this contracted firm capacity on these pipelines serving the  
22 state of Florida is held by electric generators. As a result, under peak summer  
23 demand day conditions, it is likely that firm capacity held to support electric

1 generation, whether by FPL or by third party generators, throughout the state  
2 will be fully utilized. As a result, during a peak summer demand day, with  
3 capacity nearly sold out and with the bulk of firm gas transportation capacity  
4 holders utilizing such capacity to meet generation requirements, it is unlikely  
5 that significant amounts of idle secondary or interruptible capacity will be  
6 available to serve FPL generation requirements.

7 **Q. Does this lack of secondary or interruptible capacity under peak demand**  
8 **day conditions impact the quantity of firm capacity that FPL must hold**  
9 **to support generation load requirements?**

10 A. Yes. To the extent that gas fired generation is required to meet peak day  
11 generation demand requirements, FPL must obtain firm gas transportation  
12 capacity to meet fuel requirements. Unlike coal or fuel oil, natural gas is not  
13 readily stored on site and must be transported via pipeline as needed on a real  
14 time basis. As such, with interruptible or secondary capacity largely  
15 unavailable under peak day conditions to FPL markets, FPL must obtain firm  
16 gas transportation capacity to insure that natural gas is available as fuel to  
17 support peak generation requirements.

18 **Q. Please describe your understanding of FPL's natural gas transportation**  
19 **capacity requirements supporting the acquisition of incremental capacity**  
20 **on the Sabal Trail and FSC pipelines.**

21 A. As more fully described in the testimony of FPL witness Enjamio, FPL  
22 projects a need for approximately 405 MMcf/day of incremental peak daily  
23 natural gas transportation capacity as of May 1, 2017 growing to

1 approximately 575 MMcf/day of capacity commencing May 1, 2020. The  
2 incremental gas transportation capacity requirement is calculated by FPL's  
3 Resource Assessment & Planning Department ("RAP") based upon the  
4 quantity of natural gas required to support peak day forecasted generation load  
5 demand under FPL's risk-adjusted forecast described in FPL witness Morley's  
6 testimony. FPL has determined that the use of the risk-adjusted forecast is  
7 appropriate to assess firm gas transportation capacity requirements as it  
8 provides the Company with a reserve margin of transportation capacity to  
9 offset unexpected conditions, system upsets or potential variances in actual  
10 versus forecasted demand requirements.

11 **Q. Is FPL's proposed use of a risk-adjusted forecast consistent with industry**  
12 **practices concerning the evaluation of pipeline capacity requirements?**

13 A. Yes. Within markets that (a) have an obligation to serve (such as natural gas  
14 local distribution company "LDC" markets) and (b) have minimal access to  
15 interruptible or secondary capacity during peak demand periods, the  
16 acquisition of pipeline reserve margin capacity is standard industry practice.  
17 Similar to FPL's determination regarding capacity reserve, LDC type capacity  
18 holders generally maintain pipeline reserve margin capacity to support system  
19 upsets and/or variances between actual and forecasted demand requirements.  
20 In fact, in constrained capacity markets, it is fairly standard practice for LDC  
21 shippers to maintain 3% to 6% capacity reserves to support peak winter  
22 operations.



1       **Q. Do you believe that it is appropriate for FPL to use a risk-adjusted**  
2       **forecast in determining its firm transportation capacity requirements?**

3       A. Yes. Recognizing that the pipelines serving the state of Florida are nearly  
4       sold out on a firm basis and with the vast majority of this capacity held by  
5       electric generators, significant quantities of interruptible or secondary capacity  
6       are unlikely to be available during the peak summer demand periods. As  
7       such, in order to meet peak day generation load, firm natural gas capacity  
8       must be under contract to support natural gas fired generation requirements.  
9       In this environment, a small reserve is appropriate.

10      **Q. Do you believe that the level of additional pipeline capacity that FPL has**  
11      **determined it needs in 2017 using its risk-adjusted peak load forecast is**  
12      **appropriate?**

13      A. Yes. As illustrated in Exhibit RM-4 to FPL witness Morley's testimony, the  
14      risk-adjusted peak load forecast for 2017 of 25,724 MW exceeds the base case  
15      peak load forecast of 24,122 MW for 2017 by about 6.6%. As such,  
16      contracting for 2017 firm gas transportation capacity based upon the risk-  
17      adjusted peak load forecast provide FPL with a transportation capacity reserve  
18      margin of about 6.6% versus the base case forecast in 2017. However, it is  
19      important to remember that FPL's peak day load requirement will continue to  
20      grow in each subsequent year whereas the next increment of pipeline capacity  
21      will not be available until 2020. As such, capacity acquired in 2017 must be  
22      sufficient to meet peak load requirements not only in 2017 but also in 2018  
23      and 2019. Comparing the base case peak load forecast in 2018 and 2019

1 (24,493 MW and 24,901 MW respectively) versus the 2017 risk-adjusted  
2 forecast (the forecast on which the firm transportation capacity requirement  
3 for 2017 through 2019 is calculated) reveals that the calculated transportation  
4 capacity reserve in 2018 would drop to approximately 5.0% and in 2019  
5 would drop to 3.3%. Thus, transportation capacity requirements calculated  
6 using the risk-adjusted peak load forecast result in an approximate firm  
7 transportation capacity reserve of 3.3% to 6.6% during the years of 2017  
8 through 2019 which is consistent with industry practice for markets in  
9 constrained capacity markets with obligation to serve requirements.

10 **Q. Do you believe that the level of additional pipeline capacity that FPL has**  
11 **determined it needs in 2020 and beyond using its risk-adjusted peak load**  
12 **forecast is appropriate?**

13 A. Yes. Comparing the risk-adjusted peak load forecast in 2020 (27,796 MW) to  
14 the base case peak load forecast in 2020 (25,302 MW) reveals that the risk-  
15 adjusted forecast is approximately 9.9% greater than the base case peak load  
16 forecast during this year. Once again, it is important to recognize that the  
17 capacity acquired to support 2020 load requirements will need to remain  
18 sufficient to support FPL load requirements until a subsequent pipeline  
19 expansion can be placed in service. Recognizing that it would take at least  
20 three to four years (due to design, regulatory and construction timeframes) to  
21 develop a future major pipeline expansion from project conception to in-  
22 service, a future expansion is unlikely to be in place prior to 2024. As such,  
23 the capacity acquired in 2020 will need to support FPL requirements through

1           2023. Comparing the 2020 risk-adjusted load forecast to the 2021 through  
2           2023 base case forecast reveals that the capacity reserve calculated via this  
3           load forecast differential will decline from the calculated 9.9% in 2020 to a  
4           level of only 3.8% in 2023. Recognizing that FPL must ensure that pipeline  
5           capacity is available to meet peak day load requirements, in my opinion, this  
6           level of reserve is appropriate.

7           **Q. In addition to FPL natural gas demand requirements, please describe**  
8           **third party natural gas demand for generation in the state of Florida.**

9           A. Natural gas demand to support generation requirements has grown  
10          significantly throughout the state of Florida during the past several years.  
11          Each year, the FRCC publishes its annual Regional Load and Resource Plan  
12          which includes ten year projections of Energy Sources by Fuel Type. As  
13          reported in these plans, during the past several years, the proportion of  
14          generation in the state of Florida fueled by natural gas has continued to  
15          increase as a percentage of statewide generation. In fact, a review of the Load  
16          & Resource Plan published by the FRCC in 2008 reveals that natural gas fired  
17          generation made up less than 40% of the generated electricity in the state of  
18          Florida in 2007. In contrast, the 2013 Load & Resource Plan reveals that  
19          natural gas fired generation represented approximately 65% of the generated  
20          energy in the state during 2012 and is projected to remain at approximately  
21          60% during the 2013 through 2022 ten year planning period. As reliance  
22          upon natural gas for generation represents such a large percentage of total  
23          generation demand throughout the state of Florida, the role of the pipeline

1 infrastructure and available supply diversity and reliability serving this  
2 demand clearly take on more significant roles in serving the state's generation  
3 requirements.

4 **Q. Are you aware of any specific proposed third party changes to the**  
5 **generation infrastructure in Florida that are likely to result in increasing**  
6 **natural gas demand for power generation?**

7 Yes. Per its 2013 ten year site plan, Progress Energy Florida ("PEF") has  
8 reported that (a) as of January 2013 it has retired its Crystal River Nuclear  
9 Unit 3 (with a summer net generation capacity of 789 MW); (b) is planning to  
10 retire its Crystal River Units 1 and 2 coal fired power generation units (with a  
11 combined summer net generation capacity of 869 MW) in 2016; and (c) is  
12 planning to install natural gas fired combined cycle units in 2018 and 2020  
13 each with a summer net generation capacity of 1,189 MW. These new  
14 combined cycle facilities will put increased pressure on the natural gas  
15 infrastructure in the state to deliver incremental gas supplies to these markets.

16 **Q. You have discussed natural gas demand to support electric generation. Is**  
17 **there also potential growth in natural gas demand in the state of Florida**  
18 **that is not related to electric generation?**

19 A. Yes. EIA data indicates that natural gas demand for electric power generation  
20 has represented roughly 85 to 90% of overall natural gas demand in the state  
21 of Florida during the past five years. This EIA data also indicates that natural  
22 gas demand for residential, commercial and industrial consumers has  
23 increased by about 24% over the past five years from a level of about 135 Bcf

1 in 2008 to a level of about 167 Bcf in 2012, representing an average daily  
2 consumption increase of about 90 MMcf/day. Although this non-electric  
3 generation demand represents a small percentage of the overall demand in the  
4 state, this type of increase is not insignificant, and continued growth at these  
5 levels will put additional pressure on the pipeline infrastructure serving the  
6 state.

7  
8 **VIII. ADDITIONAL BENEFITS TO FLORIDA**

9  
10 **Q. Beyond adding needed pipeline capacity, do the Sabal Trail and FSC**  
11 **projects provide other enhancements to the natural gas pipeline**  
12 **infrastructure within the state of Florida?**

13 A. Yes. The addition of these pipelines will provide other benefits including  
14 improved reliability and security of natural gas deliveries to market areas in  
15 Florida, as well as protection against mainline outages, supply losses and the  
16 loss of single-pipe service to some locations. In addition, the proposed  
17 Central Florida Hub is expected to enhance service reliability and to create a  
18 more liquid market for capacity and supply within the state.

