

# City of Berlin's Motion for Confidential Treatment

## **Attachment A**



**Brown, Olson & Gould**  
Attorneys at Law

David J. Shulock, Esquire  
Email: dshulock@bowlaw.com

December 28, 2010

**VIA E-MAIL**

Keriann Roman, Esq.  
Donahue, Tucker & Ciandella, PLLC  
225 Water Street  
Exeter, NH 03833

Re: DE 10-195 Public Service Company of New Hampshire  
Petition for Approval of Power Purchase Agreement with  
Laidlaw Berlin BioPower, LLC  
Wood-Fired Independent Power Producers Discovery-Set 1 City of Berlin

Dear Ms. Roman:

Attached are the Wood-Fired Independent Power Producers Data Request, Set 1 in the above-captioned docket.

Please call if you have any questions.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'David J. Shulock'.

David J. Shulock, Esq.

DJS/sas  
Enclosure  
cc: Service List

STATE OF NEW HAMPSHIRE  
BEFORE THE  
NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

Re: Public Service Company of New Hampshire ) Docket No. DE 10-195  
Purchase Power Agreement )  
with Laidlaw Berlin BioPower, LLC )

---

Data Request, Set 1, Propounded by the Wood-Fired Independent  
Power Producers to be Answered by the City of Berlin

---

Please respond to the following data requests in writing, under oath, and in accordance with the procedural schedule in this docket. Copies of all responses and related documents should be provided to:

David J. Shulock, Esquire  
Robert A. Olson, Esquire  
Peter W. Brown, Esquire  
David K. Wiesner, Esquire  
Brown, Olson & Gould, P.C.  
2 Delta Drive, Suite 301  
Concord, NH 03301-7426  
E-Mail: [dshulock@bowlaw.com](mailto:dshulock@bowlaw.com);  
[rolson@bowlaw.com](mailto:rolson@bowlaw.com); [prown@bowlaw.com](mailto:prown@bowlaw.com);  
[dwiesner@bowlaw.com](mailto:dwiesner@bowlaw.com)

Instructions, Definitions, Form, and Content of Data Responses

1. "Document" or "documents" means any written or printed information regardless of the medium upon which it is recorded, including but not limited to: testimony and exhibits, memoranda, correspondence, letters, reports (including drafts, preliminary, intermediate, and final reports), surveys, analyses, reviews, evaluations, studies (including economic and market studies), summaries, comparisons, tabulations, charts, books, pamphlets, photographs, maps, bulletins, corporate or other minutes, notes, diaries, log sheets, ledgers, transcripts, microfilm, microfiche, computer data, computer files, computer diskettes, computer tapes, computer inputs, computer outputs and printouts, vouchers, accounting statements, budgets, workpapers, engineering diagrams (including "one-line" diagrams), mechanical and electrical recordings, telephone and telegraphic

communications, speeches, and all other records, written, electrical, mechanical, or otherwise and drafts of any of the above.

2. "You," "your," or "the City of Berlin" means the City of Berlin, New Hampshire, its employees, officers, agents, attorneys, affiliates, parents, partners, or subsidiaries.
3. Preceding each response, please identify any individual(s) contributing any information or phraseology contained in the response and identify the individual(s) who will be responsible for cross-examination concerning the response.
4. If requested data is entirely duplicative of that furnished in response to another data request in this proceeding, it is only necessary to identify the response where the information is contained. However, if the requested data was filed in another proceeding, please provide a copy with your response in this case.
5. If any data request is unclear or imprecise, please request clarification, by telephone, from the above-identified individual, prior to furnishing unnecessary data or an inadequate response.
6. If you cannot answer a data request in full, after exercising due diligence to secure the information necessary to do so, state the answer to the extent possible, state why you cannot answer the data request in full, and state what information or knowledge you have concerning the unanswered portions.
7. These data requests are continuing in nature and require supplemental responses when further or different information with respect to the same is obtained.
8. Please reprint each request with your response to that request beginning on a separate page.
9. If the City of Berlin does not have a "document" which is responsive in any way to any portion of this data request, kindly so indicate.
10. When answering these data requests you are requested to furnish all information and documents in your possession or available to you, including that in the possession of your attorneys, investigators, employees, agents, representatives or any other person acting on your behalf, and not merely such information known by you on personal knowledge.
11. If you withhold any documents or information sought by these data requests by reason of claim of privilege or work-product doctrine, a privilege log is to be furnished with your written response to these data requests identifying each such document or such information together with the following:
  - a. The date of the document or privileged communication;
  - b. In the case of a document, the name or names of its

author, authors or preparers, including the title, employer and address of each;

