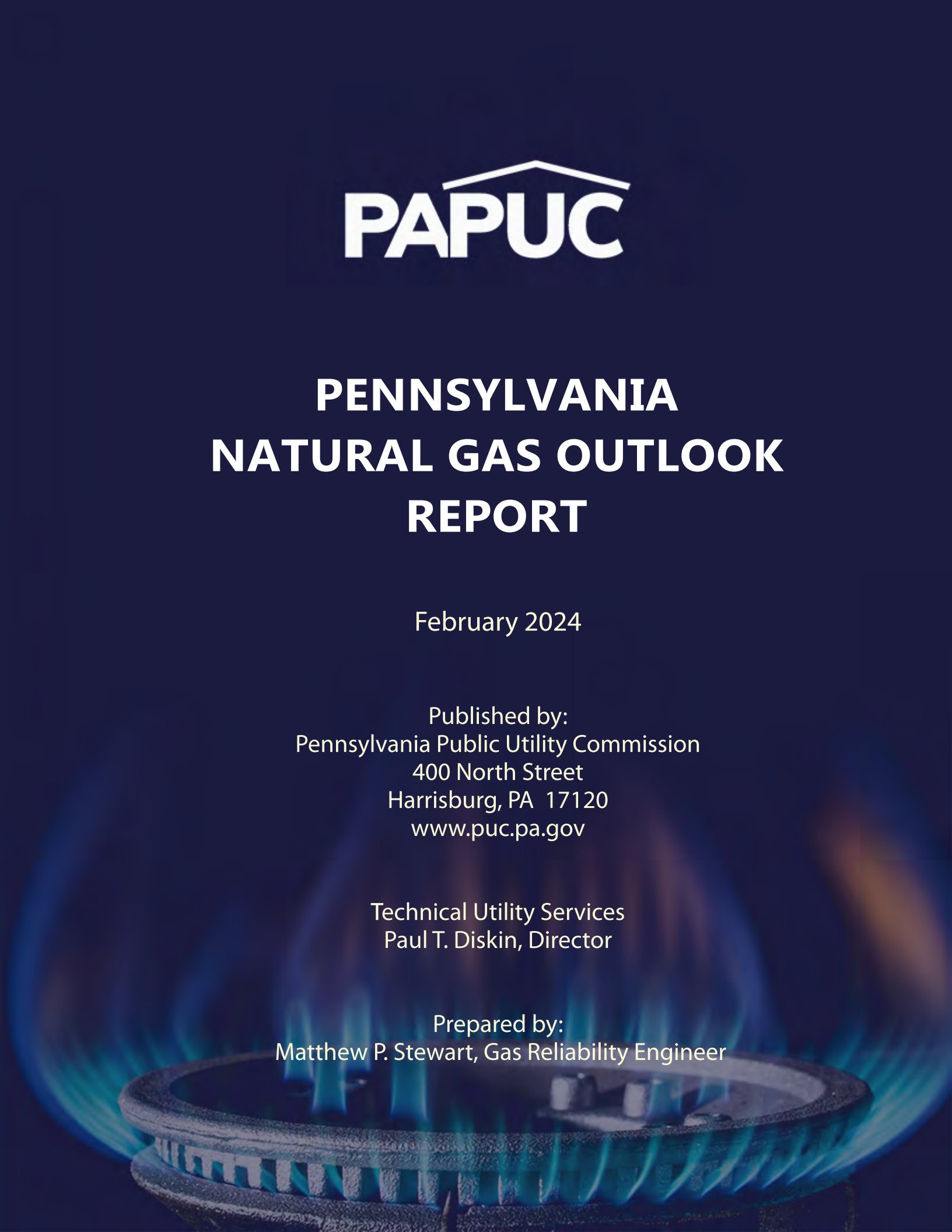
PENNSYLVANIA NATURAL GAS OUTLOOK REPORT

February 2024

Published by:
Pennsylvania Public Utility Commission
400 North Street
Harrisburg, PA 17120
www.puc.pa.gov

Technical Utility Services
Paul T. Diskin, Director

Prepared by:
Matthew P. Stewart, Gas Reliability Engineer



Contents:

Section 1 - Exposition

I. Introduction

The Public Utility Code requires natural gas distribution companies (NGDCs) to file annual financial reports with the Pennsylvania Public Utility Commission (PUC).[1] These Reports detail financial and accounting data, including revenues and expenses. NGDCs are also required to file annual resource planning reports (ARPR) with the PUC.[2] NGDCs with sales of eight billion cubic feet (Bcf) of gas per year or more must file these reports, which include the past year's historical data, program changes and the next three-year forecast of demand requirements.[3]

This report has been prepared using information filed by the NGDCs, including the information in the reports noted above, as well as the U.S. Energy Information Administration (EIA) and other sources. The most recent available data is reported, although much of the EIA production and reserves data has a one-year lag for reporting. With the uncertainty of the unconventional gas supplies, EIA has not presented proven reserves information since 2009.

[1] 52 Pa. Code § 59.48.
[2] 52 Pa. Code § 59.81.
[3] The NGDCs in PA with sales of 8 Bcf or more include Philadelphia Gas Works (PGW), PECO Energy Company (PECO), Columbia Gas of PA (Columbia), Peoples Natural Gas Company (Peoples), UGI Utilities Inc. (UGI), and National Fuel Gas Distribution Company (NFG).

II. Executive Summary

The PUC's Bureau of Technical Utility Services has prepared this report to summarize the 2022 financial and supply and demand data for the Pennsylvania NGDCs. This report also presents several topics of interest regarding the Pennsylvania natural gas industry. National trends in the natural gas industry are affected by trends and events in Pennsylvania. Therefore, macroeconomic and industry data for the entire U.S. are included in this report.

National Summary

The national natural gas storage inventory peak for the 12 months prior to this winter heating season[4] was 3.6 trillion cubic feet (Tcf). This was the same as the peak from the prior injection season. Domestic dry natural gas production in the U.S. averaged 98.1 billion cubic feet per day (Bcfd) in 2022, which was an increase of 3.7% from 2021.[5] Domestic consumption in 2022 was 88.5 Bcfd, which is an increase of 4.5 Bcfd from 2021. Henry Hub spot prices averaged $6.45 per million British thermal units (MMBtus) in 2022, which is an increase of 65.8% from $3.89 in 2021.[6] However, an analysis of Henry Hub natural gas futures shows an expected reversal of pricing with a decrease in prices in 2024; producing a national average price of $3.58/MMBtu for 2024.[7]

[4] 2022-2023 heating season.
[5] EIA, *EIA Natural Gas Gross Withdrawals and Production*, available at http://www.eia.gov.
[6] Henry Hub is a distribution hub in Louisiana. The price at this delivery point is frequently used by industry and trading markets as a benchmark for natural gas prices.
[7] CME Group, available at http://www.cmegroup.com/trading/energy/natural-gas/natural-gas.html.

Pennsylvania Summary

There are nearly 3.1 million natural gas customers in Pennsylvania, with about 2.8 million residential customers.[8] There are 26 PUC-jurisdictional natural gas utility companies in Pennsylvania, and six of these are major distribution companies with gross revenues greater than $40 million per year.[9] Pennsylvania's natural gas infrastructure includes intrastate pipelines, interstate pipelines, landfill gas pipeline projects, propane facilities and liquefied natural gas (LNG) facilities. Infrastructure needs are being met by expansion and replacement of existing pipelines, with new pipelines and compressor stations being constructed.

As of July 28, 2023, 30,929 unconventional drilling permit applications have been filed with the Pennsylvania Department of Environmental Protection (398 new applications Year to Date 2023).[10] Of those 30,929 applications, 14,134 unconventional wells have been drilled.[11] As of August 11, 2023, there were 19 rotary rigs active in Pennsylvania, which is a 17% decrease in of the number of active rigs from a year prior. The average rig count over the prior 12 months was 23. Rotary rigs are a piece or set of equipment, usually mobile, that is used to provide the rotational force needed to drill a borehole. The rotary rig count is an indicator of how many rigs are in service and the demand for drilling equipment.[12] The EIA estimates that there were 68,929 producing shale and conventional gas wells in Pennsylvania in 2020, which is a 1.7% decrease from 2019.[13]

Financial statistics taken from the Gas Annual Reports of the NGDCs are presented in Section VII, in time series fashion from 2012 through 2022. Sections V through VII present broad category financial data for several categories, including revenue, expenses, plant in service,

---

[8] EIA, *EIA Number of Natural Gas Consumers*, available at http://www.eia.gov.
[9] $40 million in gross revenue is the threshold over which an NGDC files under 66 Pa.C.S. § 1307(f) to recover natural gas costs.
[10] A conventional gas well is typically shallower than an unconventional well, and drills into a pocket or reservoir of gas. Such wells generally rely on the natural pressure to extract the gas once the well is drilled. An unconventional well uses more sophisticated means to extract gas from underground deposits, typically by hydraulic fracturing of shale structures (fracking). These unconventional wells also tend to require drilling to much greater depths than conventional wells.
[11] *See PA DEP Well Permit Workload Report*, available at http://www.dep.pa.gov/DataandTools/Reports/Oil%20and%20Gas%20reports/Pages/default.aspx.
[12] Baker Hughes, rotary rig count, available at http://www.bakerhughes.com/rig-count.
[13] EIA, *Number of Producing Gas Wells*, available at http://www.eia.gov. EIA's most current data on this subject is from 2020.

depreciation, maintenance, and gas costs. Data on the number of customers, reserves, wellhead prices, Pennsylvania production and average consumption is also provided.

The following are a few of the notable statistics contained in this report:

- Total natural gas consumption in Pennsylvania has increased from 706.2 Bcf in 1997 to 1,863 Bcf in 2022.
- Pennsylvania gas production was 7.5 Tcf in 2022, up from only 121 Bcf (0.12 Tcf) in 1997, but slightly down by 1.3% from 2021.
- Gas deliveries for Pennsylvania electric generation have increased markedly from 3% of total deliveries in 1997, to 57% in 2022, or 20 Bcf in 1997 as compared to 878 Bcf in 2022.[14]

[14] EIA, *Natural Gas Consumption by End Use*, available at http://www.eia.gov.

III. Pennsylvania Natural Gas Infrastructure

Pipelines

Twenty interstate natural gas pipelines exist in the Northeast Region, which includes Connecticut, Delaware, Massachusetts, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Virginia and West Virginia. These interstate pipelines deliver to several intrastate pipelines and more than 50 local distribution companies (LDCs). They also deliver to natural gas-fired electric generating facilities and large industrial customers. The pipelines in Pennsylvania have access to natural gas production from the South and Midwest, from the Rocky Mountains via the Rockies Express Pipeline, from Canada, and from the Marcellus and Utica Shales that span large portions of Pennsylvania, Ohio, and West Virginia.[15]

Marcellus shale production in the northeast U.S. has risen from 0.5 Bcfd in January 2010 to 25.0 Bcfd in July 2023, and was relatively steady over the previous 12 months. Despite this vast increase in production, many portions of eastern Pennsylvania and New England are still subject to higher priced gas, as well as dramatic spikes in price during cold snaps in the winter heating season. These price differences are mostly caused by a lack of pipeline capacity to transport supply to the markets with demand. There are 5.7 Bcfd of pipeline projects that have been, or are scheduled to be, placed in service in the Northeast region in 2023, and a further 2.4 Bcfd of projects are scheduled to be placed in service in 2024, as shown in Tables 1 and 2 below, respectively. The additional pipelines are intended to remove some of the above-mentioned constraints and may assist in stabilizing regional prices by moving the increased Marcellus Shale gas production to market or linking other sources of gas to the Northeast region.[16]

[15] EIA, Natural Gas Pipelines in the Northeast Region, *About U.S. Natural Gas Pipelines*, available at http://www.eia.gov.

[16] EIA, *EIA Marcellus Region Drilling Productivity Report*, available at http://www.eia.gov.

Table 1: Proposed Pipeline Infrastructure for 2023 In-Service in the Northeast Region[17] [18]

Project Name	Pipeline Operator Name	State(s)	Additional Capacity (MMcf/d)
Adelphia Gateway Project	Adelphia	PA	250
Conemaugh River Crossing Replacement Project	Texas Eastern Transmission	PA	0
East 300 Upgrade Project	Tennessee Gas Pipeline Co	PA, NJ	115
Line 8000 Replacement Project	TC Energy	MD	0
Mountain Valley Pipeline	Mountain Valley Pipeline, LLC	WV, VA	2,000
Northeast Supply Enhancement Project	Williams Transco	PA, NJ, NY	400
Northern Loop Project	Columbia Gas	PA, WV, OH	0
Regional Energy Access Project (Phase I and II)	Transcontinental Gas Pipeline	PA, NJ	1,050
Supply Header Project	Dominion Energy Transmission Co	PA, WV	1,500
Virginia Electrification Project	Columbia Gas	VA	350

[17] EIA, EIA Natural Gas Pipeline Projects, available at http://www.eia.gov.
[18] Some projects providing 0 MMcf/d additional capacity are designed to meet new regulations, or to provide additional flexibility in deliverability to underserved or new areas of consumption.