19 **Q. Please describe the protection against mainline outages that can be**  
20 **provided by the new Pipeline System.**

21 A. As described previously in my testimony, the majority of the gas delivered to  
22 Florida markets is delivered via the FGT and Gulfstream pipeline systems.  
23 Portions of these pipeline systems have been looped with one or more pipes,

1 which provide a degree of protection in the event service on one pipe is  
2 interrupted. Other portions of these systems, however, rely on deliveries  
3 through a single pipe. As the new pipelines will provide another source of  
4 natural gas into Florida, they will be available to offset a portion of the  
5 delivery capacity lost due to any potential mainline outages on the existing  
6 pipelines.

7  
8 Further, with respect to potential compressor outages, it is important to note  
9 that the full utilization of the existing systems is dependent upon the operation  
10 of compression facilities located both within Florida as well as upstream on  
11 these pipeline systems in other states. As is the case with any pipeline system  
12 designed to operate at or near capacity in meeting contractual delivery  
13 obligations, the interruption or loss of localized compression or transmission  
14 facilities anywhere along the pipeline system can, to some degree, impact the  
15 ability of the affected pipeline to meet its firm contractual service  
16 requirements at downstream locations. Once again, the introduction of a new  
17 large diameter pipeline into this service area will provide another delivery  
18 option and will serve to mitigate the impact of any upstream compressor  
19 outages on local markets.

20 While unanticipated pipeline outages occur infrequently, when they do occur,  
21 they have the potential to disrupt natural gas service to FPL and to all Florida  
22 consumers. As a result, it is a significant benefit of a new alternative pipeline  
23 service provider that it will provide another source of natural gas that would

1 be available to potentially offset all or a portion of delivery capacity due to an  
2 outage along the existing pipeline network.

3 **Q. Please provide a description of how the Central Florida Hub**  
4 **Interconnections can be utilized as protection against mainline outages.**

5 A. In the event that there is an outage on any of the connected pipelines upstream  
6 of the Central Florida Hub, natural gas can flow through the hub from an  
7 unaffected pipeline to the affected pipeline providing needed supplies to  
8 continue to serve markets downstream of the outage on the affected pipeline.  
9 As such, the Central Florida Hub will create the ability to flow from any  
10 upstream pipeline into any downstream pipeline to offset outages.

11 **Q. Can you provide an example of how the Central Florida Hub could be**  
12 **used to protect against losses due to pipeline outages?**

13 A. Yes. As an example, consider FPL's West County generation facility, located  
14 south of the Central Florida Hub which receives natural gas supplies solely via  
15 the Gulfstream pipeline system. In the absence of an alternate source of  
16 supply, any outage along the Gulfstream system at any location between its  
17 start in Coden, Alabama to the West County facility will impact natural gas  
18 deliverability to FPL at West County. After the Central Florida Hub is in  
19 place, any outage on the Gulfstream system upstream of the Central Florida  
20 Hub can be offset via supplies received at the Central Florida Hub. As such,  
21 in this example, after an outage on Gulfstream occurs upstream of the Hub,  
22 FPL could divert gas supplies from FGT or Sabal Trail into Gulfstream via the  
23 Hub facilities to ultimately flow to the West County facility.

1 This is just one specific example of a flow path that could be maintained via  
2 the Central Florida Hub. It is worth noting that the flexibility of the hub with  
3 the ability to receive and/or deliver large volumes of gas to the connected  
4 pipes will provide a myriad of possibilities in which the hub can be utilized to  
5 protect against potential outages on any one of the four connected pipelines.

6 **Q. Please describe additional supply access that could be provided by the**  
7 **Central Florida Hub to the benefit of all Florida consumers.**

8 A. In addition to providing a backup source of supply to maintain operations  
9 during potential outage conditions on any of the connected pipelines, the  
10 Central Florida Hub also has the potential to provide all consumers within the  
11 state of Florida with direct pipeline access to shale gas supplies via the Sabal  
12 Trail system. As the Sabal Trail project will be connected to both FGT and  
13 Gulfstream at the hub, Florida consumers will have the ability to purchase  
14 capacity on Sabal Trail and then direct their gas from Sabal Trail into FGT  
15 and/or Gulfstream at the hub for ultimate delivery to downstream markets.

16  
17 Because the hub will be connected to each of the four pipelines in this area  
18 (i.e., FGT, Gulfstream, Sabal Trail and FSC), it will also provide an  
19 opportunity for Florida market participants to purchase and sell natural gas  
20 and create a liquid marketplace for spot market transactions within the state.  
21 This added opportunity for price competition should benefit FPL and its  
22 customers as well as all other gas consumers in Florida.



1       **Q.    The design of the FSC project initially includes direct connections only to**  
2       **the Martin plant and the Riviera Beach plant lateral. As such, can this**  
3       **pipeline be utilized to provide protection against mainline outages at**  
4       **other locations?**

5       A.    Yes. In order to provide protection against mainline outages at other  
6       locations, the FSC pipeline can be utilized to displace transportation quantities  
7       from connected markets to upstream markets on the affected pipelines. This  
8       would not require a direct connection to the existing pipeline. As discussed  
9       earlier in my testimony, FPL has firm transportation rights with both  
10      Gulfstream and FGT to provide service to FPL's Martin plant and has firm  
11      transportation contract rights with FGT to its Riviera facility. In the event that  
12      there is an outage on the Gulfstream system, FPL could flow natural gas  
13      supplies to its Martin plant via the FSC pipeline and displace a like amount of  
14      capacity on Gulfstream. Similarly, in the event that there is a capacity  
15      restriction on FGT due to an upstream outage, FPL could flow natural gas  
16      supplies to its Martin or Riviera facility via the FSC pipeline and displace a  
17      like amount of capacity on FGT.

18      **Q.    Please describe the protection against disruption or loss of sources of**  
19      **supply that will be provided by the new pipelines.**

20      A.    As described in detail previously in my testimony, Gulfstream and FGT are  
21      designed to source gas supplies primarily from traditional onshore Gulf Coast  
22      and offshore Gulf of Mexico supply sources. The Sabal Trail project, on the  
23      other hand, will provide supplies from shale gas locations in North Louisiana,

1 Arkansas and East and Central Texas. This diversity of supply created with  
2 the new pipelines will decrease the portion of FPL's fuel requirements that is  
3 dependent upon traditional Gulf Coast and Gulf of Mexico sources. As a  
4 result, a smaller percentage of FPL's overall supply portfolio (and generation  
5 capacity) will be impacted by isolated weather events such as hurricane  
6 disruptions in the Gulf of Mexico.

7  
8 This diversity of supply has the potential to provide an operational benefit  
9 through access to non-impacted supply sources during isolated weather  
10 events. In addition, recognizing that short-term or long-term reductions in  
11 Gulf Coast natural gas supply due to hurricanes can result in spikes in Gulf  
12 Coast supply prices, the diversity of supply created via the new pipelines has  
13 the potential to also provide a financial benefit through access to non-  
14 impacted supply sources during such events.

15 **Q. Will the Sabal Trail and FSC projects provide FPL and other Florida**  
16 **consumers with increased competitive alternatives for future gas**  
17 **transportation capacity?**

18 A. Yes. The majority of Peninsular Florida markets are currently accessed only  
19 by FGT. The construction of a new large diameter pipeline through  
20 Peninsular Florida will provide FPL as well as other Florida customers with  
21 access to a competitive large diameter pipeline alternative in this portion of  
22 the state. To the benefit of all consumers in these areas, the project will  
23 provide pipe-on-pipe competition for interstate pipeline services and will

1 provide consumers with options as to pipeline services in the future. While  
2 the option value associated with this type of competition is difficult to  
3 quantify, a project that permanently alters the competitive environment for  
4 services such as that provided via the combined Sabal Trail / FSC projects has  
5 the potential to reap substantial benefits for the participant, as well as other  
6 consumers in the vicinity of the pipeline.

## 8 IX. THE RFP PROCESS

9  
10 **Q. What is your understanding of the goals of FPL's RFP process?**

11 A. The goals of FPL's capacity RFP process were to obtain competitive bid  
12 proposals to meet FPL's natural gas supply needs, increase physical pipeline  
13 capacity into the state of Florida, add to the reliability and diversity of supply  
14 available to the state and ensure future transportation capacity availability.

15 **Q. Were these goals appropriately addressed in the RFP?**

16 A. Yes. The RFP clearly stated that in addition to meeting FPL's future delivery  
17 requirements, FPL's goals included finding a solution that would also ensure  
18 future gas transportation availability and diversity of supply. In addition, FPL  
19 further stated in the RFP that its preference was to obtain this capacity via a  
20 new pipeline to support these goals. To this end, FPL stated in the RFP that  
21 "FPL strongly prefers that this gas transportation capacity be provided via a  
22 new pipeline that is geographically diverse from the two major pipelines

1 currently serving the state of Florida.” The detailed parameters of the RFP are  
2 more fully described in the testimony of FPL witness Stubblefield.

3 **Q. What role did your firm, GSC, perform in FPL’s RFP process?**

4 A. GSC assisted FPL in conducting the RFP process. As directed by FPL, work  
5 performed by GSC prior to receipt of the RFP responses included assistance in  
6 development of the RFP document and review and development of parameters  
7 to be used to evaluate the responses from both an economic and non-economic  
8 perspective.

9  
10 Upon receipt of the responses, GSC reviewed the proposals, assisted FPL in  
11 analyzing the non-economic parameters, assisted FPL in summarizing the  
12 proposals, participated in follow up meetings with the respondents and  
13 developed an independent third party economic evaluation of the proposals.

14 **Q. Please briefly summarize the process utilized by FPL to evaluate the**  
15 **proposals received in response to the RFP.**

16 A. Proposals were first evaluated to ensure that they met the Minimum  
17 Requirements. All proposals that met the Minimum Requirements advanced  
18 to the more detailed Economic and Non-Economic Evaluation Processes.

19 **Q. Please describe the “Economic Evaluation” portion of the evaluation**  
20 **process.**

21 A. As outlined in the RFP document, the Economic Evaluation consisted entirely  
22 of the results of a Cumulative Present Value of Revenue Requirements  
23 (“CPVRR”) analysis conducted over a 40-year term by FPL’s Resource

1 Assessment & Planning Department that is described in the testimony of FPL  
2 witness Enjamio. Thus, the CPVRR impacts of each proposal were compared  
3 against those of the remaining proposals to assess the overall cost impact on  
4 FPL and its customers of each proposal.

5 **Q. Please describe the “Non-Economic Evaluation” portion of the evaluation**  
6 **process.**

7 A. Within the comparative non-economic portion of the evaluation process, FPL  
8 evaluated responses with respect to various issues that impact service rights  
9 and flexibilities not captured in the economic analysis. These non-economic  
10 issues were captured in four broad categories including: (i) Rate and Service  
11 Stability, (ii) Reliability, (iii) Operational Rights and Flexibility; and (iv)  
12 Precedent Agreement Modifications.