- c. In the case of a document, the name of each person who has received or has seen the document in any form;
- d. In the case of a document, the name, title, employer, and address of each person having custody of the document in any form, including, without limitation, the original and any copies;
- e. In the case of any allegedly privileged communication, the names, addresses, and titles of any participants in the communication, any persons present during any part of the communication, and any persons who have since been told or otherwise made aware of any part of the communication;
- f. In the case of any allegedly privileged communication, describe by date and nature any document containing or memorializing any part of the communication and provide the information required under paragraph 11(d) above;
- g. The subject matter of the document or communication; and
- h. The basis for your assertion of the privilege or work-product doctrine.

12. If any document sought by these data requests has been destroyed, a list is to be furnished with your written response to these data requests identifying each such document which has been destroyed, together with the following information:

- a. The date of the document;
- b. The name or names of its author, authors, or preparers, including the title, employer and address of each;
- c. The name of each person who has received or has seen the document in any form;
- d. The name, title, employer, and address of each person having custody of the document in any form,

including, without limitation, the original and any copies;

- e. A brief description of the documents, including a detailed summary of the contents thereof;
- f. The date of and reason for destruction;
- g. The name of the person or persons who authorized the destruction of the document, including his or her title, employer, and address; and
- h. The name of the person or persons who destroyed the document, including his or her title, employer and address.

13. In responding to the data requests:

- a. Identify the person answering each of these data requests.
- b. Identify each and every individual who supplied any information in response to each of these data requests.
- c. Identify each and every document to which you referred in preparing responses to these data requests. Note that "document" is a defined term as used in these data requests.

DE 10-195  
Public Service Company of New Hampshire  
Petition for Approval of Power Purchase Agreement with  
Laidlaw Berlin BioPower, LLC

Wood-Fired Independent Power Producers  
Discovery Set 1 to the City of Berlin

- 1-1. Please explain the factual basis of Mr. Sansoucy's opinion that "the [Laidlaw] plant is correctly sited in the proper location to provide the most cost effective benefits to the ratepayers . . ." See Testimony of George E. Sansoucy at 6-7.
- 1-2. Please provide all studies, reports, projections, forward market prices, analyses and the like upon which Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC relied upon in forming the opinion referenced in data request 1-1 above. For any materials prepared by Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC, please state the date that such materials were prepared.
- 1-3. Is it Mr. Sansoucy's opinion that the high gas price, high capacity price, and/or cap and trade scenarios referenced on page 9 of his testimony are more likely than not to occur? Please explain the factual bases relating to each of these opinions.
- 1-4. Please provide all calculations and work papers that Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC prepared to arrive at the figure of \$300,000,000 in ratepayer savings referenced on page 9 of his testimony, and state when each such calculation and work paper was prepared.
- 1-5. Please provide all studies, reports, projections, forward market prices, analyses and the like upon which Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC relied upon in forming the opinions referenced in data request 1-3 above. For any materials prepared by Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC, please state the date that the materials were prepared.