Table 2: Proposed Pipeline Infrastructure for 2024 In-Service in the Northeast Region[19] [20]

Project Name	Pipeline Operator Name	State(s)	Additional Capacity (MMcf/d)
Mountain Valley Pipeline	Mountain Valley Pipeline, LLC	WV, VA	2,000
Ohio Valley Connector Expansion Project	Equitrans Midstream Corporation	OH	350

[19] EIA, EIA Natural Gas Pipeline Projects, available at http://www.eia.gov

[20] Some projects providing 0 MMcf/d additional capacity are designed to meet new regulations, or to provide additional flexibility in deliverability to underserved or new areas of consumption.

IV. Natural Gas Generation and End Uses in Pennsylvania

By the end of 2022, Pennsylvania had 23,136 megawatts (MWs) of natural gas fired electric generation installed capacity, as shown by comparison to other capacity fuel sources in Chart 1, below.[21] These facilities constitute 49.2% of Pennsylvania's electric generating capacity, up from 44.8% the prior year, making natural gas the largest portion of Pennsylvania's electric generation mix for the fifth year in a row. The change in the share of natural gas fired electric generation capacity was caused by a combination of a 1,785 MW increase in natural gas capacity, and a combined drop in oil and coal capacity of 2,582 MW.[22] Chart 2, below, shows the percentage of electric generation capacity by fuel source over time, from 2013 through 2022. Chart 2 also shows that natural gas has been steadily increasing as a share of the total electric generation capacity in PA, firmly overtaking coal in 2018, and maintaining its dominance in Pennsylvania through 2022.

[21] PJM, *2022 PJM Pennsylvania State Infrastructure Report*, available at: https://www.pjm.com/-/media/library/reports-notices/state-specific-reports/2022/2022-pennsylvania-state-infrastructure-report.ashx.

[22] While a relatively small portion of Pennsylvania's total electric generation capacity, solar has seen noticeable increases over the past three years, with an increase of 63 MW, which is an increase of 900% from 2019. Wind has also seen a substantial increase of 278 MW since 2019, which is an increase of 148%.

Chart 1: Electric Generation Capacity in Pennsylvania by Fuel Type at Year End 2022 (MW)

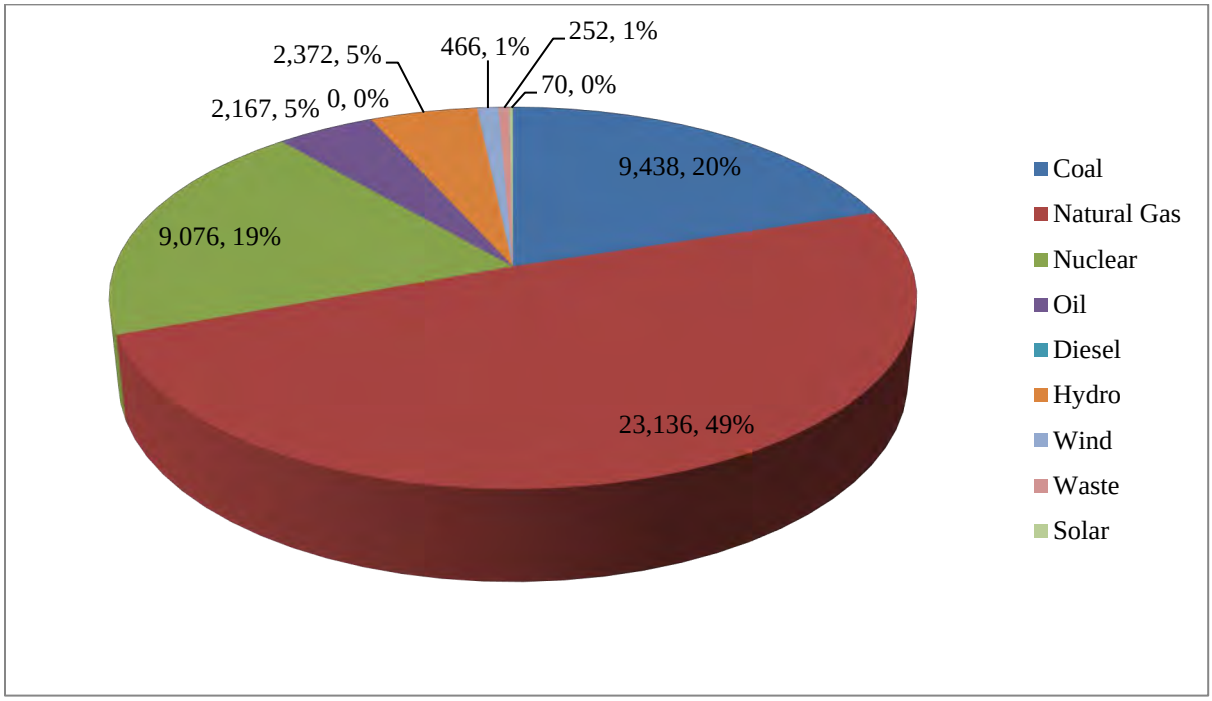
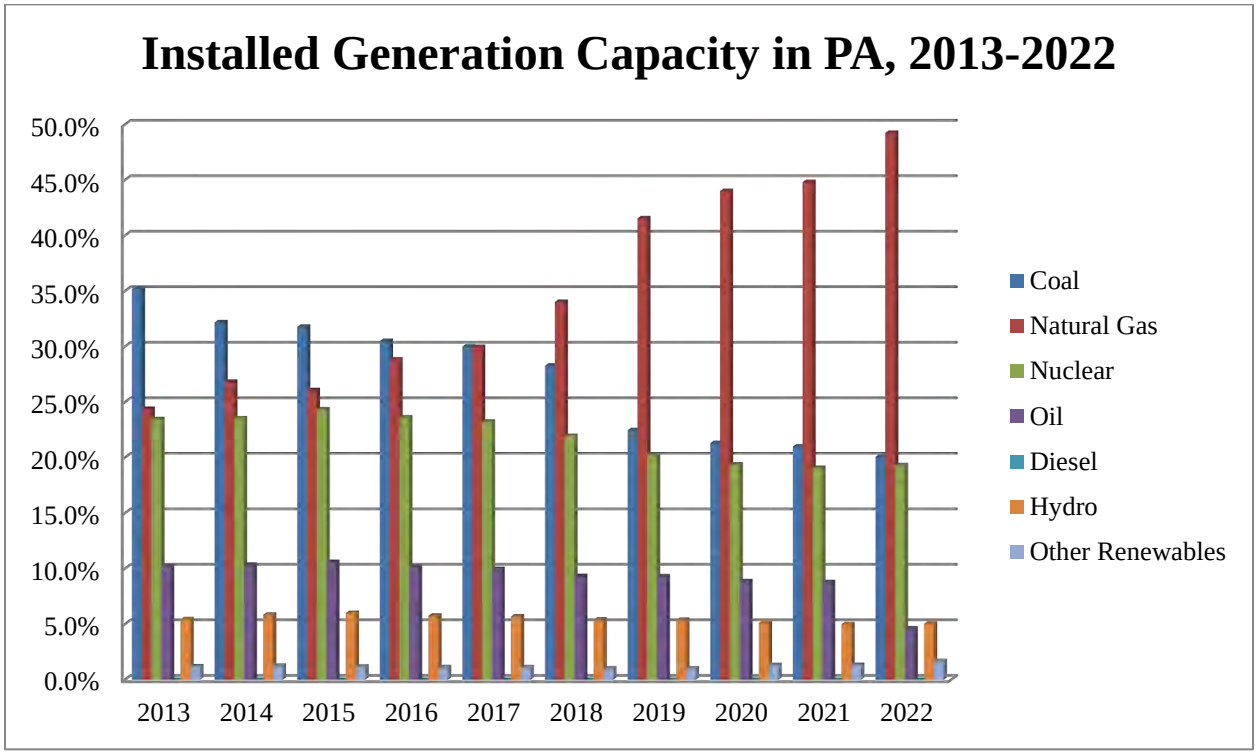


Chart 2: Installed Electric Generation Capacity in PA, 2013-2022



Charts 3 and 4, below, summarize the PJM queue for new electric generation capacity for Pennsylvania as of Dec. 31, 2022. The queue includes 211 MW of proposed new natural gas fired capacity, making up only 1.5% of the total PJM queue for Pennsylvania, representing a reduction from 2021, when natural gas made up 14% of the total queue. This is due predominantly to the continued high levels of solar and storage resources in the PJM queue this year. However, PJM treats intermittent energy sources such as solar and wind facilities differently than other generation sources when bidding into PJM's capacity market. These facilities are assigned an Unforced Capacity value (UCAP) by PJM, which is a fraction of the Installed Capacity (ICAP), or nameplate value for the facility. For wind resources, UCAP is roughly 15% of ICAP on average, and for solar resources it is roughly 50% of ICAP. With this in mind, Chart 4 shows the PJM queue with UCAP values for the appropriate resources in the queue. In Chart 4, we can see that natural gas takes up only 1.5% of the total PJM queue for Pennsylvania, as mentioned above.[23] This year there was a continued dramatic increase in solar

[23] PJM, *2022 PJM Pennsylvania State Infrastructure Report*, available at: https://www.pjm.com/-/media/library/reports-notices/state-specific-reports/2022/2022-pennsylvania-state-infrastructure-report.ashx.

projects in the queue, taking up 69% of the ICAP total, substantially higher than natural gas. Typically, about 25% of the projects in PJM's queue are actually put in service.[24]

Chart 3: Queued Electric Generation Capacity (ICAP) in Pennsylvania by Fuel Type (MW)

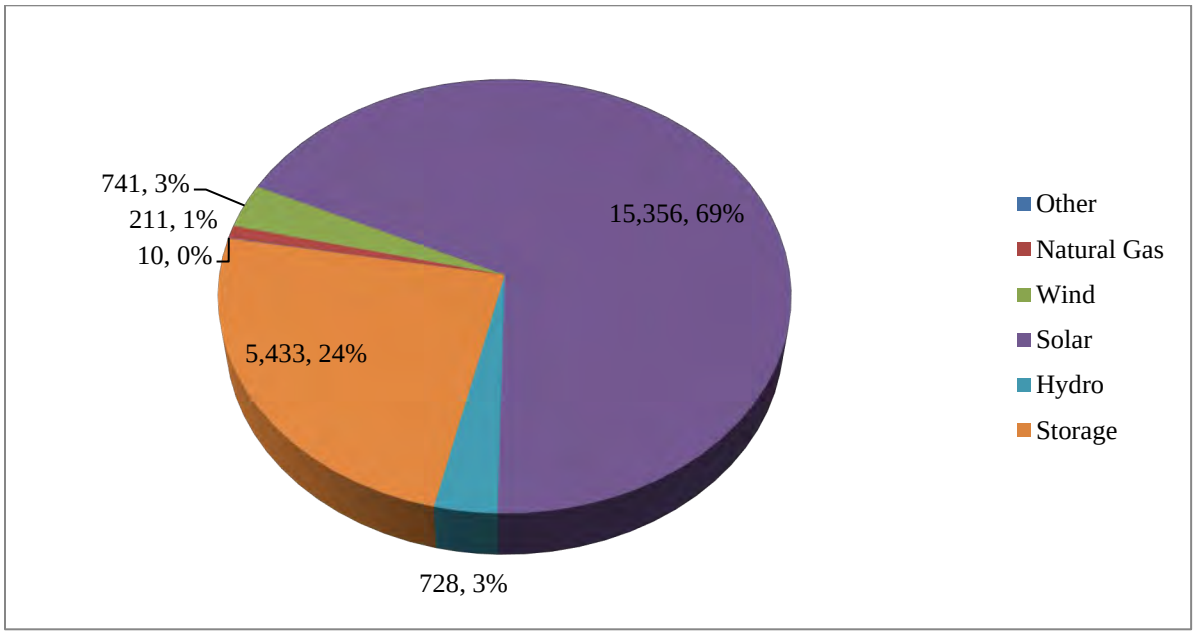
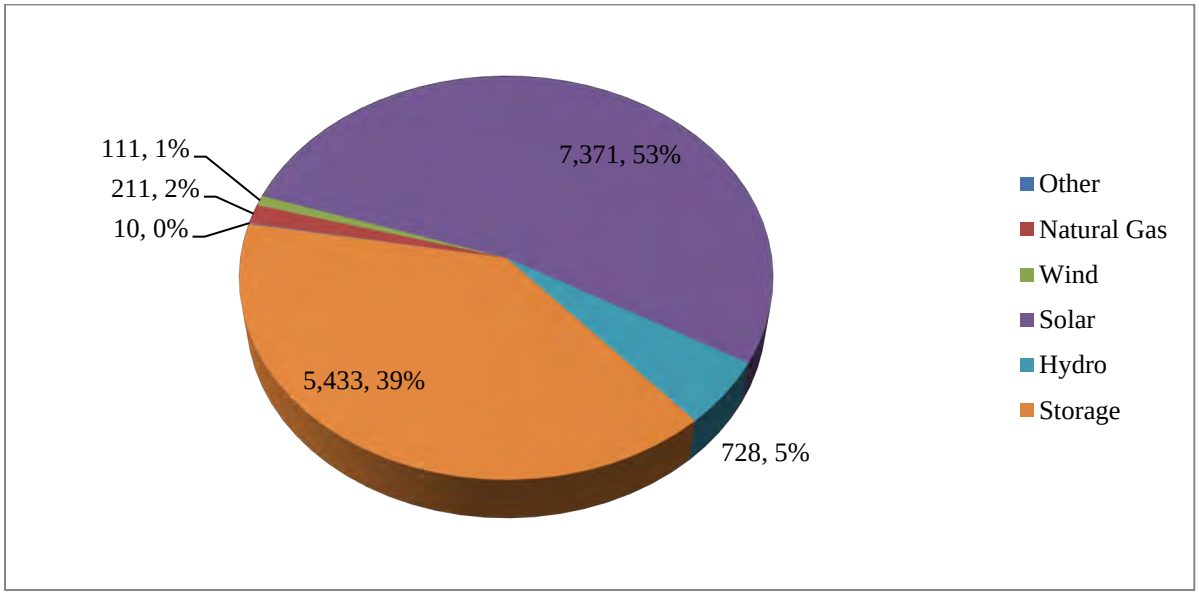