13 **Q. How many bidders responded to FPL’s RFP with respect to the Northern**  
14 **Pipeline Project?**

15 A. FPL received five different bid proposals for the Northern Pipeline Project.  
16 Two of the bids were joint bid proposals, each of which included two pipeline  
17 companies as partners. As such, there were a total of seven pipeline  
18 companies involved in sponsoring and/or submitting these five Northern  
19 Pipeline Project bid proposals. In addition, an eighth pipeline company, while  
20 electing not to submit a response to the RFP, did enter the process via the  
21 provision of a capacity lease of its existing system to support a portion of the  
22 Sabal Trail proposal.

1       **Q.    How did the number of responses compare to the number of pipeline**  
2       **companies that expressed any interest in reviewing the RFP?**

3       A.    Including FPL's affiliate self-build team, a total of nine pipeline companies  
4       were represented at the pre-bid meeting held by FPL during the RFP process.  
5       In addition to the nine companies represented at the pre-bid meeting, a tenth  
6       pipeline company also accessed FPL's RFP document via the RFP website.  
7       As such, a total of ten pipeline companies were either represented at the pre-  
8       bid meeting or accessed the RFP document. As noted above, eight of these  
9       ten companies were represented in the bid proposals received by FPL. Thus,  
10      there was an 80% bid response rate to the Northern Pipeline Project from the  
11      companies that expressed an initial interest in the project.

12      **Q.    Did the bidders that responded to the Northern Pipeline project portion**  
13      **of the RFP represent a significant portion of pipelines active in the**  
14      **region?**

15      A.    Yes. The RFP respondents represent essentially all active pipelines in the  
16      southeast and the majority of pipelines active throughout the continental U.S.

17      **Q.    Do you believe that the response to FPL's RFP with respect to the**  
18      **Northern Pipeline Project was robust?**

19      A.    Yes. For the reasons described above, the response to FPL's Northern Pipeline  
20      Project RFP was robust.

21      **Q.    How many responses did FPL receive to the RFP with respect to the**  
22      **Southern Pipeline Project?**

1 A. FPL received four proposals for the Southern Pipeline Project: three  
2 alternatives from FPL's affiliated self-build team and a fourth proposal that  
3 was a joint bid submitted by two pipeline companies.

4 **Q. Do you have an opinion on why there were fewer proposals received for**  
5 **the Southern Pipeline project than the Northern Pipeline project?**

6 A. Yes. In response to informal feedback received from potential bidders prior to  
7 the RFP process, FPL designed the RFP to limit the Northern Pipeline project  
8 to the section between the project start at Transco Station 85 and the Central  
9 Florida Hub location. Discussions with potential bidders revealed that this  
10 Northern Pipeline was especially attractive from a "new build" perspective as  
11 it provided access to a diverse customer base with significant market potential  
12 for the project. Conversely, natural gas demand in the portion of the state  
13 south of the Central Florida Hub is dominated by the demand at FPL's  
14 generation facilities. As such, the Southern Pipeline project does not provide  
15 as large a range of potential pipeline shippers as can be served by the Northern  
16 Pipeline Project. In my opinion, since the Southern Pipeline Project provides  
17 access primarily to FPL-only markets, and does not provide the third party  
18 market access opportunities provided by the Northern Pipeline Project, it was  
19 less attractive to potential bidders and as a result, there were fewer bid  
20 proposals submitted for this portion of the project.

1       **Q. Does having a separate Northern Pipeline project benefit Florida gas**  
2       **consumers?**

3       A. Yes. In addition to providing the Northern Pipeline Project bidders with  
4       attractive market opportunities, a secondary goal of having two separate  
5       pipeline projects was to insure that any third party shippers on the Northern  
6       Pipeline Project would not be required to share in the costs of facilities south  
7       of the Central Florida Hub. As the natural gas market south of the Central  
8       Florida Hub is dominated by demand supporting FPL generation, this feature  
9       was designed to keep Northern Pipeline Project costs to a minimum and thus  
10      make this portion of the project more financially attractive to third party  
11      shippers. To the extent that the Northern Pipeline Project bidders were able  
12      to attract additional third party market demand to the project, the impacts  
13      associated with economies of scale on the Northern Pipeline Project would  
14      result in lower costs for all shippers on the project.

15  
16      As such, in an attempt to make the larger Northern Pipeline Project an  
17      attractive project for potential bidders, FPL structured the RFP to maximize  
18      market opportunities for pipeline bidders while keeping costs as low as  
19      possible for this segment.

20      **Q. Did FPL request that RFP respondents submit project cost estimates**  
21      **supporting the proposals?**

22      A. Yes. As part of the RFP, FPL required that respondents submit project cost  
23      estimates illustrating project costs that would be incurred to construct the



1 project. Facility cost estimates varied significantly based upon the fact that  
2 each proposal provided distinct: (i) pipeline routing; (ii) project design; and  
3 (iii) use or non-use of existing facilities (i.e., capacity lease usage).

4 **Q. Are the cost estimates submitted by the respondents consistent with**  
5 **project costs associated with other projects around the United States?**

6 A. Yes. As illustrated in Exhibit TCS-9, the calculated average unit cost per mile  
7 of pipeline installation associated with the proposals for the Northern and  
8 Southern Pipeline Projects are consistent with recently constructed and/or  
9 recently proposed large diameter, significant length natural gas pipeline  
10 projects in various locations around the United States.

11 **Q. Did all of these bid responses meet the Minimum Requirements?**

12 A. No. One bidder submitted bid proposals for both the Northern Pipeline and  
13 the Southern Pipeline Projects that did not comply with the Minimum  
14 Requirements (“Non-Compliant Bids”). Specifically, the Non-Compliant  
15 Bids submitted by this bidder included only indicative pricing and did not  
16 provide FPL with price certainty as to the cost of transportation services. In  
17 an attempt to have this bidder continue to participate in the bid evaluation  
18 process, FPL offered this bidder a chance to revise its bids to meet the  
19 Minimum Requirements. The bidder declined to revise its bids and as such,  
20 this bidder was released from the process and the Non-Compliant Bids were  
21 not considered for selection.

1       **Q. Did all of the remaining RFP responses progress to the more detailed**  
2       **economic and non-economic evaluations?**

3       Yes, after removal of the Non-Compliant Bid, proposals received from the  
4       remaining four bidders with respect to the Northern Pipeline Project and the  
5       FPL self-build alternatives with respect to the Southern Pipeline Project  
6       progressed to the more detailed evaluations.

7       **Q. What were the results of the non-economic evaluations?**

8       A. As discussed in detail in the testimony of FPL witness Stubblefield, since all  
9       the compliant bids met the main criteria identified by FPL within the RFP  
10      (i.e., expandable new pipeline infrastructure originating at and providing new  
11      supply access at Transco Station 85), the non-economic evaluation provided  
12      little separation between the bid proposals. As a result, the economic  
13      evaluations became the primary drivers in separating the bid alternatives.

14      **Q. What were the results of the CPVRR analysis conducted by FPL as the**  
15      **economic evaluations?**

16      A. As discussed in detail in the testimony of FPL witness Enjamio, the CPVRR  
17      analysis conducted by RAP compared combinations of each of the compliant  
18      bids for the Northern Pipeline Project and each of the self-build alternatives  
19      for the Southern Pipeline Project. This comparison revealed that the  
20      combinations in which Sabal Trail was the Northern Pipeline Project proposal  
21      would result in cost savings of about \$580 million to \$1.4 billion versus the  
22      combinations that included the Northern Pipeline Project alternatives  
23      proposed by the remaining three bidders.

1 In addition, the CPVRR analysis revealed that the combination including the  
2 hybrid project alternative of the FSC project for the Southern Pipeline Project  
3 proposal resulted in lower overall costs to FPL's customers than either the 36"  
4 project alternative or the 30" project alternative.

5 **Q. Did FPL make any economic comparisons of the FSC project to the non-**  
6 **compliant Southern Pipeline Project bid proposal?**

7 A. Yes. The Non-Compliant Bid, which included indicative pricing only, did not  
8 comply with the RFP and did not provide an acceptable level of price  
9 certainty to FPL. Nonetheless, in an attempt to insure that quoted pricing of  
10 the FSC project is in step with market conditions, FPL developed a CPVRR  
11 analysis utilizing the combination of the non-compliant Southern Pipeline  
12 Project proposal (bidder B proposal) and the most favorable Northern Pipeline  
13 Project proposal (Sabal Trail). As a conservative measure, FPL used the  
14 indicative pricing that the non-compliant bidder had provided even though  
15 there is no assurance that the bidder actually would have been willing to  
16 commit those prices had it been selected.

17 **Q. What were the results of this CPVRR analysis of the non-compliant**  
18 **Southern Pipeline Project proposal?**

19 A. The CPVRR analysis results of the combined non-compliant Southern  
20 Pipeline Project and the Sabal Trail project revealed that this combination  
21 would result in a net present value of costs that were about \$105 million  
22 higher (in 2013 dollars) than the selected combination of the Sabal Trail

1 project and the FSC project. This analysis helps confirm that the pricing for  
2 the FSC project is favorable for FPL and its customers.

3  
4 **X. INDEPENDENT GAS COST ANALYSIS**

5  
6 **Q. Did you develop an independent evaluation of the overall cost of gas**  
7 **transportation to FPL and its customers associated with each of the**  
8 **compliant proposals received by FPL in its solicitation process?**

9 A. Yes. I developed an independent comparative cost analysis of the compliant  
10 proposals received by FPL in response to the RFP. I refer to this as a “Gas  
11 Cost Analysis.”

12 **Q. Please describe your independent Gas Cost Analysis.**

13 A. The Gas Cost Analysis compares the net present value (in 2013 dollars) of  
14 costs that would be incurred by FPL and its customers for pipeline service  
15 during each year of the forty year project life under each possible combination  
16 of the compliant Northern and Southern Pipeline Project proposals.

17 **Q. What discount rate percentage did you utilize to calculate Net Present**  
18 **Values of costs in the Gas Cost Analysis?**

19 A. I utilized FPL’s weighted average after tax cost of capital (7.45 percent) as a  
20 proxy to represent the discount rate applicable to FPL’s ratepayers in this  
21 analysis.