11. The fact that the plant owns a water treatment plant with an operating capacity of close to 50,000,000 gallons per day if necessary, a penstock, and a water intake structure on the Androscoggin River substantially enhances the appropriateness of siting in the City of Berlin and enables the plant to consider long term plans for expansion or subsequent relief of the City of Berlin's water treatment facility, if necessary.
12. The site is adjacent to the Mt. Carberry landfill. The Mt. Carberry landfill, originally developed by James River Paper and subsequent ownership by Crown Vantage and American Tissue, has been transferred to the Androscoggin Valley Regional Refuse Disposal District and is operated as a super regional landfill in northern New Hampshire. It has become the second largest operating landfill in the state and as such provides an excellent opportunity for the plant to cost effectively dispose of its ash, should it choose to do so, with a minimal amount of trucking. This enhances the proper location of the site being in the City of Berlin.
13. In the same vein, the North Country is one of the remaining agricultural areas of the state, especially the Connecticut River Valley, from Colebrook south. This enables the company to work with and consider utilizing the ash for agricultural fertilizer with a ready need in the immediate area. This too enhances the proper location of the site being in the City of Berlin.
14. The City of Berlin and the surrounding area has a highly skilled yet reasonably priced labor force. The labor force has been trained in heavy machinery operation, maintenance, building maintenance, and a number of local residents were boiler operators in the mill. The Laidlaw plant is correctly sited in the City of Berlin to take advantage of and provide employment opportunities to an already skilled labor force in the immediate area.
15. This plant is correctly sited in the City of Berlin in part because it is generally well received in a region receptive to a continuation of the forest products industry and forest management. This plant generally has a high acceptance level among municipal and regional public officials, business leaders, and the local population.
16. The plant is properly sited in part because of its potential opportunity to utilize rail which goes right through the City of Berlin adjacent to the Laidlaw plant. This mill property at one time was served with a rail spur. The rail easements still exist through the property, the rail bridges still exist, and should rail service for both the input of biomass fuels and the export of either product, ash, or byproducts for additional uses become cost effective or desirable, the plant is correctly sited to take advantage of rail. Few, if any, wood plants in the State of New Hampshire have the opportunity to use rail, enhancing the correctness of siting this plant in the City of Berlin.

17. This plant is correctly sited due in part to a community receptive to the development of a PILOT agreement (Payment In Lieu of Taxes). A PILOT agreement is beneficial to the rate payers in that it helps stabilize the price of the electricity from this plant, and/or allows for the negotiation of a contract which stabilizes that price. The City of Berlin is receptive to the development, negotiation, and consummation of a long term PILOT agreement to coincide with the term of the PPA. The benefit of a PILOT is directly related to this plant being correctly sited in the City of Berlin and the City's desire to obtain certainty and stability in its tax payments as well as offering stability in the tax cost for the plant.
18. The siting of this plant in the City of Berlin may directly impact the rate payers of Public Service by helping to reduce or eliminate the need for the Lost Nation combustion turbine peaking jets located in Groveton, New Hampshire on the same 115,000 KV line as the Laidlaw plant develops a history providing high and substantial capacity factors for the generation of electricity in this region.
19. This plant will provide enhanced industrial activity which benefits Public Service's rate payers by the direct use of more electricity in the region as a result of an uptick in industrial activity. The Berlin / Gorham region has very little industrial land being valley communities along river corridors. The industrial land it does have, namely the Laidlaw site and the site above Laidlaw, the Rt. 110 corridor, and the Berlin Industrial Park is adequately served and ready for substantial additional industrial activity which will use more electricity, thereby reducing cost to all rate payers in the state, all else being equal. These areas, including Gorham, are served by four (4) sewer plants, three (3) water plants, and the development of the Laidlaw plant will be able to provide additional steam and heat for enhanced industrial development and activity in the area. Any additional activity which produces greater use and sales of electricity by Public Service, the franchisee in this region, directly benefits all rate payers of Public Service.
20. The rate payers of Public Service are benefited by the contracting and consummation of Class 1 RECs which Public Service is required to purchase under New Hampshire law and the rate payers are required to pay for under New Hampshire law. To the extent that there is a substantial capital savings related to the existing infrastructure, the ability to tap into water and sewer infrastructure, electric infrastructure, labor, landfill, road systems, agricultural reuse of ash, moderate tax payments, and potentially enhancing additional industrial activity, the Class 1 RECs required to be purchased are likely to be less expensive than otherwise would be required of the rate payers of Public Service, thereby enhancing the proper siting of this plant in the City of Berlin.

DE 10-195

Public Service Company of New Hampshire  
Petition for Approval of Power Purchase Agreement with  
Laidlaw Berlin BioPower, LLC

City of Berlin's Response to  
Wood-Fired Independent Power Producers  
Discovery Set 1

Date Received: December 28, 2010  
Request No.: 1-2

Date of Response: January 10, 2011  
Witness: George E. Sansoucy, P.E.

REQUEST:

Please provide all studies, reports, projections, forward market prices, analyses and the like upon which Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC relied upon in forming the opinion referenced in data request 1-1 above. For any materials prepared by Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC, please state the date that such materials were prepared.

RESPONSE:

The requested information, which includes power line franchise maps, City tax maps, recorded rights-of-way, plans of the railroad system and the railroad water main, are all public information available at the PUC or the City of Berlin.