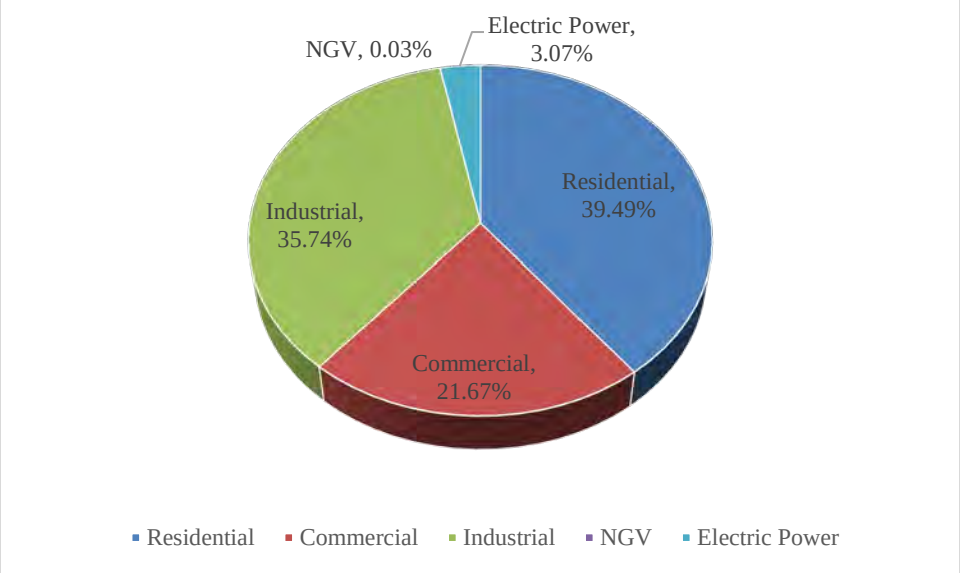
Chart 4: Queued Electric Generation Capacity (UCAP) in Pennsylvania by Fuel Type (MW)



[24] PJM, *PJM Regional Transmission Expansion Plan Report*, available at http://www.pjm.com.

Charts 5 and 6, below, note the gas consumed in Pennsylvania for electric generation as compared to other end-uses in 1997 and 2022, respectively.[25] As depicted, the fraction of natural gas usage for electric generation has dramatically increased. Reasons for this increase include: greater supply of natural gas and the resultant lower cost for natural gas; the advancement of efficient natural gas fueled electric generation technology; and retirements of older coal-fired and nuclear power plants. As the composition of the generating fleet changes to more gas-fired units, pressure will continue to increase on the natural gas industry to augment production and transportation capacity.

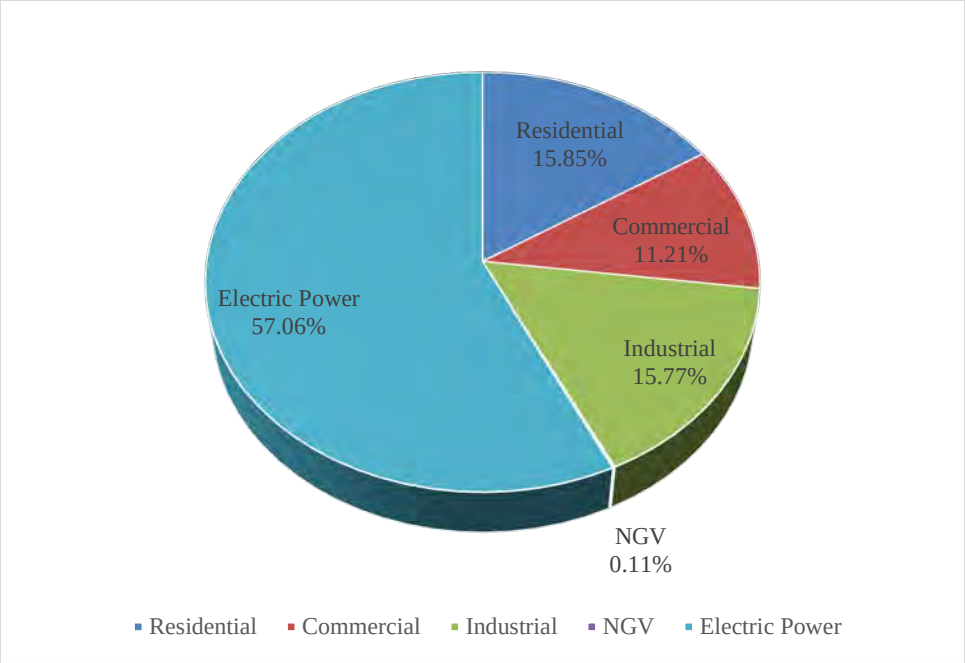
Chart 5: Natural Gas Consumption in Pennsylvania by End Use 1997[26]



[25] EIA, *Natural Gas Consumption by End Use*, available at http://www.eia.gov.

[26] NGV = Natural Gas Vehicles.

Chart 6: Natural Gas Consumption in Pennsylvania by End Use 2022

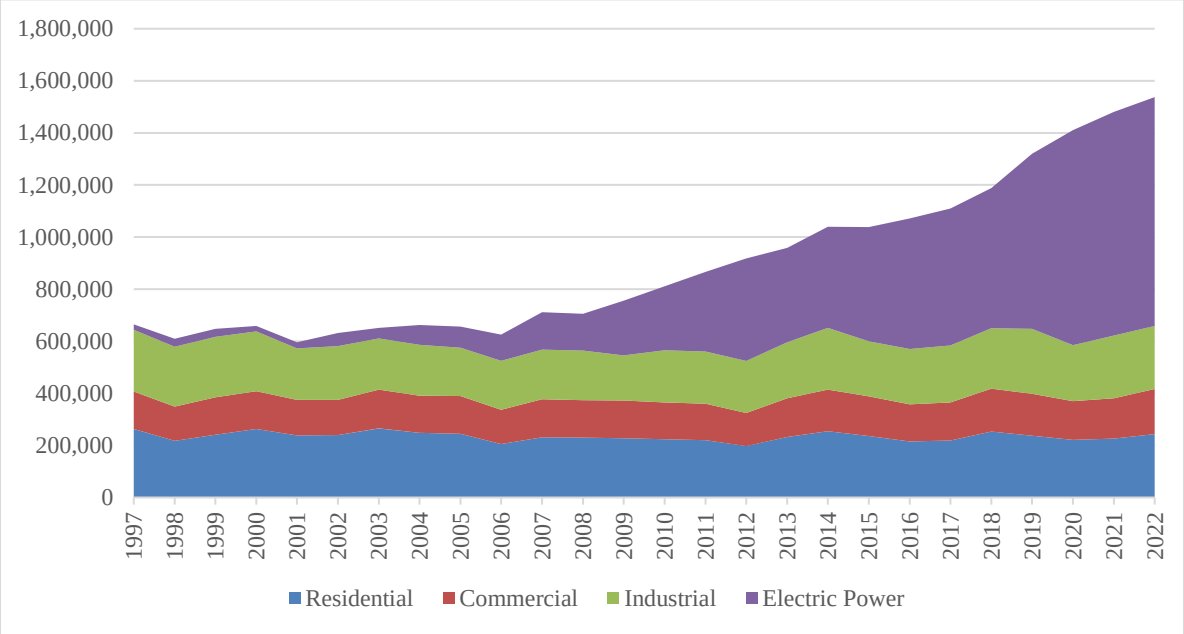


The dramatic shift in the use of natural gas from primarily residential, commercial, and industrial uses to electric power generation has been occurring steadily over the period from 1997 through 2022, with a marked acceleration beginning in 2008 as Marcellus Shale production ramped up, as seen in Figure 1, below.[27] Notably, natural gas usage for electric generation increased over 142% from 2013 to 2022, rising 516 Bcf, while total usage increased 580 Bcf over the same period.[28] Gas usage for all other end uses generally increased over this period, although residential, commercial, and industrial usage each saw a slight drop in 2020, likely due to the drop in demand during the COVID-19 pandemic. Usage in all three of these categories saw a recovery in 2021 and continued to rise in 2022. Electricity demand decreased slightly in 2022 as compared to 2021, with a year-over-year decrease of -0.11%.[29]

---

[27] EIA, *Natural Gas Consumption by End Use*, available at http://www.eia.gov.
[28] Usage for NGVs actually increased over this time period, but since the amount going to this sector is so small, it is negligible for the purposes of the analysis in this section. NGV usage went from 312 MMcf to 1,696 MMcf, an increase of 444% from 2013-2022.
[29] PUC, *Electric Power Outlook Report for Pennsylvania 2022-2027*, available here: https://www.puc.pa.gov/media/2527/electric-power-outlook-for-pennsylvania-2022-2027-8-29-2023-final-draft-with-covers.pdf.

Figure 1: Natural Gas Deliveries in Pennsylvania by End Use 1997-2022



Winter Storm Elliott

Winter Storm Elliott (WS Elliot) impacted Pennsylvania with very high winds from Dec. 23 through 24, 2022, and caused electrical outages throughout the Commonwealth with a peak of 108,534 electric customer outages at 4:00 PM on Dec. 23. During WS Elliott, 7 of 11 Commission-jurisdictional electric distribution companies experienced reportable electric outages and final storm restoration (last customer restored) was on Dec. 26 at 11:00 PM.[30] Over 21,000 MW of the gas generator outages in PJM were due to units that failed due to freezing issues at temperatures above their cold weather operating limits, i.e., the units should have performed as the temperatures were above the limits that should have caused problems to the operating equipment.

The North American Electric Reliability Corporation (NERC), which is the entity that oversees the reliability of the Bulk Electric System (BES), has noted that energy risks present themselves during extreme weather events that can disrupt fuel supplies that can impact Regional Transmission Operators (RTOs) with a high dependence on natural-gas-fired generation.[31] Extreme weather can impact fuel supplies and, in the case of WS Elliott in PJM and the Eastern Interconnect, the mechanical operations of electrical generators that are fueled by natural gas.

The Commission reviewed the impacts of WS Elliott in Pennsylvania, requesting data from the NGDCs regarding electric generation customers. Based on this information, there were no curtailments of natural gas-fueled electric generation customers by any NGDC. For those customers with interruptible contracts, some of these were interrupted during WS Elliott. The NGDCs also reported that there were not notable issues with customers procuring adequate supply. It would appear from the data collected that any issues with non-performance of natural gas-fueled electric generators in PJM during WS Elliott due to a lack of gas supply were most likely either Pennsylvania generators not served by an NGDC (pulling gas supply directly from a transmission line), or generators from other states within the PJM footprint.

---

[30] Service outages reports are required under 52 Pa. Code § 67.1. The reporting threshold for an event is 5% of total customers or 2,500 customers, whichever is less, experiencing an outage for six or more consecutive hours.

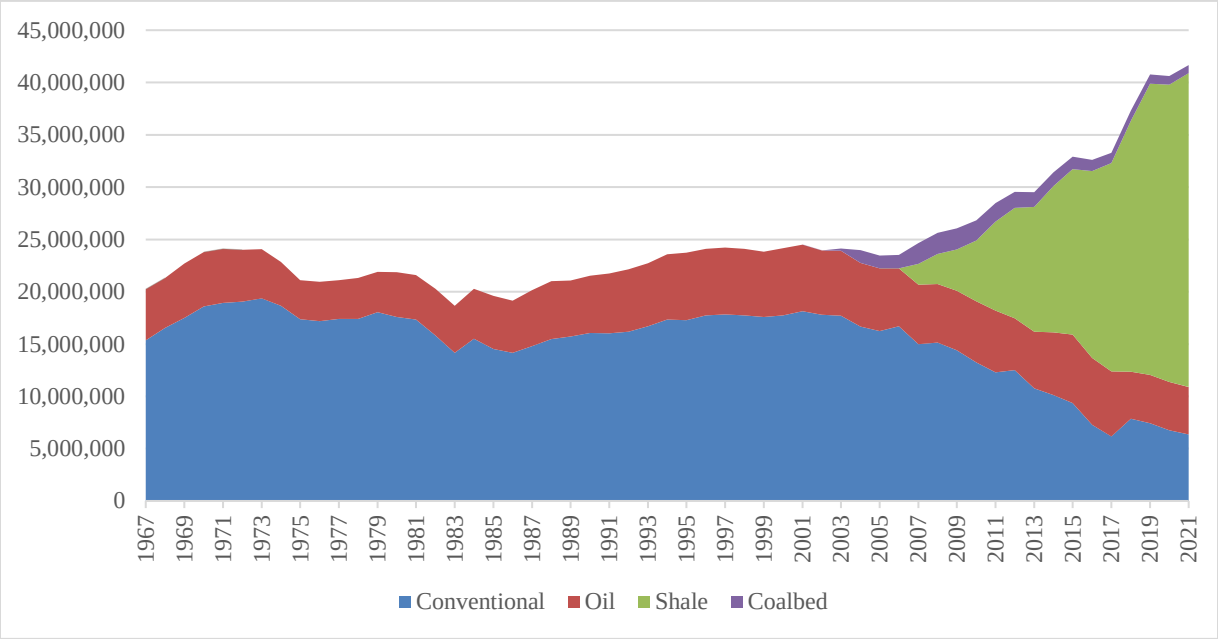
[31] The Commission's 2023 report, *Electric Power Outlook for Pennsylvania 2022-2027*, details NERC's and PJM's reliability outlooks and concerns and may be found here: https://www.puc.pa.gov/media/2527/electric-power-outlook-for-pennsylvania-2022-2027-8-29-2023-final-draft-with-covers.pdf.