1       **Q.    Please provide a summary of FPL’s natural gas fuel requirements for**  
2       **power generation included in your Gas Cost Analysis.**

3       A.    The natural gas fuel requirements to support generation included in my Gas  
4       Cost Analysis have been provided by RAP and represent projections of FPL’s  
5       natural gas demand requirements over the forty year project life.  More  
6       specifically, the natural gas demand requirements provided are consistent with  
7       those included in the CPVRR analysis developed by FPL and described in  
8       FPL witness Enjamio’s testimony supporting FPL’s evaluation of Combined  
9       Project 1.

10  
11       Consistent with demand requirements discussions in witness Enjamio’s  
12       testimony, demand requirements were developed under the “Base Resource  
13       Plan” and under a “Four Year Nuclear Delay Scenario” in which FPL’s  
14       planned Nuclear generation expansions capacity at its Turkey Point facility  
15       are delayed by four years.  Thus, I have developed the Gas Cost Analysis  
16       utilizing both the Base Resource Plan and the Four Year Nuclear Delay  
17       Scenario demand projections.

18       **Q.    How were the pricing alternatives evaluated within the independent Gas**  
19       **Cost Analysis?**

20       A.    With respect to proposals that included Fixed Prices, the fixed prices were  
21       utilized within the Gas Cost Analysis.  Conversely, with respect to Alternative  
22       Price Proposals, to represent potential demand charges, the average of (i) the  
23       base bid price; (ii) the price cap; and (iii) the most likely price was utilized to

1 represent the long term price associated with such bids. Finally, only  
2 responses that complied with FPL's RFP requirement for either: (a) a Fixed  
3 Price; or (b) an Alternative Price with a price cap and price adjustments tied to  
4 verifiable indices were evaluated.

5 **Q. Did the Gas Cost Analysis evaluate the Northern Pipeline and Southern**  
6 **Pipeline Project alternatives on a stand-alone basis?**

7 A. No. Natural gas deliveries will be made to FPL's Martin plant and Riviera  
8 Beach plant lateral via the Southern Pipeline project. The Southern Pipeline  
9 Project, in turn, will receive natural gas supply via its interconnection with the  
10 Northern Pipeline Project at the Central Florida Hub. As such, in order to  
11 evaluate FPL's overall system natural gas costs after implementation of the  
12 new projects, deliveries to the Martin plant and Riviera Beach plant lateral via  
13 the new pipelines have been evaluated based upon the aggregate costs of both  
14 the Northern Pipeline and Southern Pipeline Projects. With this in mind, the  
15 Gas Cost Analysis included evaluations of each possible combination of  
16 Northern Pipeline and Southern Pipeline Project.

17 **Q. What were the results of your Gas Cost Analysis?**

18 A. The results of my Gas Cost Analysis are consistent with the results of FPL  
19 witness Enjamio in that my analysis indicates that the proposals resulting in  
20 the lowest overall long term costs for FPL are:

- 21 • The Sabal Trail project as the Northern Pipeline Project; and
- 22 • The FSC – Hybrid Project as the Southern Pipeline Project.

23 Tables of the results of the Gas Cost Analysis are attached as Exhibit TCS-10.

1 As illustrated in Exhibit TCS-10, with respect to the Northern Pipeline  
2 Project, the combination of Sabal Trail and the FSC project would result in a  
3 net present value of cost savings (in 2013 dollars) of between \$500 million  
4 and \$1.5 billion versus combinations of the FSC project with the alternative  
5 Northern Pipeline Project proposals. As a result, it is clear that Sabal Trail is  
6 the most favorable Northern Pipeline Project from an economic perspective.

7  
8 With respect to the Southern Pipeline Project, the hybrid self-build alternative  
9 provides the lowest long term cost of gas regardless of the Northern Pipeline  
10 Project with which it is paired. In fact, in each case, the hybrid alternative  
11 results in a net present value of cost savings (in 2013 dollars) of  
12 approximately \$40 million to \$50 million over the life of the project versus  
13 either of the other two pipeline alternatives. As such, it is clear that the FSC –  
14 hybrid alternative is the most favorable project from an economic perspective.

15 **Q. Did you perform any other assessment to confirm that the pricing of the**  
16 **FSC project is favorable for FPL and its customers?**

17 **A.** Yes. I have compared the quoted gas transportation charges for the FSC and  
18 Sabal Trail projects to determine whether the FSC charges are in line with  
19 those for Sabal Trail. There are differences between the scope of the projects  
20 that preclude a direct comparison, but after making adjustments for the  
21 different length of the projects, timing of investment streams as well as the  
22 compression and Central Florida Hub costs of the Sabal Trail project, I have  
23 determined that the cost per mile to FPL over the 40-year analysis period is

1 approximately the same for both projects. Because Sabal Trail emerged as  
2 clearly the lowest-cost proposal in the robust competition for the Northern  
3 Pipeline Project, this provides additional assurance that the FSC rates are  
4 reasonable.

5  
6 **XI. FPL HAS MADE THE CORRECT CHOICE**

7  
8 **Q. Is FPL's decision to contract for firm transportation capacity on the**  
9 **Sabal Trail and FSC pipelines the right choice for FPL and its**  
10 **customers?**

11 A. Yes. The Sabal Trail and FSC projects meet FPL's stated goals of increasing  
12 physical pipeline capacity into the state of Florida, adding to the reliability  
13 and diversity of supply available to the state, ensuring future transportation  
14 capacity availability and meeting FPL's long term natural gas fuel supply  
15 needs. In addition, the projects also introduce a competitive pipeline  
16 alternative and an associated option value to markets in Peninsular Florida  
17 where today there is no pipeline competition. While it is difficult to quantify  
18 the option value associated with a project of this nature, the introduction of  
19 meaningful pipeline competition into Peninsular Florida has the potential to  
20 provide unforeseen benefits for FPL and its customers as well as other natural  
21 gas consumers in these areas.

22 **Q. Does this conclude your testimony?**

23 A. Yes.



## TIMOTHY C. SEXTON

### EMPLOYMENT HISTORY

#### Gas Supply Consulting, Inc.

14811 St. Mary's, Suite 175, Houston, Texas 77079

June 1994 - Present

Current Position: President

#### Selected Recent Experience at Gas Supply Consulting, Inc.

- Development of Pipeline Capacity RFP and Precedent Agreement: Serve as consultant to We Energies subsidiaries, Wisconsin Gas Company and Wisconsin Electric Power Company – Gas Operations. Provided support and assistance in developing pipeline capacity RFPs that ultimately led to the construction of Guardian Pipeline and Guardian II Pipeline projects which transport natural gas supplies from Chicago Hub to Wisconsin markets. Currently engaged by We Energies to assist in development of pipeline project in West Central Wisconsin.
- LNG Exporter Pipeline Infrastructure Analysis: Currently serving as consultant to LNG exporter with respect to review and analysis of infrastructure “re-wiring” opportunities to support deliveries to LNG export facility in South Louisiana. Support in analysis of capabilities of existing facilities, assessment of required pipeline facility expansions and negotiations with potential pipeline service providers.
- Natural Gas Reliability Assessments Supporting Electric Generation: Serve as primary consultant to Fuel Reliability Working Group (“FRWG”) of the Florida Reliability Coordinating Commission (“FRCC”). Responsibilities in this role include:
  - Evaluation of fuel requirements to generation facilities within the FRCC region;
  - Development of contingency analyses to assess potential impact of fuel losses associated with extraordinary events such as severe weather (hurricanes, cold weather, etc.) or catastrophic loss of compressor or pipeline facilities;
  - Maintain and utilize hydraulic flow models of all pipelines serving the FRCC region for use in developing reliability assessment analyses on behalf of the FRCC;
  - Monitor and assess the impact of any proposed changes to the fuel supply infrastructure serving the region and provide updates to the FRWG members of any such changes; and
  - Provide input to FRCC staff and member companies of the FRWG concerning the impact of any planned or unplanned outages to the natural gas infrastructure serving the region.
- Natural Gas Infrastructure Analysis Supporting Electric Generation Requirements – Analyzed capabilities of pipeline systems in Florida to support potential natural gas fired generation installations at various locations in Florida on behalf of Florida Power & Light Company (FPL). Work includes maintenance of hydraulic flow models serving FPL markets as well as the use of such models to support FPL generation planning and siting decisions. Support FPL in negotiations with natural gas pipeline service providers.
- Natural Gas Infrastructure Analysis Supporting Shale Gas Evacuation Strategies: Developed assessments of required Midstream facilities and associated projected costs required to develop Haynesville shale asset in North Louisiana and East Texas as well as Marcellus shale asset in Central Pennsylvania on behalf of Exco Resources and BG North America. Work included evaluation of required Midstream facilities, analysis of third party interstate and intrastate pipeline infrastructure to assess potential to transport produced gas to markets and evaluation of available markets. Review of required Midstream development facilities and pipeline infrastructure in the vicinity of Eagle Ford Shale asset in South Texas on behalf of client company bidding to acquire such asset.
- Other Natural Gas Infrastructure Analysis: Analyzed capability of local pipeline infrastructure to receive large quantities of natural gas from proposed regasified LNG facilities in various states on

behalf of large LNG importer client, analyzed natural gas pipeline infrastructure and potential infrastructure expansions available to meet utility clients natural gas demand in Wisconsin.

- Selected Pipeline Hydraulic Modeling Work: Developed steady state and transient flow simulation models of portions of various pipeline systems on behalf of client companies. Models developed over past several years include models of Trunkline Gas System, ANR Pipeline Company, Florida Gas Transmission, Gulfstream Natural Gas, Guardian Pipeline LLC, Viking Transmission, Northern Natural Gas, Northern Border Pipeline Company, Centerpoint Energy Gas Transmission, Tennessee Gas Pipeline, Texas Gas Transmission, Texas Eastern Transmission, Gulf South Pipeline, Kinder Morgan Louisiana, Transco Pipeline and Acadian Pipeline.
- Long Term Fuel Supply Plan Development – Prepared long term fuel supply plans for power generation development clients operating in various states for use in attracting project financing and/or for filing with state commissions as required in regulatory process to obtain construction authorizations.
- Solicitation and Acquisition of Natural Gas Supplies and Services on behalf of End Use and Utility Clients – Actively involved in and directed natural gas supply and natural gas pipeline service capacity acquisition for utility and industrial clients. Developed gas supply RFPs, interacted with suppliers, negotiated agreement terms and negotiated contracts on behalf of clients. Supplies and services negotiated by Gas Supply Consulting, Inc. during 2012 on behalf of end use and/or utility clients represent approximately 1.2 Bcf/day of peak day natural gas demand.
- Consulting for End User Clients – Work with clients assessing natural gas use and requirements, prepare corporate gas supply purchasing plan outlining recommended corporate purchasing strategy. Structure recommended transactions regarding supply, service and price risk management programs. Implement purchasing program on behalf of clients through negotiation of transactions with various suppliers, utilities and service providers.
- Expert Witness Services – Provided Expert Witness testimony on behalf of Florida Power & Light Company with respect to (i) an Application of Florida Power & Light Company for authority to construct an intrastate natural gas pipeline in support of its electric generation facilities in Florida within Florida Public Service Commission Docket Number 090172-E1 and (ii) a proceeding concerning the impact of the introduction of LNG gas supplies on natural gas quality on the Florida Gas Transmission interstate pipeline system in FERC Docket Number RP04-249. Provided oral testimony regarding the appropriate calculation of ANR Pipeline Company's fuel retention percentages *on behalf of the Wisconsin Distributor Group* in technical conference in FERC Docket Number TM97-2-48. Developed independent report on behalf of ConocoPhillips evaluating capabilities of Texas Eastern Transmission pipeline expansion project (report was filed in FERC Dockets PF 12-19 and CP 13-84 in support of ConocoPhillips complaint with respect to Texas Eastern's TEAM 2014 expansion project). Provided expert support in mediation hearing on behalf of industrial client in gas pricing dispute with natural gas supplier.
- Consulting for Other Portions of the Energy Industry - Performed consulting services for a broad spectrum of clients, both domestically and internationally, including gas marketing companies, natural gas producers, transportation and storage service providers, and customer groups.