DE 10-195

Public Service Company of New Hampshire  
Petition for Approval of Power Purchase Agreement with  
Laidlaw Berlin BioPower, LLC

City of Berlin's Response to  
Wood-Fired Independent Power Producers  
Discovery Set 1

Date Received: December 28, 2010  
Request No.: 1-3

Date of Response: January 10, 2011  
Witness: George E. Sansoucy, P.E.

REQUEST:

Is it Mr. Sansoucy's opinion that the high gas price, high capacity price, and/or cap and trade scenarios referenced on page 9 of his testimony are more likely than not to occur? Please explain the factual bases relating to each of these opinions.

RESPONSE:

Yes, gas prices are expected to rise, capacity price is expected to rise, and it is more likely than not that during the life of this PPA, some form of carbon constraint will be imposed or implemented in the electrical generation universe in New England over the next twenty (20) years. The basis for this opinion is in part based on documents prepared by the NE ISO which are available at [www.iso-ne.com/genrtion\\_resrcs/snl\\_clmd\\_cap/](http://www.iso-ne.com/genrtion_resrcs/snl_clmd_cap/), [www.iso-ne.com/markets/hstdata/rpts/net\\_eng\\_peak\\_load\\_sorc/index.html](http://www.iso-ne.com/markets/hstdata/rpts/net_eng_peak_load_sorc/index.html), documents prepared by the Northeast Gas Association at [www.northeastgas.org/index.php?option=com\\_content&task=view&id=100](http://www.northeastgas.org/index.php?option=com_content&task=view&id=100), and documents in Mr. Sansoucy's files related to power plants valued, which are subject to confidentiality, and the "Oil and Gas Journal".

Other documents related to this response are proprietary and confidential and are not subject to disclosure under RSA 91-A. A motion for confidential treatment will be filed with the Commission. These confidential documents include company files retained by George E. Sansoucy, P.E., LLC from other, third party, power generation and gas pipeline companies, Ventyx gas price forecasts, Ventyx capacity and energy price forecasts, and Energy Solutions, Inc., Natural Gas Price Outlook.



DE 10-195

Public Service Company of New Hampshire  
Petition for Approval of Power Purchase Agreement with  
Laidlaw Berlin BioPower, LLC

City of Berlin's Response to  
Wood-Fired Independent Power Producers  
Discovery Set 1

Date Received: December 28, 2010  
Request No.: 1-4

Date of Response: January 10, 2011  
Witness: George E. Sansoucy, P.E.

REQUEST:

Please provide all calculations and work papers that Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC prepared to arrive at the figure of \$300,000,000 in ratepayer savings referenced on Page 9 of his testimony, and state when each such calculation and work paper was prepared.

RESPONSE:

Please find enclosed Table 1, Sansoucy Exhibit A, which forecasts gross operating revenue of the Laidlaw plant and combined energy and capacity, with a carbon constrained market variance between Laidlaw's base case and potentially high priced scenario for capacity and energy. Column F of Table 1 indicates a \$291,736,000 variance in this one case scenario alone which could be saved by the rate payers of Public Service over energy procurement as a market taker. Ventyx workpapers related to this table are proprietary and confidential and are not subject to disclosure under RSA 91-A. A motion for confidential treatment will be filed with the Commission.

DE 10-195

Public Service Company of New Hampshire  
Petition for Approval of Power Purchase Agreement with  
Laidlaw Berlin BioPower, LLC

City of Berlin's Response to  
Wood-Fired Independent Power Producers  
Discovery Set 1

Date Received: December 28, 2010  
Request No.: 1-5

Date of Response: January 10, 2011  
Witness: George E. Sansoucy, P.E.

REQUEST:

Please provide all studies, reports, projections, forward market prices, analyses and the like upon which Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC relied upon in forming the opinions referenced in data request 1-3 above. For any materials prepared by Mr. Sansoucy or anyone at George E. Sansoucy, P.E., LLC, please state the date that the materials were prepared.