V. Natural Gas Production, Consumption, Reserves, and Prices

United States

Total U.S. withdrawals of natural gas were 43.4 Tcf in 2022, of which, gross withdrawals of unconventional shale gas were 30.0 Tcf.[32] As shown in Figure 2 below, 2021 was the ninth consecutive year in which unconventional shale gas withdrawals outpaced conventional gas wells in the U.S.[33] This trend is accelerating, with the spread between shale and conventional gas production increasing from 1.2 Tcf in 2013 to 23.7 Tcf in 2021. Total US withdrawals of natural gas increased by 1.7 Tcf in 2022, which was a 4.1% increase from 2021.

Figure 2: US Gross Natural Gas Withdrawals (MMcf), 1967-2021



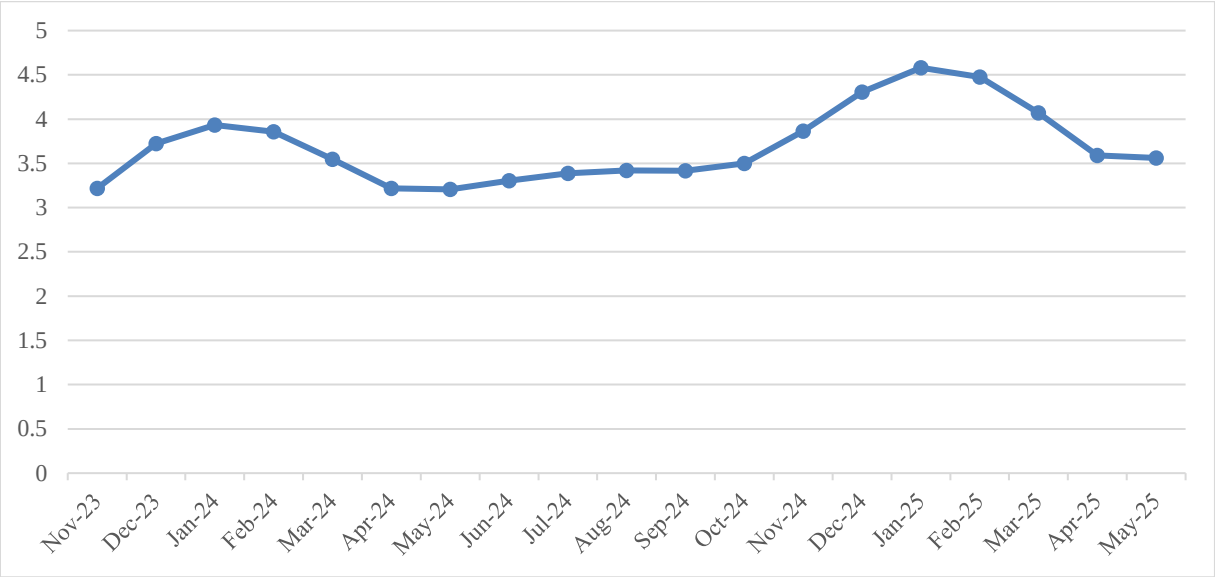
[32] EIA, *EIA Natural Gas Summary*, available at http://www.eia.gov.
[33] EIA's most recent data on natural gas withdrawals by type of well is from 2021.

The national storage inventory peak for the prior heating season was 3.6 Tcf and was reached in November 2022. This is the same as the peak from the prior injection season of 3.6 Tcf in November 2021. Dry natural gas production in the U.S. averaged 98.1 Bcfd in 2022. This was an increase of 3.7% from 2021. Over the past decade, U.S. domestic dry natural gas production has increased an average of 4.9% per annum.[34] Domestic natural gas consumption was 88.5 Bcfd in 2022, up 5.4% from 84.0 Bcfd from 2021.[35] Henry Hub spot prices averaged $6.45 in 2022, an increase of 65.8% from $3.89/MMBtu in 2021.

An analysis of Henry Hub natural gas futures contracts in comparison to Henry Hub spot prices[36] shows an expected decrease in price over the coming year. Henry Hub spot prices have averaged $2.43/MMBtu in 2023, while the average projected price is $3.58/MMBtu for 2024.[37] Figure 3, below, shows the futures prices for Henry Hub through May 2025 delivery dates. Although the Henry Hub price is frequently used as a benchmark for the "price" of natural gas, there are significant differences in price at delivery points based on geography. For example, the Dominion South Hub is located in southwestern Pennsylvania, which is in the middle of the Marcellus and Utica Shale plays. Based on past spot prices, Henry Hub prices are generally higher, with an average basis spread of $0.30/MMBtu to $0.80/MMBtu.[38] Although it is purely speculative, if this pricing trend were to continue going forward, we could expect lower pricing in 2024 at the Dominion South Hub compared to Henry Hub.

[34] EIA, *Natural Gas Gross Withdrawals and Production*, available at http://www.eia.gov.
[35] EIA, *Natural Gas Consumption by End Use*, available at http://www.eia.gov.
[36] CME Group, available at http://www.cmegroup.com/trading/energy/natural-gas/natural-gas.html.
[37] EIA, *EIA Short Term Energy Outlook*, available at http://www.eia.gov.
[38] CME Group, available at http://www.cmegroup.com/trading/energy/natural-gas/natural-gas.html.

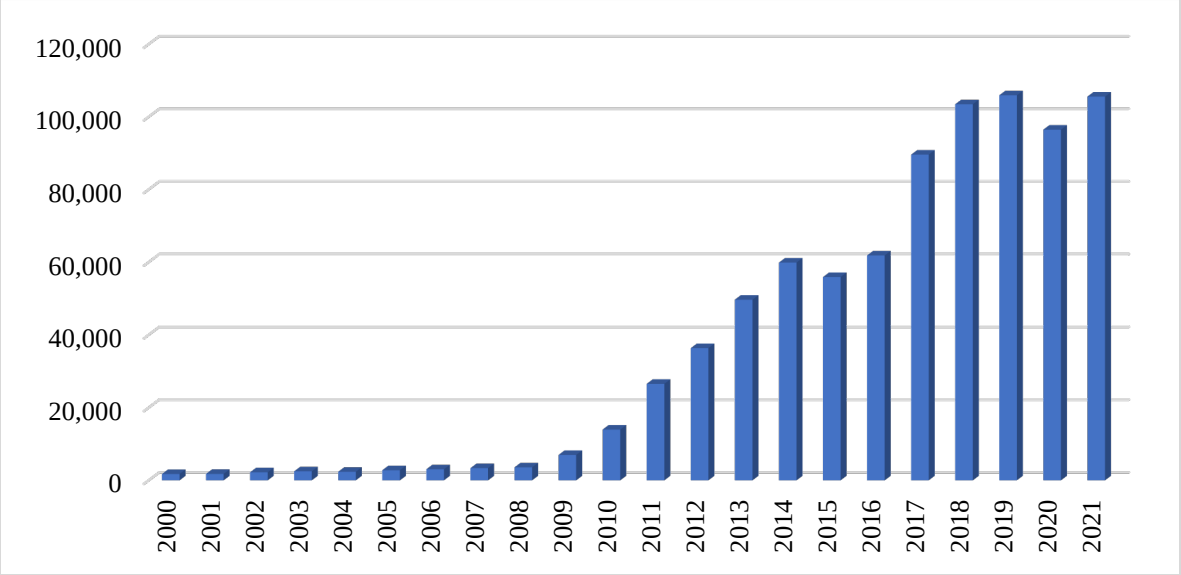
Figure 3: Henry Hub Futures Prices ($/MMBtu)



Pennsylvania

This section presents Pennsylvania specific data. The data includes sales by NGDCs, deliveries by NGDCs for competitive suppliers and production of natural gas in Pennsylvania. Dry proved reserves for Pennsylvania as of December 31, 2021, were 105.6 Tcf, an increase of 9.4% from 2020. Pennsylvania's dry proved reserves since 2000 can be seen in Figure 4, below.

Figure 4: Pennsylvania's Dry Proved Reserves (Bcf), 2000-2021[39]



The EIA estimates that there were 68,929 producing natural gas wells in Pennsylvania in 2020.[40] [41] As of July 28, 2023, 30,929 unconventional drilling permit applications had been filed with the Pennsylvania Department of Environmental Protection. Of those applications, 14,134 unconventional wells have been drilled.[42] As of August 11, 2023, there were 19 rotary rigs active in Pennsylvania, a 17% decrease from the number of active rigs a year ago. Rotary rigs are a piece or set of equipment, usually mobile, that is used to provide the rotational force needed to drill a borehole. The rotary rig count is an indicator of how many rigs are in service and the

[39] 2022 data was not yet available.
[40] EIA, *Natural Gas Annual*, available at http://www.eia.gov.
[41] 2021 data was not yet available.
[42] Pennsylvania Department of Environmental Protection Well Permit Workload Report, available at http://www.portal.state.pa.us/portal/server.pt/community/oil_and_gas_reports/20297.

demand for drilling equipment.[43] Table 4, below, illustrates that Pennsylvania's production in 2022 greatly exceeded its deliveries to consumers in the state by nearly a factor of five.

Table 4: Historical Pennsylvania Deliveries, Transportation and Production (Bcf)[44]

Year	Gas Delivered to Consumers	Delivered for the Account of Others (Transport)	PA Gross Gas Production
1997	664.8	261.2	80.0
1998	609.8	273.4	130.3
1999	648.2	293.5	174.7
2000	659.0	292.0	150.0
2001	596.0	254.2	130.9
2002	632.0	270.6	157.8
2003	651.9	264.3	159.8
2004	662.5	258.2	197.2
2005	656.1	246.8	168.5
2006	625.9	247.3	176.0
2007	711.9	259.1	182.3
2008	705.3	260.6	198.3
2009	755.9	253.3	273.9
2010	811.2	283.2	572.9
2011	866.8	287.6	1,310.6
2012	918.5	293.5	2,256.7
2013	959.0	331.4	3,259.0
2014	1,039.9	362.7	4,257.7
2015	1,038.3	332.5	4,813.0
2016	1,072.1	326.3	5,210.2
2017	1,111.7	335.2	5,453.6
2018	1,189.9	365.8	6,264.8
2019	1,321.5	382.1	6,896.8
2020	1,415.8	341.9	7,148.3
2021	1,482.8	366.4	7,626.5
2022	1,539.1	383.1	7,483.3

[43] Baker Hughes, rotary rig count, available at http://www.bakerhughes.com/rig-count.
[44] EIA, *Natural Gas Delivered for the Account of Others*, available at: http://www.eia.gov.

Natural Gas Liquids (NGLs) and the Natural Gas Market

At this time, a significant amount of NGLs is simply sold directly into the natural gas system, owing to a lack of supply transportation to other markets, e.g., manufacturing, retail sales, etc. With natural gas prices still relatively low, this adds to the downward pressure on NGL prices. However, over the past several years, the pricing for NGLs has begun to rise, as Mariner East I came online for ethane service and some energy companies have begun transporting additional quantities of NGLs through other means, such as rail and road transportation.[45] These transportation options have allowed more NGLs to be sold to higher priced markets, such as manufacturing. As more NGLs are sold into these alternate markets, this creates additional incentive for producers to remove these NGLs from the natural gas supply, rather than selling them into the natural gas pipelines.