#### **United Gas Pipeline Company (currently Gulf South Pipe Line Company)**

July 1993 - June 1994

Position: Regional Manager (Supply Services)

- Attracted incremental supplies to the United Gas Pipeline system by structuring service transactions and aggressively pursuing incremental gas supplies;
- Maintained existing supplies on the United Gas Pipeline system by structuring and negotiating long-term transportation agreements with connected producers;
- Cultivated relationships with onsystem gas suppliers to insure that the needs of such suppliers were met on a timely and consistent basis.

**United Gas Pipeline Company (currently Gulf South Pipe Line Company)**

June 1989 - July 1993

Position: Staff Engineer (Operations Department)  
Associate Engineer (Engineering Department)  
Engineer (System Planning Department)

Filled various positions of increasing responsibility within the operations, engineering, planning and marketing departments of Koch Gateway Pipeline Company, and its predecessor United Gas Pipeline Company, over this four-year period

**EDUCATION**

University of Houston, Houston, Texas

Masters in Business Administration (Concentration in Finance), July 1993

University of Texas, Austin, Texas

Bachelor of Science Degree in Civil Engineering, May 1989

**OTHER**

Currently Licensed as a Professional Engineer in the State of Texas

## Florida Pipeline Capacity Load Factor Calculation

Month	Natural Gas Delivered to Consumers in Florida (Including Vehicle Fuel) (MMcf) <sup>1/</sup>	Average Daily Quantity of Natural Gas to Florida Consumers (MMcf/day)	FGT Capacity into Florida (MMcf/day) <sup>2/</sup>	Gulfstream Capacity into Florida (MMcf/day) <sup>3/</sup>	Cypress Capacity into Florida (MMcf/day) <sup>4/</sup>	Gulf South Capacity into Florida (MMcf/day) <sup>5/</sup>	Total Pipeline Capacity into Florida (MMcf/day)	Load Factor (Daily Use as % of Transport Capacity)
Jan-2012	96,510	3,113	3,074	1,300	336	190	4,900	64%
Feb-2012	90,032	3,105	3,074	1,300	336	190	4,900	63%
Mar-2012	108,410	3,497	3,074	1,300	336	190	4,900	71%
Apr-2012	106,888	3,563	3,074	1,300	336	190	4,900	73%
May-2012	120,597	3,890	3,074	1,300	336	190	4,900	79%
Jun-2012	115,962	3,865	3,074	1,300	336	190	4,900	79%
Jul-2012	128,268	4,138	3,074	1,300	336	190	4,900	84%
Aug-2012	126,556	4,082	3,074	1,300	336	190	4,900	83%
Sep-2012	118,721	3,957	3,074	1,300	336	190	4,900	81%
Oct-2012	107,747	3,476	3,074	1,300	336	190	4,900	71%
Nov-2012	90,232	3,008	3,074	1,300	336	190	4,900	61%
Dec-2012	93,774	3,025	3,074	1,300	336	190	4,900	62%
<b>Total</b>	<b>1,303,697</b>							<b>73%</b>
<b>Jun-Sept</b>								<b>82%</b>

<sup>1/</sup> Natural Gas Delivered to Consumers in Florida data sourced from consumption tables on website of the Energy Information Administration of the US Department of Energy (link: <http://tonto.eia.doe.gov/dnav/ng/hist/n3060fl2m.htm>).

<sup>2/</sup> Represents the design capacity through FGT's Compressor Stations 11 and 11A just upstream of the Florida state line and is sourced from Part A (Public and Non-Internet Public Information) of FGT's Annual System Flow Diagrams Report (Form 567) for the year 2007 as filed by FGT on June 1, 2008.

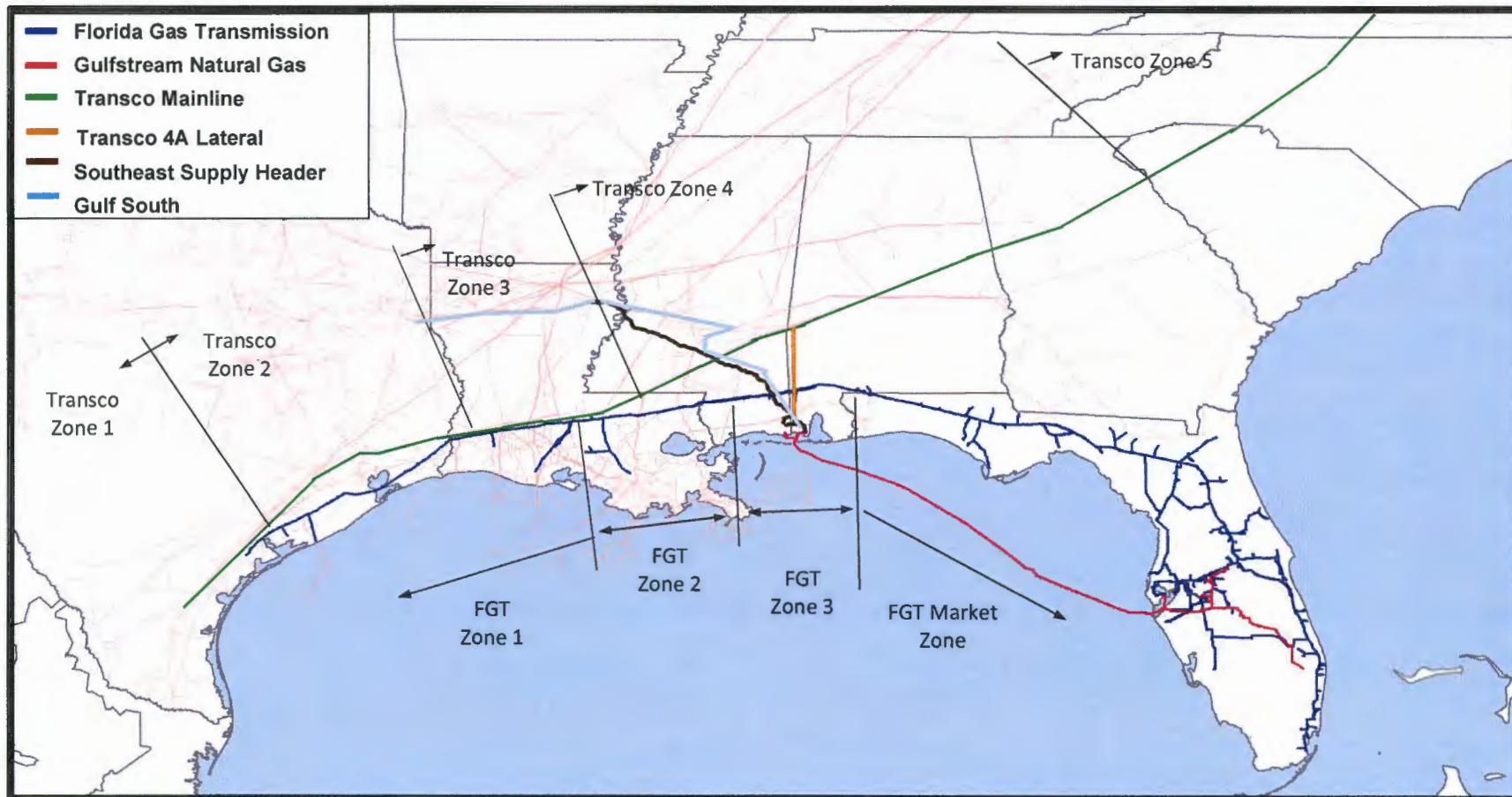
<sup>3/</sup> Gulfstream Capacity into Florida represents capacity as of September 1, 2008 listed as "Maximum Firm Capacity" through Gulfstream's Station 420 on Gulfstream's Electronic Bulletin Board under the tab entitled "Unsubscribed Capacity".

<sup>4/</sup> Cypress Capacity represents Phase I capacity in service as of May 1, 2007 and Phase II capacity in service as of May 1, 2008 as depicted on the Cypress Pipeline website at link [www.cypresspipeline.com](http://www.cypresspipeline.com).