RESPONSE:

Mr. Sansoucy has considered and relied upon a number of documents, the more important being the Power Reference Case Electricity and Fuel Price Outlook, Northeast Region, Fall 2009, Spring 2010, and Fall 2010 as copyrighted and prepared by Ventyx; the Natural Gas Price Outlook as prepared by Energy Solutions, Inc.; Natural Gas Nymex Pricing Data and Nymex Pricing Forward Curves as of December 2010; the Oil and Gas Journal; the EIA Weekly Storage Reports for the storage of natural gas and inventory statistics; Natural Gas Drilling Rig Count statistics as published by Baker-Hughes, weekly; the New England ISO; our company files related to a wide variety of power generation facilities in New England; the Northeast Gas Association's annual publications; company files on natural gas pipelines in New York and New England; analysis of LNG deliveries into the New England region and utilization of LNG by Boston Gas at the Lynn terminal and liquefaction capabilities at the Boston Gas terminal in South Boston; and other miscellaneous public announcements, reports, and documents in our files related to the fleet of power generation plants in New England, gas pricing, and capacity pricing. The Ventyx studies, Energy Solutions Outlook, and company files are proprietary and confidential and are not subject to disclosure under RSA 91-A. A motion for confidential treatment will be filed with the Commission. The remaining listed documents are public information.

George E. Sansoucy, P.E., LLC

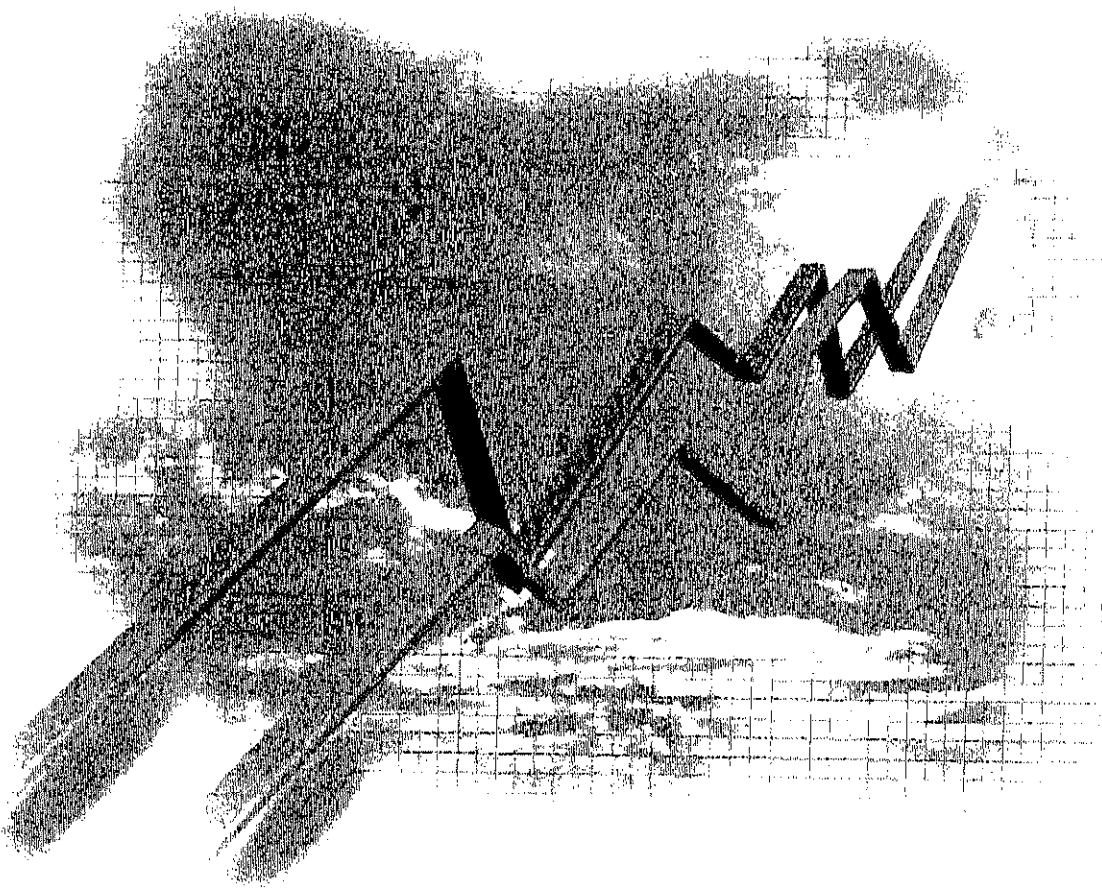
**TABLE 1**  
**Gross Operating Revenue by Energy Pricing Scenario**