As new pipelines are placed in service, it is possible that a substantial shift in the relationship between NGL supplies and the natural gas market could develop. Currently, there is a substantial, though unmeasured, volume of NGLs within the natural gas system, both in Pennsylvania and throughout the U.S. This causes variation in the heat content of natural gas being delivered to consumers. Heat content is a measure of the amount of energy derived from a given quantity of gas when it is combusted, usually measured in Btu. For example, pure methane, the primary component of natural gas, has a heat content of 1,010 Btu/ft^3.[46] Ethane, the most common NGL to be produced from natural gas wells by volume, has a much higher heat content of 1,783 Btu/ft^3. Other potential impurities in natural gas, such as carbon monoxide, have much lower heat content.[47]

It is possible for the heat content of the mixture that is delivered to a customer to have a heat content either higher or lower than that of pure methane, depending on the amounts of these various impurities within a given sample of natural gas. If it is higher, an estimate can be made of the amount of NGLs present in the gas. To prepare estimates of the amount of NGLs in gas produced in Pennsylvania, two assumptions have been made:

---

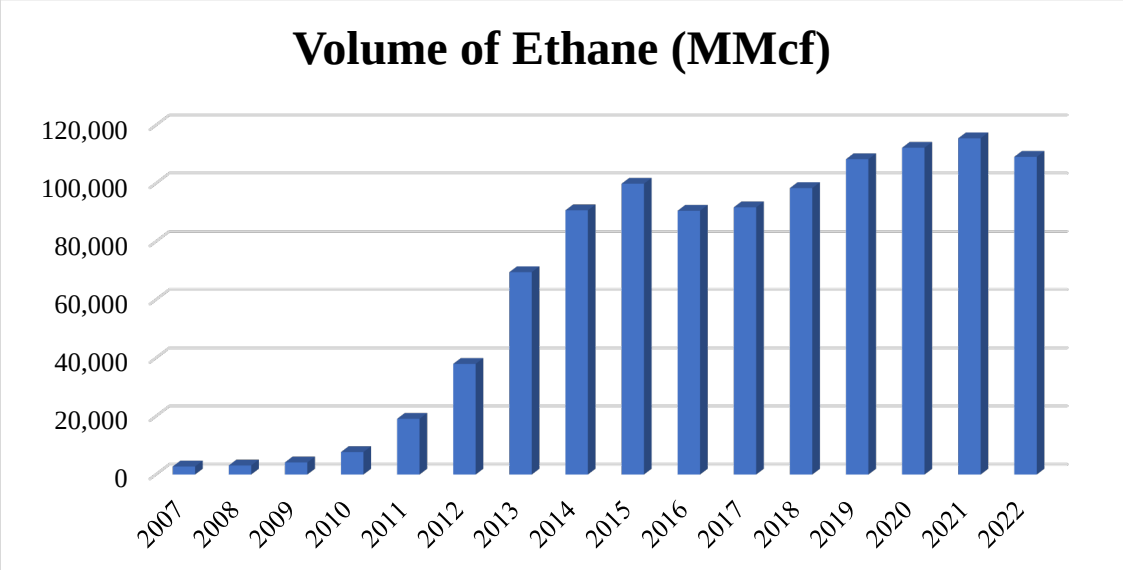
[45] See the Reuters' article available here: https://www.reuters.com/article/us-range-resources-ngls-mariner-east/range-finds-alternatives-to-ship-ngls-due-penn-mariner-east-shutdown-idUSKCN1J42EK.
[46] In the natural gas industry, the heat content of natural gas is often approximated to be 1,000 Btu/ft^3.
[47] Carbon monoxide has a heat content of 323 Btu/ft^3.

1. The heat content of gas consumed in Pennsylvania is the same as the heat content of the gas being produced in Pennsylvania. This assumption is necessary since EIA only provides data on the heat content of gas consumed.

2. The only NGL in the gas is ethane, and there are no other low-heat content impurities in the gas. This is done for simplicity. While there may be other impurities, including a small quantity of larger hydrocarbons, e.g., propane, butane, etc., ethane is used to try to derive an estimate of the overall amount of NGLs in the natural gas.

Using these assumptions, Figure 6, below, shows the theoretical quantity of ethane produced and fed into the natural gas system by Pennsylvania producers. These estimates were determined using the average heat content of natural gas delivered in Pennsylvania, combined with the gross production of natural gas in Pennsylvania.[48] Using the assumptions, above, it then follows that any additional heat content above 1,010 Btu/ft^3 of methane is derived purely from ethane, and the exact quantity of ethane injected into the natural gas system can be determined.

Figure 6: Hypothetical Volume of Ethane Injected into the Natural Gas System by Pennsylvania Producers (MMcf)



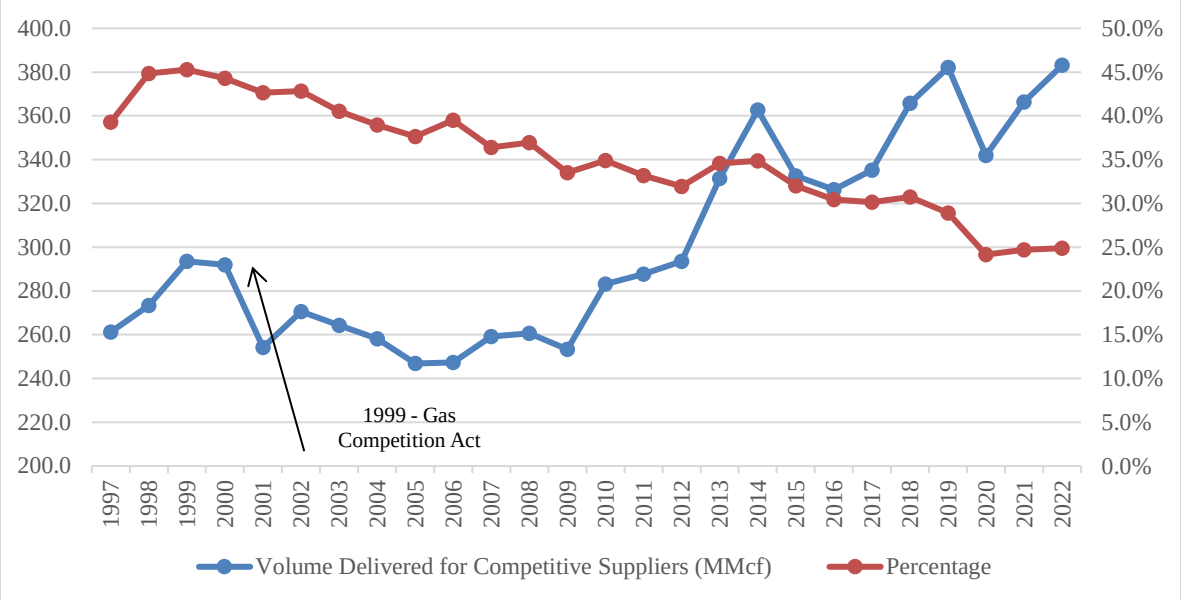
[48] EIA, *Heat Content of Natural Gas Delivered to Consumers*, and *Natural Gas Gross Withdrawals*, both available at http://www.eia.gov.

In 2022, this could have meant that an estimated 109,000 million cubic feet (MMcf) of NGLs currently being fed into the natural gas system would have been redirected, possibly causing the prices of both NGLs and natural gas to rise, creating incentive for additional production in Pennsylvania.

Figure 7, below, shows Pennsylvania deliveries of natural gas for competitive suppliers, often called transportation gas, as a percentage of total gas delivered. In 2022, 24.9% of the total natural gas delivered was for competitive suppliers in Pennsylvania. In 2022, the percentages of gas delivered for competitive suppliers by customer class were as follows:[49]

Residential: 11.9%
Commercial: 62.7%
Industrial: 98.9%

Figure 7: Natural Gas Delivered for Competitive Suppliers by Pennsylvania NGDCs [50] [51]



[49] EIA, Natural Gas Delivered for the Account of Others, available at: http://www.eia.gov.
[50] *Id*.
[51] The Natural Gas Choice and Competition Act was signed into law on June 22, 1999.

Since 2009, total transportation gas has been generally trending upward. While the total amount of transportation gas has been increasing, the percentage of transportation gas has been declining despite the slight rise in 2021, as overall usage in other delivery sectors has increased dramatically.

VI. Natural Gas Distribution Company (NGDC) Statistical Data

Customer Data

The information in Tables 5 and 6, below, is derived from data contained in the Gas Annual Reports and the ARPRs submitted to the Commission by those Pennsylvania NGDCs with greater than 8 Bcf of annual sales. The charts and data analysis in this section are derived from the raw data in these two tables.

Table 5: 2022 Customer Statistical Data

Company	*Number of Residential Customers*	*Average per customer usage (MCF)*	*Number of Commercial Customers*	*Average per customer usage (MCF)*	*Number of Industrial Customers*	*Average per customer usage (MCF)*	*Number of Transportation Customers*	*Average per customer usage (MCF)*
Columbia	360,154	81	26,571	346	84	3,000	58,340	705
Peoples	563,309	86	41,449	261	95	4,768	98,010	755
NFG	179,151	101	11,655	289	178	1,949	22,551	1,131
PECO	502,944	84	44,957	522	8	1,750	655	38,188
PGW	467,914	67	22,748	359	454	1,022	25,896	1,209
UGI	542,927	82	49,545	356	716	1,271	96,447	2,666

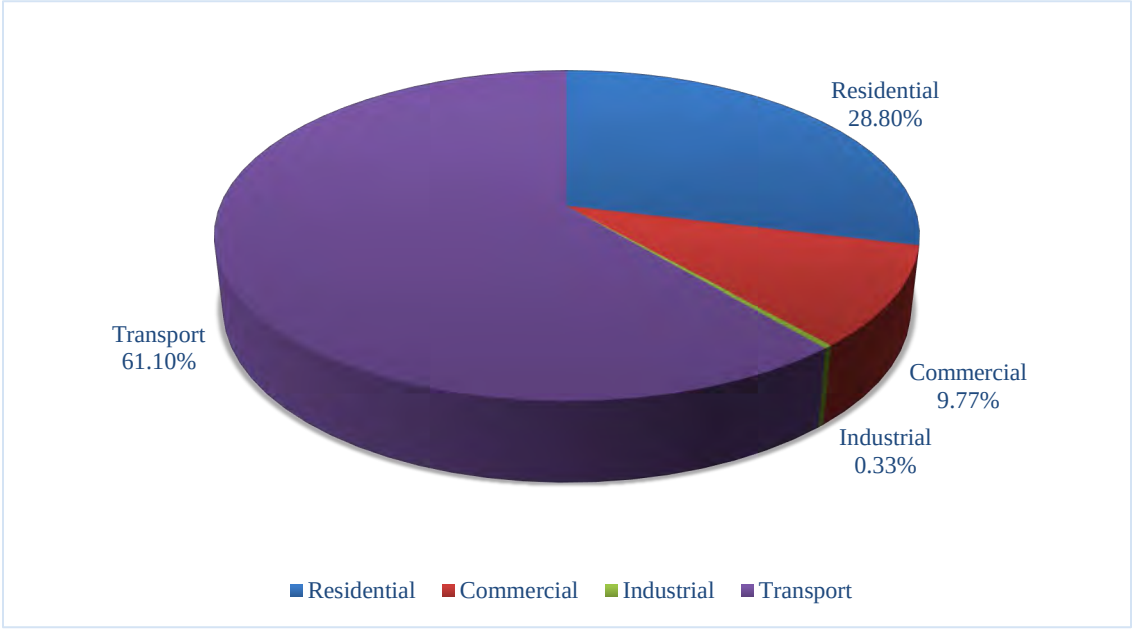
Table 6: 2021 Customer Statistical Data[52]

Company	*Number of Residential Customers*	*Average per customer usage (MCF)*	*Number of Commercial Customers*	*Average per customer usage (MCF)*	*Number of Industrial Customers*	*Average per customer usage (MCF)*	*Number of Transportation Customers*	*Average per customer usage (MCF)*
Columbia	353,598	76	25,992	311	71	2,901	63,020	680
Peoples	494,813	85	33,474	254	87	2,690	108,363	601
Peoples Gas	58,177	85	4,148	334	1	0	888	12,420
NFG	178,806	91	11,455	258	172	1,465	23,350	1,118
PECO	497,873	79	44,804	477	16	375	670	37,454
PGW	469,879	68	22,413	343	474	943	24,905	1,249
UGI	532,340	78	49,706	311	710	1,348	99,263	2,486

Chart 7, below, provides a breakdown of gas usage by customer class among Pennsylvania's major NGDCs (those with more than 8 Bcf in sales per year). 61.1% of all sales volume was from transportation customers, down from 62.3% the previous year. These are typically larger customers that procure their own natural gas supply, and the utility delivers the natural gas to them. Transportation also includes residential and commercial customers that utilize an alternate natural gas supplier (NGS).