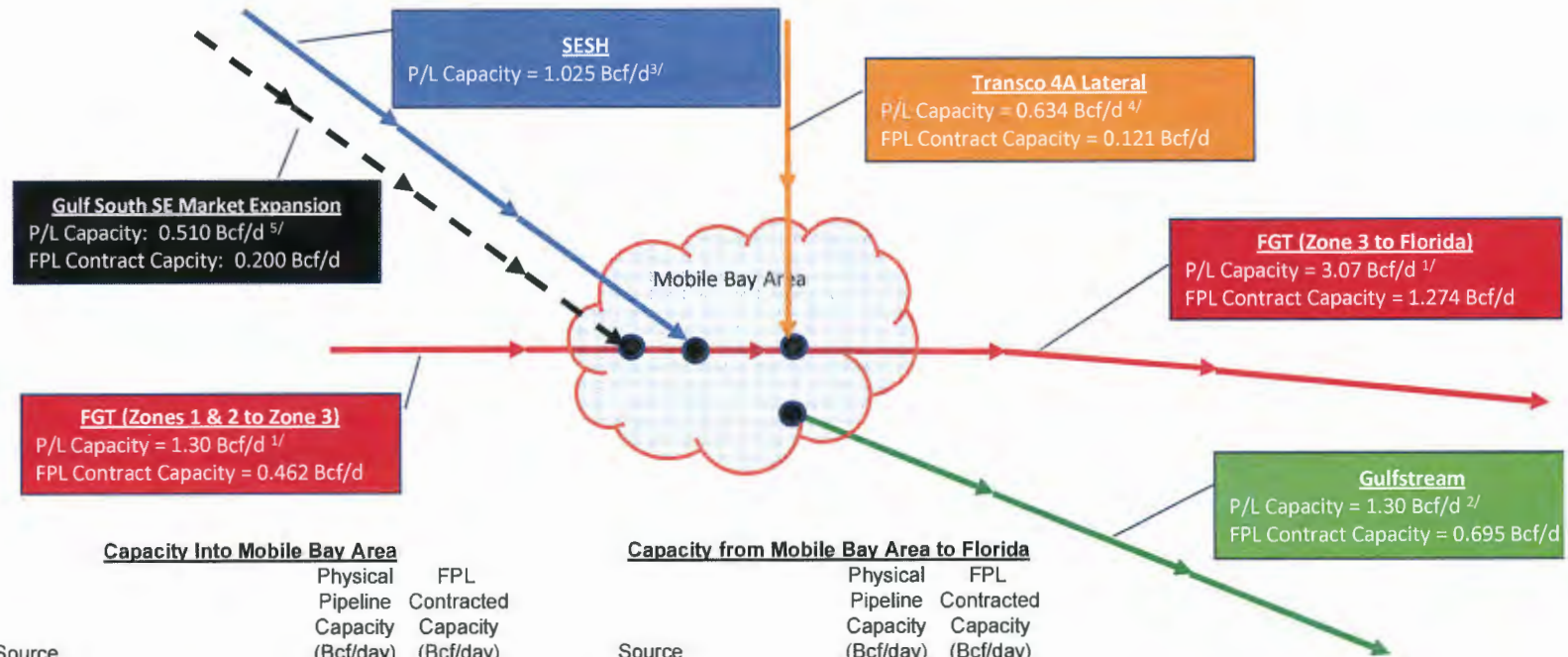
<sup>5/</sup> Gulf South capacity into Florida as per EIA report entitled "Interstate Pipeline Capacity on a State-to-State Level" available at the following weblink: [http://www.eia.doe.gov/pub/oil\\_gas/natural\\_gas/analysis\\_publications/ngpipeline/StatetoState.xls](http://www.eia.doe.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/StatetoState.xls).



## Illustration of Pipelines on which FPL Holds Firm Transportation Capacity



## Schematic Illustration of Capacities into and out of the Mobile Bay Area



### Capacity Into Mobile Bay Area

Source	Physical Pipeline Capacity (Bcf/day)	FPL Contracted Capacity (Bcf/day)
FGT ML (Zones 1 & 2)	1.330	0.462
SESH	1.025	0.580
Transco 4A Lateral	0.634	0.121
SE Mkt Expansion	<u>0.510</u>	<u>0.200</u>
<b>Total <sup>1/</sup></b>	<b>3.499</b>	<b>1.363</b>

### Capacity from Mobile Bay Area to Florida

Source	Physical Pipeline Capacity (Bcf/day)	FPL Contracted Capacity (Bcf/day)
FGT Mainline	3.070	1.274
Gulfstream	1.330	<u>0.695</u>
<b>Total <sup>1/</sup></b>	<b>4.400</b>	<b>1.969</b>

*Note:* With respect to total capacities, the balance of about 0.9 Bcf/day (4.40 Bcf/d less 3.499 Bcf/d) must be sourced from local Mobile Bay sources. With respect to FPL capacities, the balance of about 0.6 Bcf/day must be purchased from Mobile Bay area sources.

<sup>1/</sup> Per FGT's website (<http://fgttransfer.energytransfer.com/ipost/FGT>), capacity through FGT's Compressor Station 10 (mainline upstream of Mobile Bay) is 1.30 Bcf/day and through FGT's Compressor Station 11 (mainline downstream of Mobile Bay) is 3.075 Bcf/day.

<sup>2/</sup> Per Gulfstream's "Peak Day Capacity Report" filed with the FERC on February 25, 2013. Gulfstream's Peak Day Capacity was 1,300,000 MMBtu/day as of March 1, 2013.

<sup>3/</sup> Per Southeast Supply Header's "Peak Day Capacity Report" filed with the FERC on February 25, 2013. SESH's Peak Day Capacity was 1,025,000 MMBtu/day as of March 1, 2013.

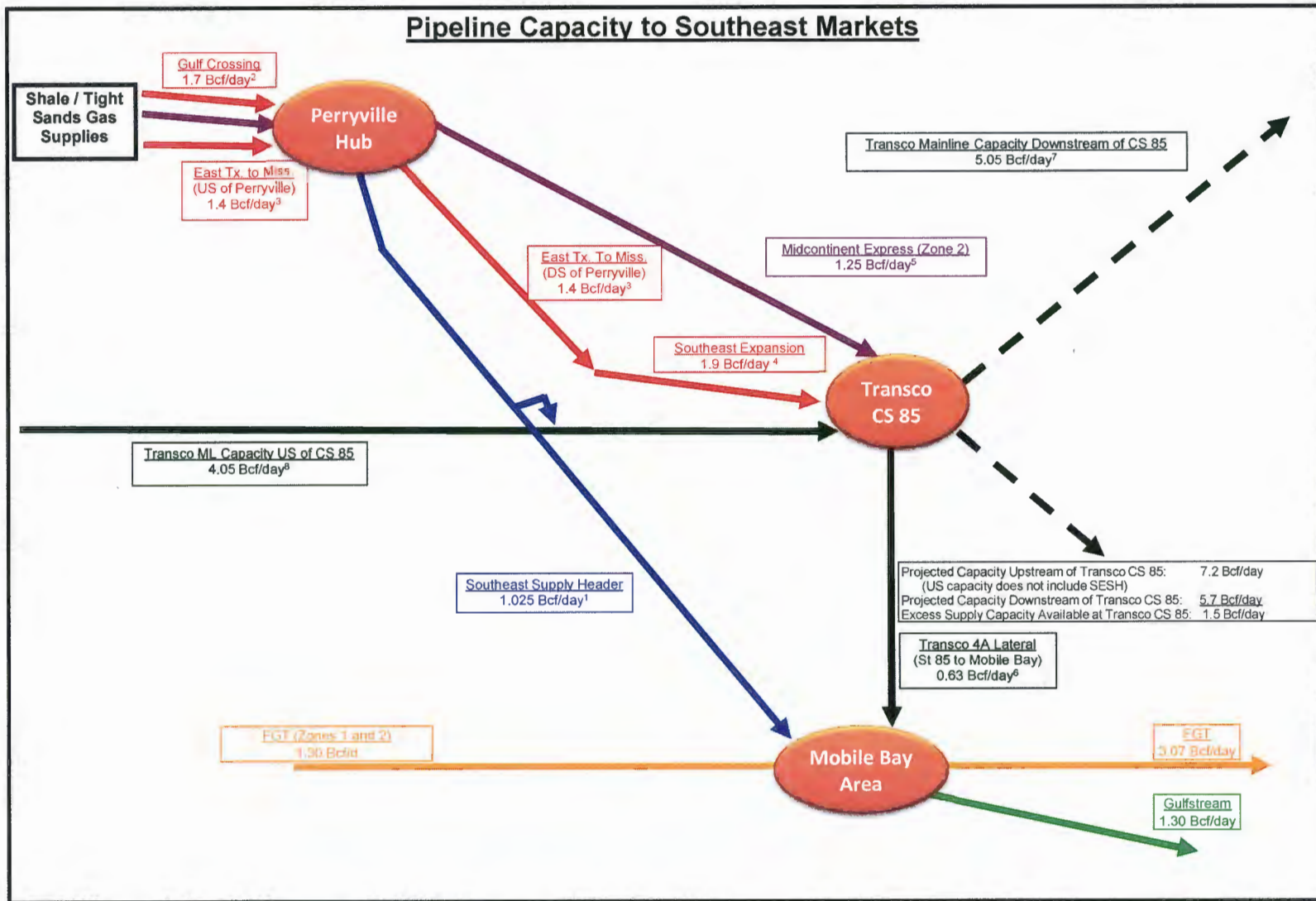
<sup>4/</sup> Per Transco's Mobile Bay South Expansion website ([http://staging.williams.com/Mobile\\_Bay\\_South/](http://staging.williams.com/Mobile_Bay_South/)), the combined capacity of Transco's Mobile Bay South I and Mobile Bay South II projects is 633,500 MMBtu/day.

<sup>5/</sup> Per Gulf South's Southeast Market Expansion project certificate application in FERC Docket No. CP13-96, the capacity of the Southeast Market Expansion project is 510,500 MMBtu/day.



**Transco "Operational" Map as illustrated on Transco Electronic Bulletin Board**





<sup>1</sup> FERC website: <http://www.ferc.gov/docs-filing/elibrary.asp> Southeast Supply Header Annual Peak Day Capacity Report for 2012 filed on March 1, 2013.

<sup>2</sup> Gulf Crossing website: <http://www.gulfcrossing.com/AboutUsGC.aspx>

<sup>3</sup> Boardwalk Gulf South Pipeline website: <http://www.bwpmp.com/expansionprojects.aspx?id=771>

<sup>4</sup> Boardwalk Gulf South Pipeline website: <http://www.gulfsouthpl.com/ExpansionProjects.aspx?id=787>

<sup>5</sup> Midcontinent Express Pipeline website: <http://pipeline.kindermorgan.com/infoposting/segment.aspx>

<sup>6</sup> Mobile Bay South Expansion website: [http://staging.williams.com/Mobile\\_Bay\\_South/](http://staging.williams.com/Mobile_Bay_South/)

<sup>7</sup> FERC website: [http://www.eia.gov/pub/oil\\_gas/natural\\_gas/analysis\\_publications/ngpipeline/interstate.html](http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/interstate.html)

(MEP Segment Capacity Report Dated 6/11/2013)

<sup>8</sup> Sum of 2012 capacity of 4.75 per EIA "state to state" pipeline capacity report for Transco from Alabama to Georgia plus 0.225 Bcf/day associated with MidSouth Expansion II placed in service in June 2013.