A	B	C	D	E	F
Year	Base Case	Energy @ Ventyx Fall 2009	Capacity @ Ventyx Fall 2010	Combined Ventyx Energy & Capacity	Variance Between Base Case & Combined Ventyx Energy & Capacity (B minus E)
2014	\$62,038	\$55,331	\$61,168	\$54,461	\$7,577
2015	\$63,281	\$57,140	\$65,717	\$59,576	\$3,705
2016	\$64,555	\$59,744	\$67,165	\$62,354	\$2,201
2017	\$65,860	\$62,694	\$69,166	\$66,000	(\$140)
2018	\$67,194	\$65,695	\$70,790	\$69,291	(\$2,097)
2019	\$67,026	\$66,910	\$70,924	\$70,807	(\$3,781)
2020	\$68,495	\$69,834	\$72,231	\$73,569	(\$5,074)
2021	\$69,999	\$72,513	\$74,094	\$76,607	(\$6,608)
2022	\$71,537	\$75,472	\$75,702	\$79,636	(\$8,099)
2023	\$73,106	\$79,890	\$77,050	\$83,834	(\$10,729)
2024	\$72,856	\$83,493	\$77,218	\$87,855	(\$14,999)
2025	\$74,459	\$88,253	\$78,832	\$92,626	(\$18,167)
2026	\$76,101	\$92,425	\$80,428	\$96,752	(\$20,651)
2027	\$77,773	\$95,799	\$82,285	\$100,312	(\$22,539)
2028	\$79,488	\$99,341	\$84,070	\$103,923	(\$24,435)
2029	\$72,834	\$97,023	\$77,427	\$101,616	(\$28,783)
2030	\$74,420	\$102,063	\$79,257	\$106,901	(\$32,481)
2031	\$76,044	\$104,137	\$81,067	\$109,160	(\$33,116)
2032	\$77,708	\$108,720	\$82,278	\$113,290	(\$35,583)
2033	\$79,410	\$112,940	\$83,818	\$117,348	(\$37,938)
<b>Totals</b>	<b>1,434,184</b>	<b>1,649,418</b>	<b>1,510,686</b>	<b>1,725,920</b>	<b>(\$291,736)</b>

City of Berlin's Motion for Confidential Treatment

**Attachment C**

# NORTHEAST REGION | FALL 2010



© Copyright 2010, Ventyx

All rights reserved. No part of this report may be reproduced or transmitted in any form or means, electronic or mechanical, including photocopying, recording, or by any information storage or retrieval system without the permission of Ventyx.

This report constitutes and contains valuable trade secret information of Ventyx. Disclosure of any information contained in this report by you and your Company to anyone other than the employees of your Company ("Unauthorized Persons") is prohibited unless authorized in writing by Ventyx. You will take all necessary precautions to prevent this report from being available to Unauthorized Persons, as defined above, and will instruct and make arrangements with employees of your Company to prevent any unauthorized use of this report. You will not lend, sell, or otherwise transfer this reports (or information contained therein or parts thereof) to any Unauthorized Person without Ventyx prior written approval.

PROPRIETARY AND CONFIDENTIAL

Ventyx Advisors

**Ventyx**  
An ABE Company

# City of Berlin's Motion for Confidential Treatment

## **Attachment D**



# Natural Gas Price Outlook

## Table of Contents

Executive Summary .....	5
Introduction .....	7
Terminology .....	8
Fundamentals vs. Technicals .....	9
History .....	10
<b>Natural Gas Fundamentals .....</b>	<b>11-32</b>
Unconventional Shale Gas .....	11
U.S. Natural Gas Production Growth .....	12
Natural Gas Drilling Rig Count .....	14
Why Production is Rising:	
Lower Costs and Increased Efficiencies .....	15
Producers Have No Choice .....	16
The Economics Still Work .....	17
Outlook on Production Levels and Drilling .....	18
Storage Inventories .....	21
Natural Gas Imports .....	24
Liquefied Natural Gas Imports .....	24
Canadian Imports .....	26
Natural Gas Demand .....	28
Economic Recovery .....	29
Electric Generation .....	29
Transportation .....	30
Pipeline Transportation or Basis .....	31
Winter Weather Forecasts .....	32
<b>Crude Oil .....</b>	<b>33-37</b>
Supply, Demand and Prices .....	33
The Price Link Between Crude Oil and Natural Gas Prices .....	36
<b>Natural Gas Technicals .....</b>	<b>38-39</b>
Natural Gas Price Forecasts .....	40
Potential Game Changers .....	41
Analysis Summary .....	42
Conclusion .....	44



# Natural Gas Price Outlook

## Executive Summary

Energy Solutions, Inc. offers unbiased, educational publications on natural gas prices and price trends to businesses that require straightforward and timely information regarding the natural gas industry in order to make more informed decisions. Our clients include businesses that consume natural gas; companies that are involved in the merchandising, production and delivery process; and investment firms.