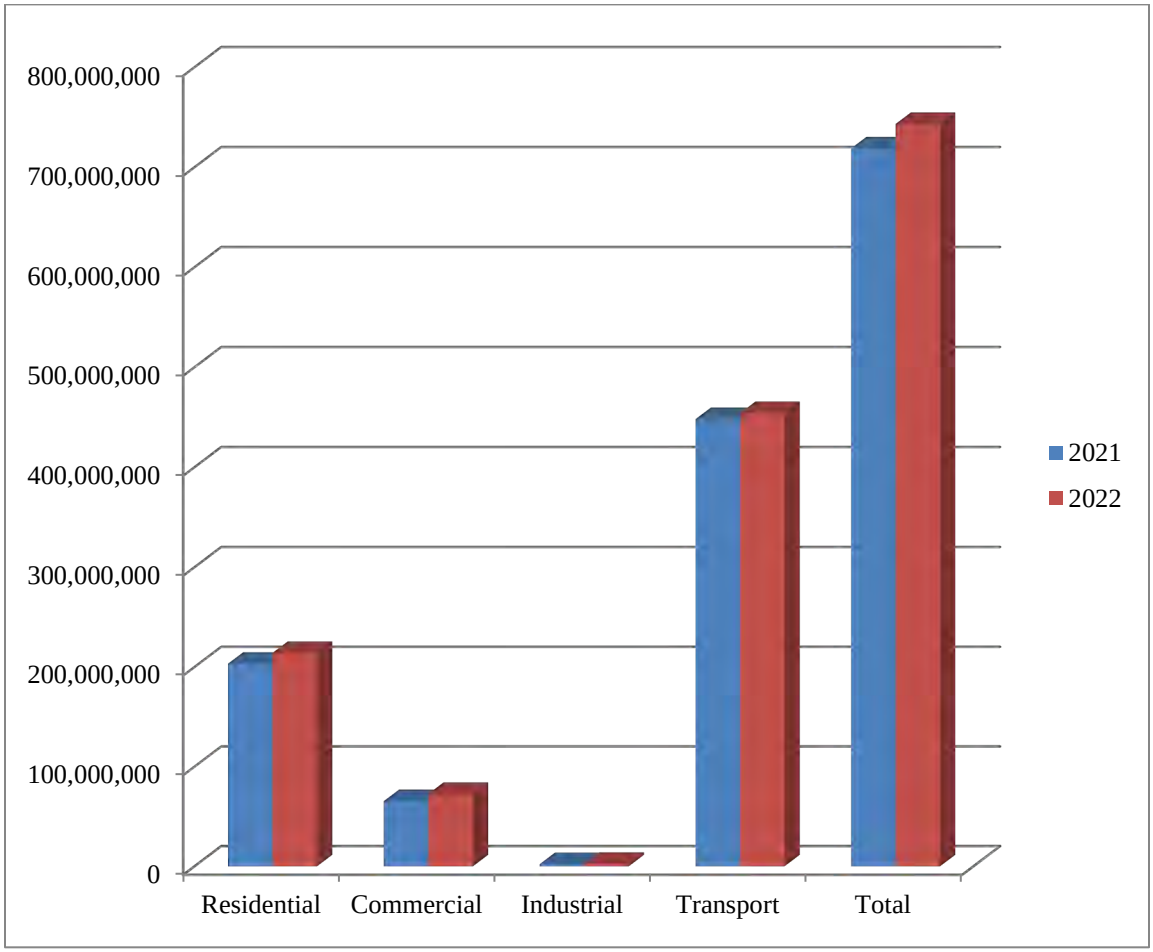
[52] The tracking of customer classes and natural gas usage are not necessarily done within one tracking system. Some customers may be classed in a certain category, but depending on their usage for the year, may end up assigned to a different rate class. This can create the appearance of a customer class with 0 Mcf of usage, when in actuality they had simply been shifted to a different rate class that year and are accounted for under a different category.

Chart 7: 2022 Pennsylvania Gas Usage by Customer Class within Major NGDCs



As seen in Figure 8, below, natural gas usage in 2022 was higher for all customer classes in Pennsylvania when compared to 2021.

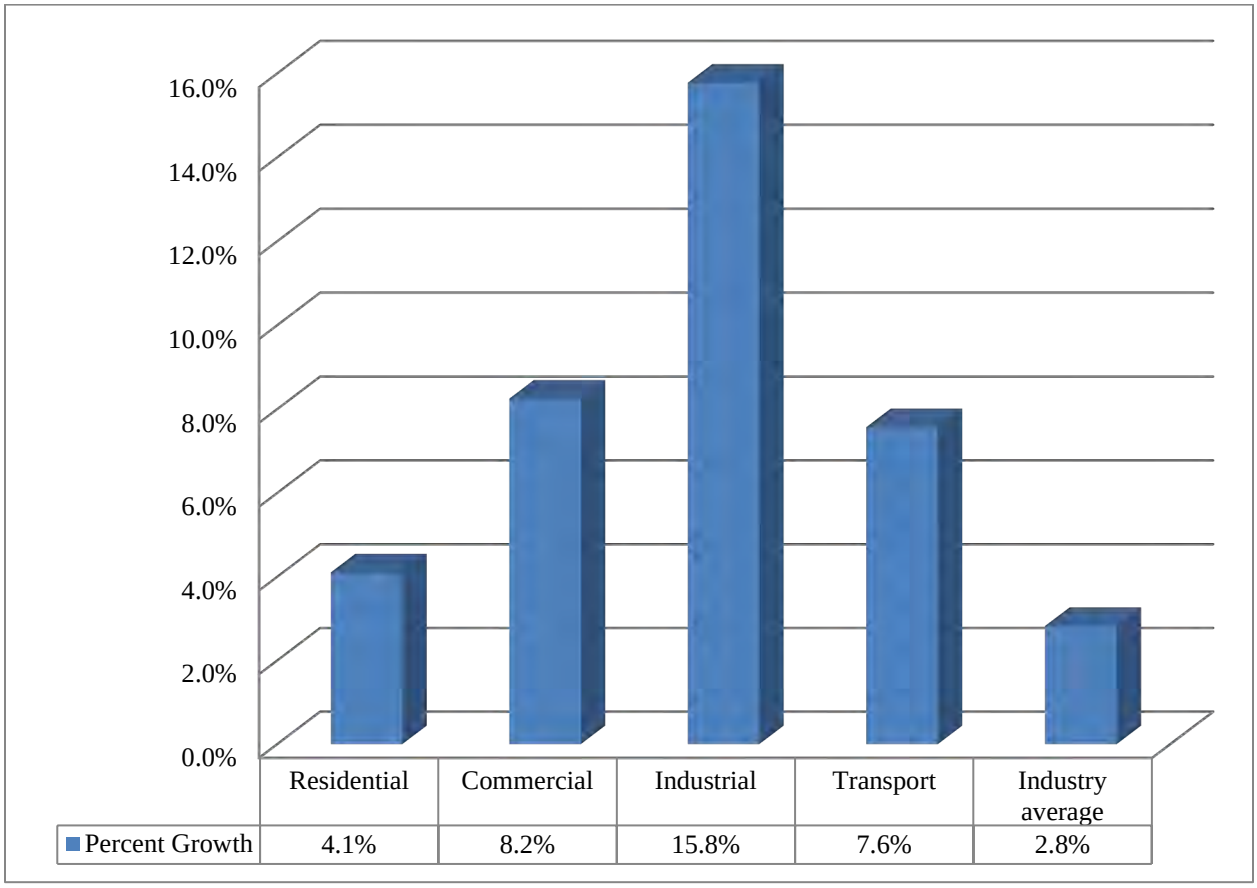
Figure 8: Pennsylvania Gas Usage by Customer Class within Major NGDCs: 2021-2022



In total, gas usage rose by 3.4% between 2021 and 2022, while the number of customers rose by 0.6%. This increase in usage was across all customer classes, with the highest increases being from the residential, commercial, and transportation classes. This may be in part an ongoing rebound from the decline in usage during the COVID-19 pandemic, which caused a number of businesses to curtail hours, or close down altogether for portions of 2020. The rise in the number of customers was also seen among all customer classes except transportation, with commercial in particular seeing the largest rise at a 2.6% increase in the number of customers.

Figure 9, below, shows the change in average customer usage by class.

Figure 9: Change in Average Customer Usage for Major NGDCs by Customer Class: 2021-2022



	Residential	Commercial	Industrial	Transport	Industry average
Percent Growth	4.1%	8.2%	15.8%	7.6%	2.8%

VII. Pennsylvania Natural Gas Distribution Company Gas Supply and Demand Balance

The following tables and charts provide natural gas supply and demand data for Pennsylvania's NGDCs. The NGDCs provided the supply and demand data for the 2022 delivery year. The data is presented for 2022 on an annual basis as well as for peak day. Peak day is non-coincident data such that demand for a specific customer class is not necessarily at the same time as the system peak. Data is derived from the ARPRs.[53]

[53] Some large users bypass the local distribution companies, buy gas at the wellhead or from suppliers, and receive the gas directly from the interstate pipelines. Gas-fired electric generation stations are usually bypass customers, and most of their gas consumption is not included in the PUC reports.

Table 7: 2022 Annual Gas Supply and Demand for Major Gas Utilities (MMcf)

	UGI	PGW	Columbia	NFG	PECO	Peoples
Gas Supply:						
Supply Contracts	84,373	43,478	29,566	13,290	57,785	34,160
Spot Purchases	17,484	10,308	9,836	8,315	10,697	39,703
Storage Withdrawal	0	0	0	0	0	0
LNG	0	3,106	0	0	0	0
Subtotal Gas Supply	101,857	56,892	39,402	21,605	68,482	73,863
Transportation	257,168	31,315	41,104	25,502	25,013	65,020
TOTAL GAS SUPPLY	359,025	88,207	80,506	47,107	93,495	138,883
Requirements:						
Firm Requirements	64,539	41,308	39,401	21,605	68,465	67,208
Liquefaction	0	1,786	0	0	0	0
Interruptible Requirements	0	1,379	0	0	17	0
Storage Injections	0	12,418	0	0	0	0
Subtotal Firm & Interruptible	64,539	56,891	39,401	21,605	68,482	67,208
Transportation	257,168	31,315	41,104	25,502	25,013	73,972
Load Deductions	(37,317)	0	0	0	0	0
TOTAL GAS REQUIREMENTS	359,024	88,206	80,505	47,107	93,495	141,180
Surplus (Deficiency)	1	1	1	0	0	(2,297)

Chart 8: Pennsylvania Gas Utility Annual Supply 2022

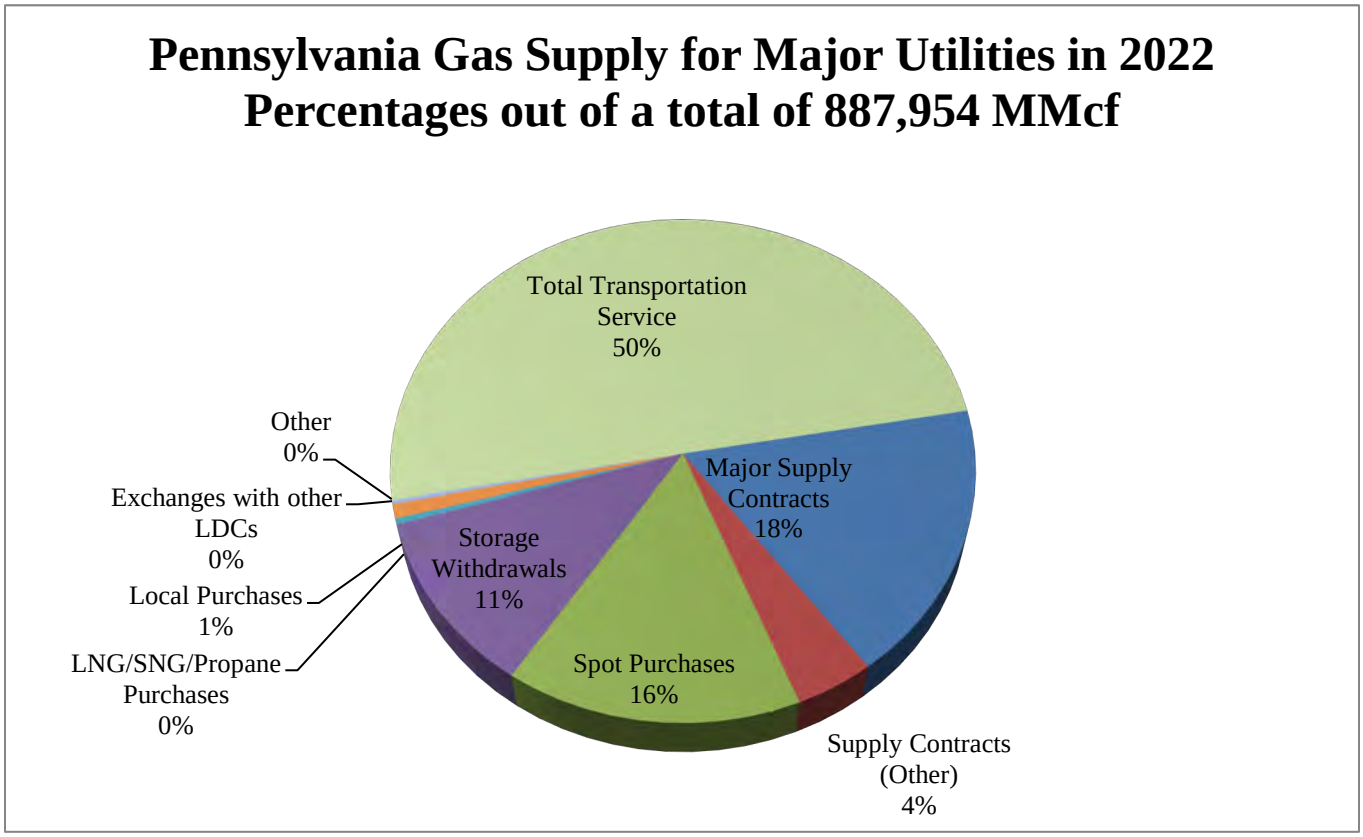
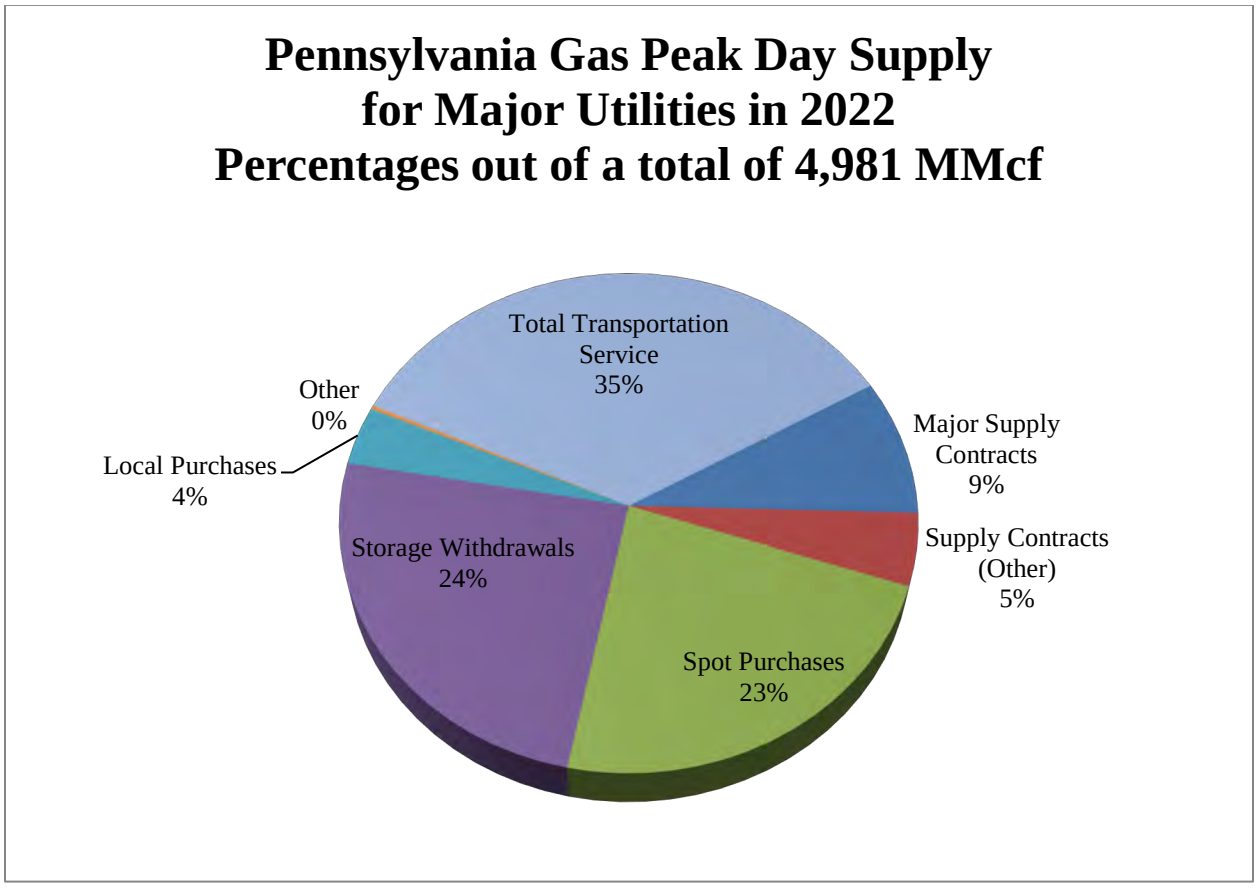