EIA website: [http://www.eia.gov/pub/oil\\_gas/natural\\_gas/analysis\\_publications/ngpipeline/interstate.html](http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/interstate.html)

EIA - "state to state" pipeline capacity from MS to AL for Transco

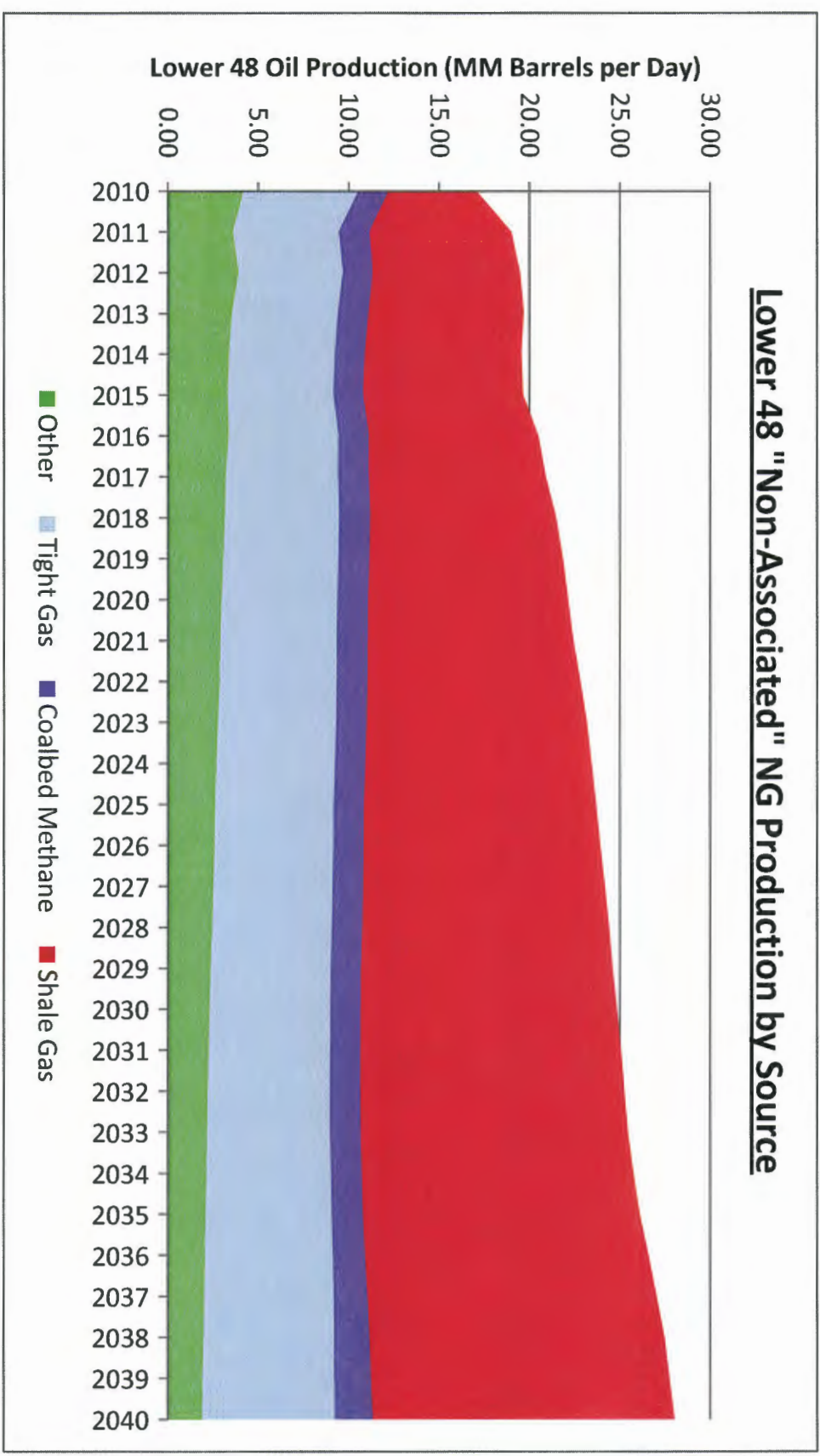
EIA - "state to state" pipeline capacity from AL to GA for Transco

Transco MidSouth Expansion II: FERC Website <http://elibrary.ferc.gov/idmws/search/fercgensearch.asp>

Transco Mid South Expansion (CP11-88)



**Lower 48 "Non-Associated" NG Production by Source**



Natural Gas Production Forecast: Production Forecast per Table 14 of the 2013 Annual Energy Outlook as published by the Energy Information Administration ("EIA") of the US Department of Energy ("DOE").

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
United States Total	21.33	23.00	23.91	24.00	23.85	24.03	25.13	25.40	25.92	26.31	26.61	26.94	27.39	27.75	28.16	28.59
Lower 48 Onshore	18.54	20.54	21.40	21.77	21.72	21.84	22.75	23.09	23.60	23.97	24.27	24.55	24.92	25.26	25.48	25.67
Associated-Dissolved	1.47	1.54	1.94	2.08	2.16	2.21	2.26	2.19	2.14	2.12	2.14	2.14	2.12	2.09	2.05	1.99
Non-Associated	17.07	19.00	19.46	19.69	19.56	19.64	20.49	20.90	21.47	21.85	22.13	22.42	22.80	23.17	23.43	23.67
Tight Gas	6.34	5.86	5.76	5.89	5.85	5.85	6.08	6.21	6.31	6.37	6.40	6.44	6.49	6.54	6.56	6.56
Shale Gas	4.86	7.85	8.13	8.60	8.66	8.85	9.37	9.79	10.28	10.70	11.05	11.38	11.77	12.18	12.52	12.84
Coalbed Methane	1.69	1.71	1.67	1.69	1.67	1.64	1.70	1.71	1.73	1.73	1.71	1.70	1.70	1.69	1.67	1.66
Other	4.18	3.58	3.89	3.51	3.38	3.29	3.34	3.19	3.15	3.05	2.97	2.90	2.85	2.77	2.68	2.61
Lower 48 Offshore	2.44	2.11	2.19	1.92	1.83	1.89	2.09	2.03	2.03	2.05	2.07	2.12	2.20	2.22	2.18	2.19
Associated-Dissolved	0.59	0.54	0.54	0.51	0.55	0.57	0.65	0.64	0.65	0.67	0.66	0.65	0.66	0.66	0.64	0.64
Non-Associated	1.85	1.58	1.65	1.41	1.27	1.32	1.44	1.38	1.38	1.38	1.41	1.46	1.54	1.56	1.54	1.55
Alaska	0.35	0.35	0.32	0.31	0.30	0.30	0.29	0.29	0.29	0.28	0.28	0.27	0.27	0.27	0.50	0.73

Note: Data Sourced from "Table 14 - Oil and Gas Supply" of 2013 Annual Energy Outlook as published by the Energy Information Administration ("EIA") of the US Department of Energy ("DOE")

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
United States Total	28.95	29.34	29.47	29.59	29.79	30.07	30.40	30.70	30.99	31.35	31.67	31.99	32.39	32.81	33.14
Lower 48 Onshore	25.79	25.89	26.01	26.11	26.26	26.46	26.64	26.79	27.05	27.35	27.79	28.21	28.62	28.85	29.12
Associated-Dissolved	1.86	1.72	1.61	1.51	1.43	1.40	1.38	1.34	1.30	1.26	1.21	1.17	1.14	1.11	1.09
Non-Associated	23.92	24.17	24.40	24.60	24.83	25.07	25.26	25.45	25.75	26.10	26.58	27.04	27.48	27.75	28.03
Tight Gas	6.59	6.61	6.61	6.65	6.67	6.71	6.75	6.79	6.87	6.96	7.07	7.16	7.23	7.28	7.34
Shale Gas	13.10	13.39	13.66	13.92	14.17	14.41	14.62	14.81	15.05	15.33	15.68	16.02	16.33	16.52	16.70
Coalbed Methane	1.67	1.67	1.68	1.69	1.69	1.69	1.70	1.70	1.71	1.73	1.78	1.87	1.96	2.04	2.11
Other	2.57	2.51	2.46	2.35	2.31	2.25	2.19	2.15	2.12	2.07	2.04	2.00	1.96	1.90	1.87
Lower 48 Offshore	2.19	2.25	2.26	2.29	2.34	2.42	2.57	2.72	2.76	2.81	2.71	2.60	2.59	2.78	2.85
Associated-Dissolved	0.63	0.63	0.62	0.61	0.60	0.62	0.65	0.70	0.72	0.74	0.70	0.67	0.68	0.72	0.74
Non-Associated	1.56	1.61	1.64	1.69	1.73	1.80	1.92	2.01	2.03	2.07	2.01	1.93	1.91	2.06	2.11
Alaska	0.97	1.20	1.20	1.19	1.19	1.19	1.19	1.19	1.18	1.18	1.18	1.18	1.18	1.18	1.18

Note: Data Sourced from "Table 14 - Oil and Gas Supply" of 2013 Annual Energy Outlook as published by the Energy Information Administration ("EIA") of the US Department of Energy ("DOE")