*Natural Gas Price Outlook* is a 40-plus page analysis that provides buyers and sellers with a thorough and comprehensive review of numerous market factors, which will impact the price of natural gas in 2011 and 2012.

Today, the natural gas market is dealing with a surplus of supplies and reduced demand. New technologies have made prolific shale production a game-changing event for the natural gas industry. In June 2009, the nonprofit Potential Gas Committee (PGC) reported that natural gas available for production jumped 58 percent between 2004 and 2008 and that the nation now had a 100-plus year supply of this valuable resource. This massive growth became well-known while at the same time, the nation was deep into an economic recession that resulted in reduced natural gas demand. As a result, natural gas supplies have been exceeding natural gas demand.

When natural gas supplies exceed demand, natural gas prices decline. This has occurred. In July 2008, the price of natural gas in Louisiana was close to \$14 per MMBtu and today it is around \$4 per MMBtu. Historically, as natural gas prices fall, producers respond to the lower-priced environment by curtailing drilling efforts, which in turn results in production declines. This has not occurred.

Production levels have continued to rise even as the natural gas drilling rig count has been slashed in half from summer 2008 levels. This runs contrary to what history says should occur, but at this time, producers are operating in an environment that does not mimic history.

In addition to improved drilling rig efficiencies and lower operating costs, some producers are able to supplement natural gas revenues with the economic benefits of natural gas liquids (NGLs), which at times may be produced in conjunction with natural gas. On the other hand, some producers may actually be drilling at a loss but are forced to continue operations in order to retain their lease rights. Unlike history, today natural gas prices are being driven by more than just the balance of natural gas supply and demand.

In 2009 and 2010, natural gas price momentum has been downward. However, *Natural Gas Price Outlook* forecasts a price momentum change in mid-2011. This momentum change is expected to be driven by the following three factors:

- 1) Production Levels Will Begin to Decline:** In 2011, producers will become more sensitive to lower price levels because of fewer hedged positions, the expiration of land leases, reduced capital infusions from foreign investors and growing concerns about an oversupply of NGLs.
- 2) Demand Levels Will Begin to Rise:** If the second round of quantitative easing proposed by the Federal Reserve stimulates economic recovery, natural gas prices will begin to respond to the anticipation of renewed demand, particularly from the electric generation and industrial sectors.
- 3) Speculators Will Begin to Shift Their Market Position:** The speculative sector has continued to retain a very large net-short position, which is indicative of their belief that more price downside exists. By mid-2011, if production levels are declining and demand levels are rising, this sector may shift from being a more aggressive seller to a more aggressive buyer in the marketplace, and buying will push natural gas prices higher.





# Natural Gas Price Outlook

## Executive Summary (cont.)

Other conclusions of *Natural Gas Price Outlook* include:

- Increased reliance on unconventional shale gas exposes the nation to longer-term risks because of less natural gas supply source diversification.
- Increased onshore production could kill plans for an Alaskan or Canadian gas pipeline and increase the potential for interstate gas shortages caused by well freeze-offs.
- The natural gas drilling rig is projected to decline by 50-100 drilling rigs by the end of 2011, and this decline will impact production levels because the most inefficient drilling rigs have already been idled.
- NGLs improve natural gas economics, but the NGL market will eventually deal with concerns over the potential for excess supplies due to a lack of infrastructure and processing facilities.
- Investigations into the environmental impacts of horizontal drilling and hydraulic fracturing, which are technologies used for shale production, are ongoing and the potential for increased regulations remains real.
- Natural gas storage inventories are likely to be at record levels on April 1, 2011 and this could set the stage for another new record high at the start of the 2011-2012 winter heating season on November 1, 2011.
- Numerous Canadian and U.S. liquefied natural gas (LNG) import facilities are underutilized. In 2011, more LNG owners are expected to propose plans to convert these facilities into export facilities. If the U.S. and Canada become natural gas exporters, it could mark a new era in the natural gas industry.
- The second round of quantitative easing by the federal reserve (QE2) is designed to jumpstart the economy. However, these actions could have the opposite impact as it could devalue the U.S. Dollar and push crude oil commodity prices as high as \$100 per barrel, which in turn could hinder economic spending.
- Prolific growth in natural gas supplies is expected to result in new demand surfacing from the electric power sector. An increased reliance on natural gas-fired electric generation will likely lead to increased electric price volatility.
- Expansion of pipeline infrastructure has caused pipeline transportation or basis to change dramatically from historical price levels and delivery costs throughout the nation have been somewhat equalized from coast-to-coast.
- Technical indicators point to an early winter or mid-winter price rally to be followed by another price decline, which will take natural gas prices toward a seasonal first quarter low. Also, history indicates that major price rallies occur 2-1/2 to 3 years apart, with the most recent rallies occurring in 2005 and 2008.

*Natural Gas Price Outlook* concludes that while natural gas prices are at eight-year lows, an immediate price reversal is unlikely. However, changing market conditions are likely to cause natural gas prices to gravitate higher in the second half of 2011 and this price momentum is expected to carry into 2012, a time when supply and demand are expected to become better balanced.

*Natural Gas Price Outlook* will help businesses better understand the changing natural gas environment so that they can make more informed decisions related to the purchase or sale of natural gas or related products.

For natural gas buyers, the price bottom may not yet be in, but barring a double-dip recession, it is probably close, and the first half of 2011 is expected to provide some very good buying opportunities for the rest of 2011, 2012, and even 2013.

For natural gas sellers, lower prices aren't expected to disappear quickly. But by 2012 prices are expected to return to the \$5-\$6 per MMBtu price range, which should be viewed as more favorable to nationwide production basins.

[www.NaturalGasOutlook.com](http://www.NaturalGasOutlook.com)

# City of Berlin's Motion for Confidential Treatment

## **Attachment E**



# Natural Gas Price Outlook

## About the Author

Valerie Wood, President and Owner of Energy Solutions, Inc., has more than twenty-six years of energy-related marketing and management experience. Valerie has a diversified background in both regulated and non-regulated industries, providing her with expertise in both natural gas and electricity. This valuable knowledge allows her to understand the perspectives of local distribution companies (LDCs), producers, marketers, and especially commercial and industrial businesses.

Seeing the necessity for education and information in this changing energy industry, Valerie launched Energy Solutions, Inc. in 1996. Over the past 15 years, Energy Solutions, Inc. has successfully grown by continuing to respond to market changes and the needs of its clients. The business of Energy Solutions, Inc. is to provide Consulting Services tailored specifically to businesses to assist them in making proactive, informed, and cost-effective energy buying decisions in this ever-changing environment. Valerie Wood also provides educational services through webinars, seminars and in-house training on multiple topics, ranging from crucial natural gas and electric industry issues to providing personalized customer service.

Valerie's integrity and passion for helping customers learn and grow is perfectly complemented by her energy experience and a degree in both Marketing and Communications. Overall, Valerie Wood believes in helping businesses develop an energy portfolio with a proven, successful balance of cost-effective prices and reliable service.

Copyright © 2010. All rights reserved. No part of this document may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopying, recording, or otherwise, without the proper written permission of Energy Solutions, Inc.

**Disclaimer:** The information contained herein ultimately relates to the cost and pricing of physical natural-gas supplies. Past results are not necessarily indicative of future results. There is no guarantee that the information contained herein will result in profitable trades. No such guarantee can be given nor should be implied. The information provided herein should not be construed as an offer to buy or sell futures, options or commodities. While such information is taken from select sources, which Energy Solutions, Inc. believes to be reliable, Energy Solutions, Inc. has not verified such information and makes no representation or warranty as to, and will not be responsible for, its accuracy or completeness. The information, views and opinions contained herein are presented for the convenience of the reader and are provided on the condition that errors or omissions therein, or reliance thereon, shall not be made the basis of a claim, demand or cause of action. The views and opinions expressed herein are for informational purposes only, are in no way guaranteed, are expressed as of a specific time and are subject to change at any time without notice.