Table 8: 2022 Peak Day Gas Supply and Demand Balance for Major Gas Utilities (MMcf)

	UGI	PGW	Columbia	NFG	PECO	Peoples
Gas Supply:						
Supply Contracts	296	281	282	170	271	439
Spot Purchases	676	162	0	0	344	276
Storage Withdrawal	0	207	0	0	0	0
LNG	0	0	0	0	0	0
Subtotal Gas Supply	972	650	282	170	615	715
Transportation	680	18	215	150	148	346
TOTAL GAS SUPPLY	1,652	668	497	320	763	1,061
Requirements:						
Firm Requirements	678	576	282	170	614	599
Liquefaction	0	0	0	0	0	0
Interruptible Requirements	0	2	0	0	0	0
Storage Injections	0	11	0	0	0	0
Subtotal Firm & Interruptible	678	589	282	170	614	599
Transportation	869	79	215	150	148	462
Load Deductions	(106)	0	0	0	0	0
TOTAL GAS REQUIREMENTS	1,653	668	497	320	762	1,061
Surplus (Deficiency)	(1)	0	0	0	1	0

Chart 9: Pennsylvania Peak Day Supply 2022



Section 3 – Financial Data

VIII. Natural Gas Distribution Company Financial Statistics

Data Set

This section presents selected NGDC financial data taken from the Gas Annual Reports of the major NGDCs for an 11-year period from 2012 through 2022.[54]

The data in Tables 9 through 13 below includes operating revenues and expenses, net operating income, gross plant in service, administrative and general expense, maintenance expense, depreciation expense and total gas cost, and average cost of gas purchased by the NGDC.

[54] Note: UGI Central Penn Gas was purchased from PPL Gas Utilities in 2007. UGI Penn Natural Gas was purchased from PG Energy in 2006. Equitable Gas Company merged with Peoples Natural Gas in 2013-2014, becoming Peoples Natural Gas Company, which has since merged with Peoples Gas Company. For ease of comparison in the tables, the data for Peoples includes combined data for Peoples, Equitable, and Peoples Gas during the years when they were still separate companies. UGI now reports as a combined company, so totals across the three companies in prior years have also been combined.

Table 9: Operating Revenue and Operating Expense

OPERATING REVENUE ($ Million)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Total
2012	406.3	215.9	545.4	681.6	784.7	243.5		2,877.4
2013	512.3	235.5	600.8	827.7	855.8	688.2		3,720.3
2014	563.3	248.3	646.8	946.1	973.9	746.6		4,125.0
2015	536.2	196.9	546.5	802.0	853.7	621.5		3,556.7
2016	493.9	175.0	463.4	667.1	739.7	629.0		3,168.1
2017	552.6	204.6	495.3	766.7	868.1	635.0		3,522.3
2018	590.2	215.3	569.8	820.0	1,002.0	697.2		3,894.4
2019	602.4	206.9	611.4	818.0	965.5	703.4		3,907.5
2020	555.3	189.2	515.1	722.6	908.1	608.1		3,498.4
2021	666.6	206.2	538.9	789.7	1,016.0	692.1		3,909.5
2022	867.6	274.8	738.2	1,050.1	1,365.1	850.7		5,146.5

OPERATING EXPENSE ($ Million)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Total
2012	337.6	176.9	350.2	485.9	549.2	177.0		2,076.8
2013	416.1	187.9	484.8	571.0	592.5	491.2		2,743.5
2014	478.5	209.0	525.7	797.0	841.8	627.3		3,479.3
2015	445.2	165.0	430.5	660.0	731.2	564.9		2,996.8
2016	400.2	143.3	340.1	538.6	609.5	520.7		2,552.3
2017	467.1	177.0	367.7	643.2	713.5	540.0		2,908.4
2018	450.2	187.1	421.8	667.2	837.9	563.3		3,127.5
2019	466.8	175.1	457.7	645.4	780.2	552.5		3,077.7
2020	427.2	163.9	379.0	535.3	741.7	468.9		2,716.0
2021	510.5	165.2	392.0	570.4	824.9	480.7		2,943.6
2022	654.5	245.5	561.4	796.8	1,117.5	613.6		3,989.2

Table 10: Net Operating Income and Administration & General Expense

NET OPERATING INCOME ($ Million)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Total
2012	27.9	106.3	110.7	135.3	33.8	32.7		446.9
2013	70.3	37.6	116.1	90.2	164.5	56.5		535.2
2014	97.0	45.8	121.0	165.3	182.9	67.7		679.8
2015	100.4	35.8	115.9	140.3	161.2	5.8		559.5
2016	66.8	24.0	123.2	84.2	109.7	63.3		471.3
2017	85.8	20.2	127.6	86.1	136.0	56.1		511.8
2018	105.8	21.8	148.0	104.5	127.2	97.7		605.0
2019	97.0	27.4	153.7	115.7	135.9	124.1		653.8
2020	86.6	20.9	136.2	137.3	119.5	105.0		605.4
2021	110.5	34.7	146.9	181.4	148.5	174.0		795.9
2022	162.7	20.6	176.8	216.4	203.3	198.2		978.1

ADMINISTRATION & GENERAL EXPENSE ($ Million)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Total
2012	47.4	28.9	32.7	80.5	61.4	15.1		265.9
2013	53.0	31.2	28.0	93.7	75.7	107.9		389.4
2014	58.9	27.7	27.4	75.3	79.8	110.9		380.0
2015	62.3	27.9	30.2	79.6	85.8	152.9		438.8
2016	70.5	24.5	31.3	63.2	72.8	168.3		430.7
2017	91.5	28.2	33.2	59.9	85.4	148.5		446.7
2018	64.8	30.3	33.8	60.6	91.0	133.0		413.4
2019	74.2	26.0	31.1	59.3	96.8	120.8		408.2
2020	84.6	30.7	31.2	56.1	110.4	89.5		402.3
2021	86.7	8.5	33.6	55.8	112.5	50.7		347.7
2022	85.4	21.9	33.6	50.4	101.0	71.0		363.2

Table 11: Maintenance Expense and Depreciation Expense

MAINTENANCE EXPENSE ($ Million)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Total
2012	14.4	3.3	20.8	41.4	27.5	8.8		116.3
2013	15.5	5.6	27.0	45.2	28.0	33.6		154.9
2014	18.3	6.1	26.8	47.6	31.9	40.5		171.2
2015	22.0	6.4	32.4	47.6	34.3	38.5		181.1
2016	23.6	5.9	29.5	42.5	30.8	41.0		173.4
2017	25.8	6.1	29.9	42.7	33.2	42.5		180.3
2018	22.3	6.4	28.7	48.7	38.4	45.8		190.3
2019	23.8	6.8	30.2	51.7	41.7	46.5		200.8
2020	25.7	6.8	33.6	53.8	23.7	45.7		189.2
2021	28.5	7.6	34.2	53.6	23.0	47.9		194.8
2022	27.6	9.1	35.1	57.0	21.3	47.1		197.4

DEPRECIATION EXPENSE ($ Million)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Total
2012	14.4	11.4	35.1	53.8	46.5	14.1		175.2
2013	33.4	11.4	36.7	55.1	49.2	41.5		227.3
2014	37.7	11.5	39.2	53.6	52.5	41.7		236.1
2015	42.1	12.0	42.0	53.3	56.8	44.6		250.8
2016	47.5	12.9	43.1	56.0	60.7	46.7		267.0
2017	52.0	14.2	47.2	59.9	66.9	48.6		288.9
2018	55.6	14.4	51.8	64.5	74.6	60.5		321.4
2019	65.7	14.4	56.4	69.6	86.7	68.2		361.0
2020	72.3	15.0	59.7	76.4	100.9	65.0		389.2
2021	79.0	16.3	63.2	83.9	111.4	70.2		424.1
2022	86.8	16.1	69.3	106.5	117.8	70.5		467.1

Table 12: Total Gas Costs and Average Cost of Gas Purchased

TOTAL GAS COSTS ($ Million)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Total
2012	152.8	69.4	239.1	251.1	391.5	127.3		1,231.0
2013	265.3	79.3	275.5	342.5	467.0	258.9		1,688.5
2014	259.1	91.3	320.3	397.6	545.6	295.1		1,909.0
2015	182.6	44.5	189.2	311.8	361.1	196.8		1,286.0
2016	114.7	22.5	174.1	213.7	307.1	149.8		981.8
2017	176.4	54.3	190.9	307.3	401.7	187.9		1,318.5
2018	184.2	62.5	297.1	350.8	507.8	203.5		1,605.9
2019	157.4	57.9	209.6	322.8	451.8	191.7		1,391.2
2020	120.9	37.1	163.3	236.7	484.8	144.3		1,187.1
2021	207.5	56.2	222.2	331.4	443.7	216.0		1,477.0
2022	359.8	120.2	423.0	603.5	695.1	329.6		2,531.1

AVERAGE COST OF GAS PURCHASED ($/MCF)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Ave.
2012	4.79	3.37	5.47	7.30	6.16	4.98		5.35
2013	5.75	3.81	5.51	5.29	4.74	5.29		5.06
2014	6.25	4.07	6.15	5.25	5.29	5.78		5.46
2015	4.90	2.10	4.09	4.20	6.29	4.17		4.29
2016	3.56	1.21	3.97	4.60	4.34	3.33		3.50
2017	5.22	2.85	4.39	5.44	4.02	4.28		4.37
2018	4.43	2.93	6.11	4.11	4.55	4.31		4.41
2019	4.30	2.82	4.53	4.78	5.64	4.17		4.37
2020	3.60	1.90	4.11	3.93	5.79	3.44		3.80
2021	5.20	2.84	5.17	5.42	5.66	5.18		4.91
2022	9.14	5.59	8.61	8.14	8.08	7.66		7.87