**Total Industry - 2012 Fuel Use for Generation by State per EIA**

State	Coal (Short Tons)	State	Natural Gas (Mcf)	State	Other Gases (Billion Btu)	State	Petroleum (Barrels)
TX	97,589,855	TX	1,633,121,974	TX	20,755	TX	3,185,546
FL	19,729,375	FL	1,140,555,646	FL	31	FL	2,608,114
CA	587,356	CA	891,761,432	CA	9,954	CA	584,708
LA	14,747,813	LA	496,506,971	LA	8,298	LA	5,679,546
NY	2,172,932	NY	495,953,477	NY	-	NY	1,062,517
AL	23,126,371	AL	405,221,205	AL	8,484	AL	174,971
PA	40,707,963	PA	387,505,943	PA	9,212	PA	633,729
OK	18,465,386	OK	320,580,198	OK	-	OK	20,074
GA	20,946,904	GA	312,197,895	GA	-	GA	487,470
MS	5,241,121	MS	302,794,885	MS	-	MS	29,158
AZ	21,529,840	AZ	229,458,963	AZ	-	AZ	78,839
NJ	832,529	NJ	208,399,784	NJ	1,491	NJ	86,350
VA	6,296,293	VA	190,005,147	VA	-	VA	608,537
NV	2,257,830	NV	188,363,050	NV	67	NV	40,937
MA	929,810	MA	182,405,679	MA	-	MA	274,926
OH	37,440,766	OH	171,350,767	OH	1,404	OH	2,461,659
MI	30,025,790	MI	169,366,962	MI	1,541	MI	512,613
NC	20,790,915	NC	151,636,030	NC	-	NC	364,463
AR	17,047,579	AR	124,996,158	AR	-	AR	56,450
CT	76,020	CT	119,559,782	CT	-	CT	249,088
SC	11,745,567	SC	114,562,795	SC	-	SC	199,288
IN	46,658,372	IN	114,325,254	IN	18,399	IN	1,249,564
IL	49,147,860	IL	91,792,203	IL	2,799	IL	131,260
WI	19,480,703	WI	88,158,797	WI	-	WI	480,716
CO	19,119,535	CO	86,331,503	CO	-	CO	38,521
OR	1,583,129	OR	81,942,537	OR	-	OR	12,674
NM	14,452,448	NM	72,584,707	NM	-	NM	95,077
TN	17,730,911	TN	64,064,248	TN	74	TN	296,308
RI	-	RI	61,382,422	RI	-	RI	26,993
DE	694,279	DE	60,821,067	DE	1,410	DE	46,879
MN	13,934,281	MN	57,834,445	MN	-	MN	62,960
MO	42,423,574	MO	51,644,818	MO	-	MO	161,063
MD	6,930,410	MD	51,118,929	MD	2,206	MD	244,393
UT	14,200,409	UT	51,031,866	UT	193	UT	74,155
NH	519,684	NH	50,528,556	NH	-	NH	57,458
ME	11,189	ME	44,790,687	ME	-	ME	220,614
AK	527,886	AK	43,497,432	AK	38	AK	1,814,021
WA	2,511,235	WA	40,280,838	WA	2,468	WA	61,630
KY	38,885,136	KY	33,055,270	KY	-	KY	2,977,612
KS	17,759,419	KS	32,212,463	KS	-	KS	76,891
IA	21,790,359	IA	16,647,085	IA	-	IA	230,937
ID	15,952	ID	14,133,397	ID	-	ID	57
NE	15,126,003	NE	8,587,423	NE	-	NE	38,820
WY	26,366,362	WY	3,601,992	WY	1,597	WY	92,564
SD	1,982,371	SD	3,292,007	SD	-	SD	22,161
WV	29,546,019	WV	2,402,308	WV	180	WV	250,545
MT	9,281,030	MT	1,572,595	MT	0	MT	893,017
DC	-	DC	1,114,939	DC	-	DC	25,513
ND	22,978,940	ND	114,642	ND	174	ND	70,436
VT	-	VT	38,309	VT	-	VT	27,794
HI	754,946	HI	-	HI	183	HI	11,105,667
<b>Total</b>	<b>826,700,457</b>	<b>Total</b>	<b>9,465,207,482</b>	<b>Total</b>	<b>90,961</b>	<b>Total</b>	<b>40,285,282</b>



**Comparison of Construction Costs of Various Pipeline Projects vs. FPL RFP Response Estimated Costs**

Sponsor	Project	FERC Docket	Construction Completion Year	Estimate Source (Document Filed in Support of FERC Certificate Application Docket)	Pipeline Diameter	Loop or Greenfield	Calculated Unit Pipe Cost (\$MM/Mile)	Calculated HP Unit Cost (\$/HP)	Unit Cost Projections In 2017 Dollars	
									Pipeline Unit Cost (\$/Mile)	HP Cost (\$/HP)
Southeast Supply Header	SESH Pipeline	CP07-45	2008	Post Construction Report	36 in / 42 in.	Greenfield	\$ 3.58	\$2,410	\$4.47	\$3,010
Florida Gas Transmission	FGT Phase VIII	CP09-17	2011	Post Construction Report	24 - 42	Greenfield/Loop	\$ 4.31	\$1,713	\$5.00	\$1,987
ETC Tiger Pipeline LLC	ETC Tiger Pipeline Project	CP09-460	2011	Post Construction Report	42 in.	Greenfield	\$ 3.66	\$2,032	\$4.25	\$2,356
Ruby Pipeline, L.L.C.	Ruby Pipeline, L.L.C.	CP09-54	2011	Post Construction Report	42 in.	Greenfield	\$ 5.03	\$1,435	\$5.83	\$1,664
Fayetteville Express Pipeline, LLC	Fayetteville Express Pipeline	CP09-443	2011	Post Construction Report	42 in.	Greenfield	\$ 4.07	\$1,924	\$4.72	\$2,231
Tennessee Gas Pipeline	Northeast Upgrade Project	CP11-161	2013	Exhibit K	30 in.	Loop	\$ 7.17	\$3,807	\$7.92	\$4,202
Gulf South	Southeast Market Expansion	CP13-96	2014	Exhibit K	24 in. / 30 in.	Greenfield/Loop	\$ 2.87	\$2,201	\$3.09	\$2,371
Texas Eastern	TEAM 2014	CP13-84	2014	Exhibit K	36 in.	Loop	\$ 6.85	\$3,687	\$7.37	\$3,971

FPL RFP Bidder Response	RFP Project Response	Pipeline Diameter	Loop or Greenfield	Calculated Unit Pipe Cost (\$MM/Mile)	Calculated HP Unit Cost (\$/HP)	Pipeline Unit Cost (\$/Mile)	HP Cost (\$/HP)
Bidder 1	Northern Pipeline Project - Phase I (400,000 MMBtu/day in 2017)	36	Greenfield				
Bidder 2	Northern Pipeline Project - Phase I (400,000 MMBtu/day in 2017)	36	Greenfield				
Bidder 3	Northern Pipeline Project - Phase I (400,000 MMBtu/day in 2017)	30	Greenfield				
Bidder 4	Northern Pipeline Project - Phase I (400,000 MMBtu/day in 2017)	36	Greenfield				
Bidder A (i)	Southern Pipeline Project - Phase I (400,000 MMBtu/day in 2017)	30	Greenfield				N/A
Bidder A (ii)	Southern Pipeline Project - Phase I (400,000 MMBtu/day in 2017)	36 / 30	Greenfield				N/A
Bidder A (iii)	Southern Pipeline Project - Phase I (400,000 MMBtu/day in 2017)	36	Greenfield				N/A
Bidder B (indicative estimate)	Southern Pipeline Project - Phase I (400,000 MMBtu/day in 2017)	30	Greenfield				N/A

**GSC - NPV of Gas Cost Analysis - Base (Risk Adjusted) Demand Profile Scenario**  
**Summary Comparisons of Net Present Value (\$2013) of Total Delivered Natural Gas Costs**

Combined Project Number (per FPL CPVRR Analysis)	Northern Pipeline Proposal Bidder Number	Southern Pipeline Proposal Bidder Number	Underlying Commodity Gas Cost (\$ Billions)	Pipeline Related Costs in \$ Billions			Total Delivered Cost of Gas (\$Billions)	Incremental Cost vs. Low Bid (\$MM)
				Combined Project Fixed Costs	Combined Project Variable Costs (Fuel and Usage Charges)	Total Pipeline Related Costs		
5	1	Ai	\$ 78.95	\$ 3.89	\$ 2.80	\$ 6.69	\$ 85.64	\$ 38.85
1	1	Aii	\$ 78.95	\$ 3.87	\$ 2.78	\$ 6.65	\$ 85.60	\$ -
9	1	Aiii	\$ 78.95	\$ 3.91	\$ 2.78	\$ 6.69	\$ 85.64	\$ 41.60
8	2	Ai	\$ 78.93	\$ 5.79	\$ 2.40	\$ 8.19	\$ 87.13	\$ 1,528.97
4	2	Aii	\$ 78.93	\$ 5.78	\$ 2.38	\$ 8.15	\$ 87.09	\$ 1,490.27
12	2	Aiii	\$ 78.93	\$ 5.82	\$ 2.38	\$ 8.20	\$ 87.13	\$ 1,531.87
7	3	Ai	\$ 78.95	\$ 4.93	\$ 2.70	\$ 7.64	\$ 86.58	\$ 985.08
3	3	Aii	\$ 78.95	\$ 4.92	\$ 2.68	\$ 7.60	\$ 86.55	\$ 946.46
11	3	Aiii	\$ 78.95	\$ 4.96	\$ 2.68	\$ 7.64	\$ 86.59	\$ 988.06
6	4	Ai	\$ 78.93	\$ 4.96	\$ 2.36	\$ 7.33	\$ 86.26	\$ 662.36
2	4	Aii	\$ 78.93	\$ 4.95	\$ 2.34	\$ 7.29	\$ 86.22	\$ 623.84
10	4	Aiii	\$ 78.93	\$ 4.99	\$ 2.34	\$ 7.33	\$ 86.26	\$ 665.44

**GSC - NPV of Gas Cost Analysis - Turkey Point Nuclear Delay Scenario**  
**Summary Comparisons of Net Present Value (\$2013) of Total Delivered Natural Gas Costs**

Combined Project Number (per FPL CPVRR Analysis)	Northern Pipeline Proposal Bidder Number	Southern Pipeline Proposal Bidder Number	Underlying Commodity Gas Cost (\$ Billions)	Pipeline Related Costs in \$ Billions			Total Delivered Cost of Gas (\$Billions)	Incremental Cost vs. Low Bid (\$MM)
				Combined Project Fixed Costs	Combined Project Variable Costs (Fuel and Usage Charges)	Total Pipeline Related Costs		
5	1	Ai	\$ 80.67	\$ 3.85	\$ 2.89	\$ 6.73	\$ 87.40	\$ 52.45
1	1	Aii	\$ 80.67	\$ 3.82	\$ 2.86	\$ 6.68	\$ 87.35	\$ -
9	1	Aiii	\$ 80.67	\$ 3.86	\$ 2.86	\$ 6.72	\$ 87.39	\$ 39.87
8	2	Ai	\$ 80.66	\$ 5.62	\$ 2.46	\$ 8.08	\$ 88.74	\$ 1,389.29
4	2	Aii	\$ 80.66	\$ 5.59	\$ 2.44	\$ 8.03	\$ 88.69	\$ 1,336.50
12	2	Aiii	\$ 80.66	\$ 5.63	\$ 2.44	\$ 8.07	\$ 88.73	\$ 1,376.37
7	3	Ai	\$ 80.67	\$ 4.92	\$ 2.78	\$ 7.70	\$ 88.37	\$ 1,016.60
3	3	Aii	\$ 80.67	\$ 4.89	\$ 2.75	\$ 7.64	\$ 88.32	\$ 964.42
11	3	Aiii	\$ 80.67	\$ 4.93	\$ 2.75	\$ 7.68	\$ 88.36	\$ 1,004.29
6	4	Ai	\$ 80.66	\$ 4.85	\$ 2.42	\$ 7.26	\$ 87.92	\$ 573.60
2	4	Aii	\$ 80.66	\$ 4.82	\$ 2.39	\$ 7.21	\$ 87.87	\$ 521.03
10	4	Aiii	\$ 80.66	\$ 4.86	\$ 2.39	\$ 7.25	\$ 87.91	\$ 560.90