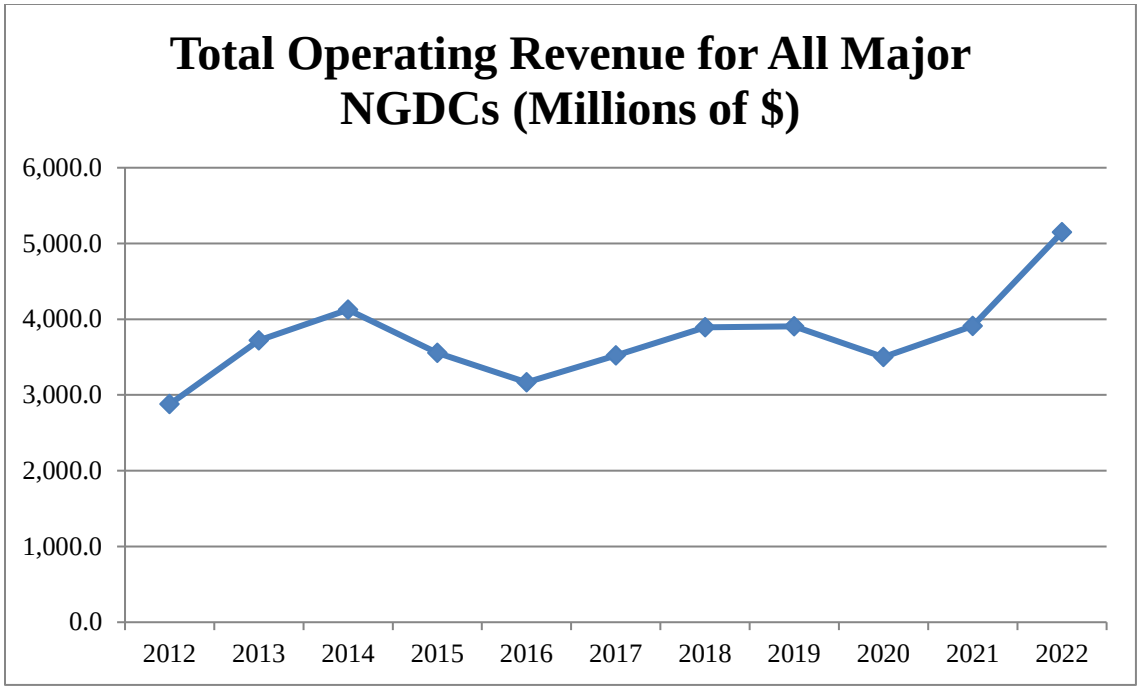
Table 13: Gross Utility Plant in Service

GROSS UTILITY PLANT IN SERVICE ($ Million)								
	Columbia	NFG	PECO	Peoples	UGI	PGW		Total
2012	1,198.2	501.4	1,859.5	2,392.7	2,137.4	618.1		8,707.2
2013	1,335.7	511.7	1,932.4	2,350.6	2,262.9	1,596.6		9,989.9
2014	1,500.5	527.2	2,071.4	2,469.8	2,418.9	1,646.7		10,634.5
2015	1,660.1	542.5	2,205.4	2,589.7	2,581.9	1,685.2		11,264.7
2016	1,860.1	577.8	2,260.4	2,697.5	2,945.3	1,741.5		12,082.6
2017	2,074.1	594.5	2,503.6	2,892.3	3,035.8	1,793.6		12,893.9
2018	2,330.6	611.8	2,694.0	3,110.5	3,329.1	1,905.1		13,981.0
2019	2,568.9	637.9	2,899.1	3,357.7	3,681.6	2,038.5		15,183.7
2020	2,851.1	662.2	3,098.4	3,592.3	4,004.8	2,172.1		16,380.9
2021	3,141.1	690.8	3,339.3	3,872.3	4,359.7	2,331.7		17,735.1
2022	3,449.5	710.2	3,619.8	3,862.9	4,767.9	2,544.7		18,955.0

IX. Industry Trends

Many indicators of the financial status of the gas utilities in Pennsylvania are very closely correlated with current prices of natural gas. The single largest expense for NGDCs is the procurement of natural gas and the largest source of revenue is the sale of natural gas.[55] Therefore, as gas prices have remained low in recent years, so too have the sales revenues of the NGDCs. The uptick in 2022 for revenues and expenses is largely attributable to an increase in commodity prices. Figures 10 through 12, below, illustrate this correlation with very similar patterns for Operating Revenues, Operating Expenses, and the Average Cost of Gas Purchased for the major NGDCs since 2012.

Figure 10: Total Operating Revenue for All Major NGDCs (Millions of $)



[55] Pennsylvania natural gas utilities do not derive any net earnings or profits from natural gas commodity prices. The cost of procuring natural gas for customers is purely a pass-through cost. NGDCs only earn a profit on the delivery of the commodity to customers.

Figure 11: Total Operating Expenses for All Major NGDCs (Millions of $)

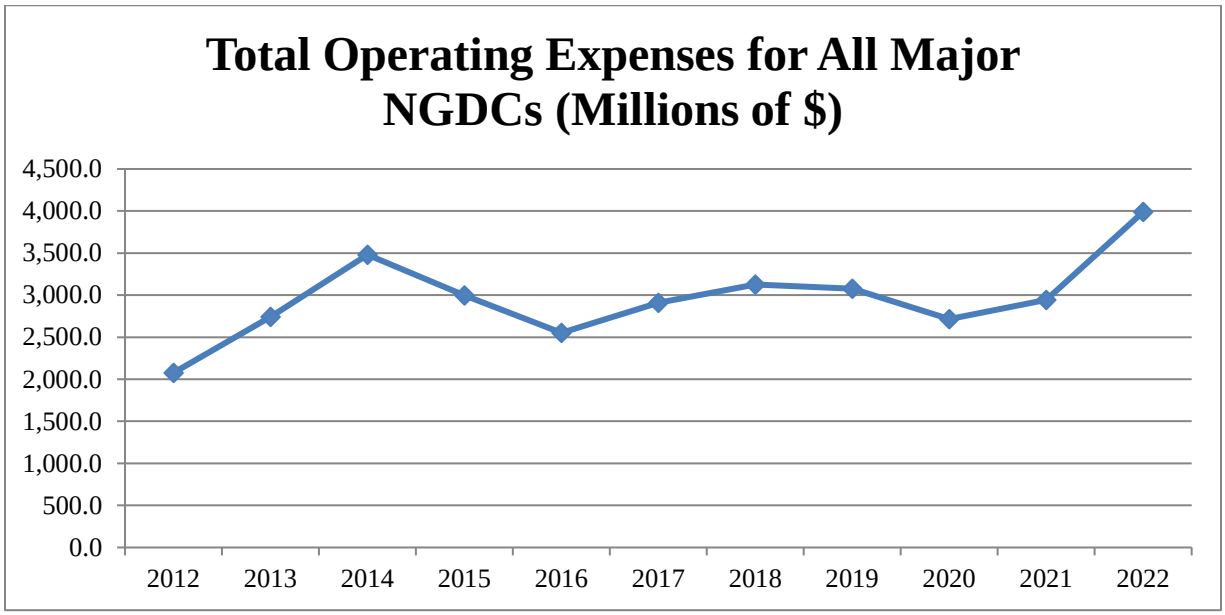
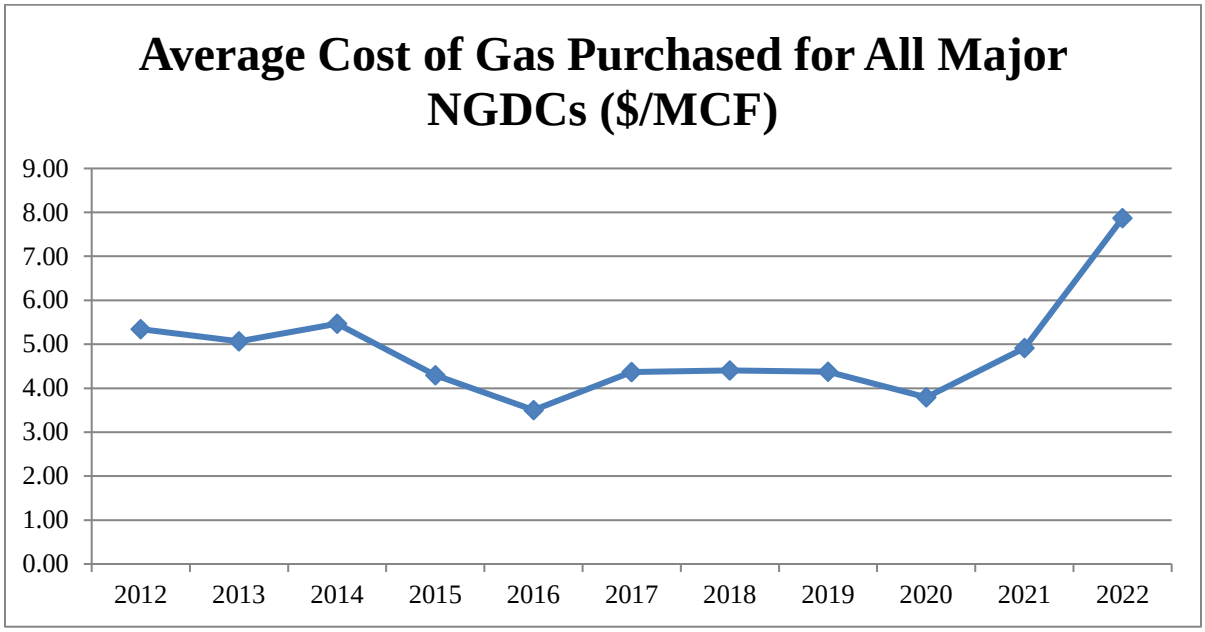


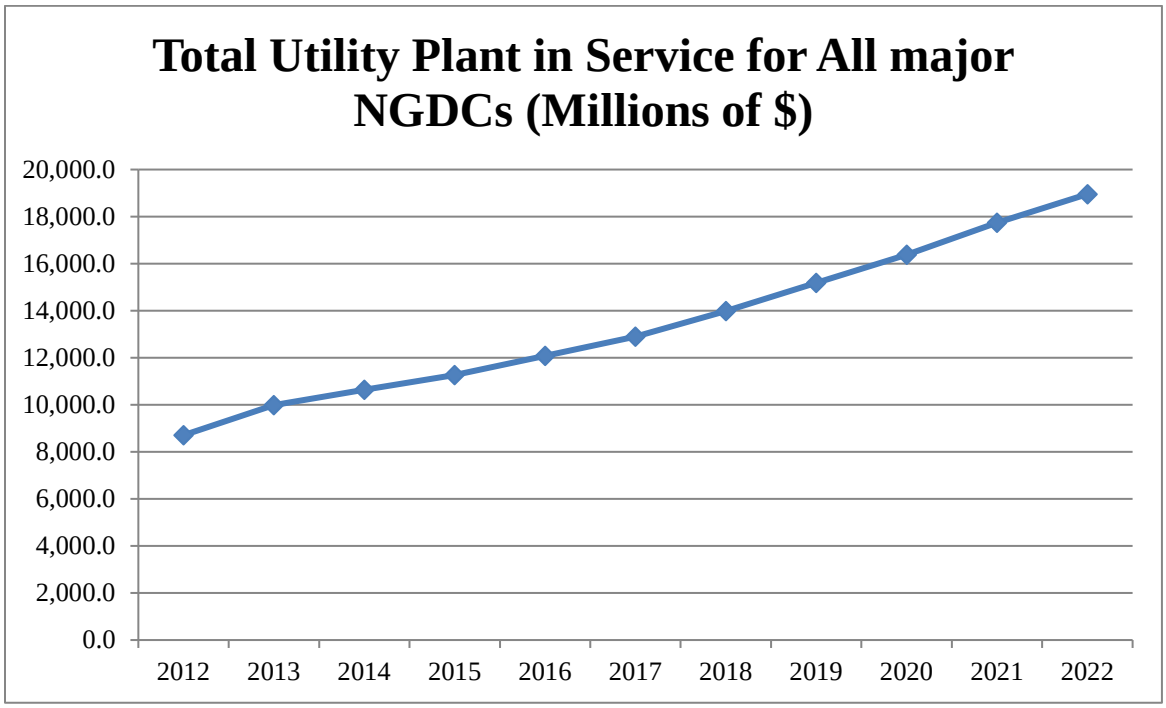
Figure 12: Average Cost of Gas Purchased for All Major NGDCs ($/Mcf)



Over the past decade, NGDCs have been steadily investing in their infrastructure. Much of the increase in infrastructure spending was spurred by the implementation of Commission-approved Long-Term Infrastructure Improvement Plans (LTIIPs) and their corresponding Distribution

System Improvement Charge (DSIC) mechanisms for most of the major NGDCs.[56] Figure 13, below, shows that the major NGDCs have added approximately $931 million per year to their total utility plant in service. This equates to a cumulative increase of 117.7% in plant in service for the total industry since 2012. Figure 14, below, shows that while all NGDCs have increased plant in service since 2012, PGW and Columbia have the fastest rates of increase. PGW has more than quadrupled its total plant in service since 2012, while Columbia has nearly tripled its plant in service over the same period. NFG has the slowest rate of increase at 41.6% since 2012.[57]

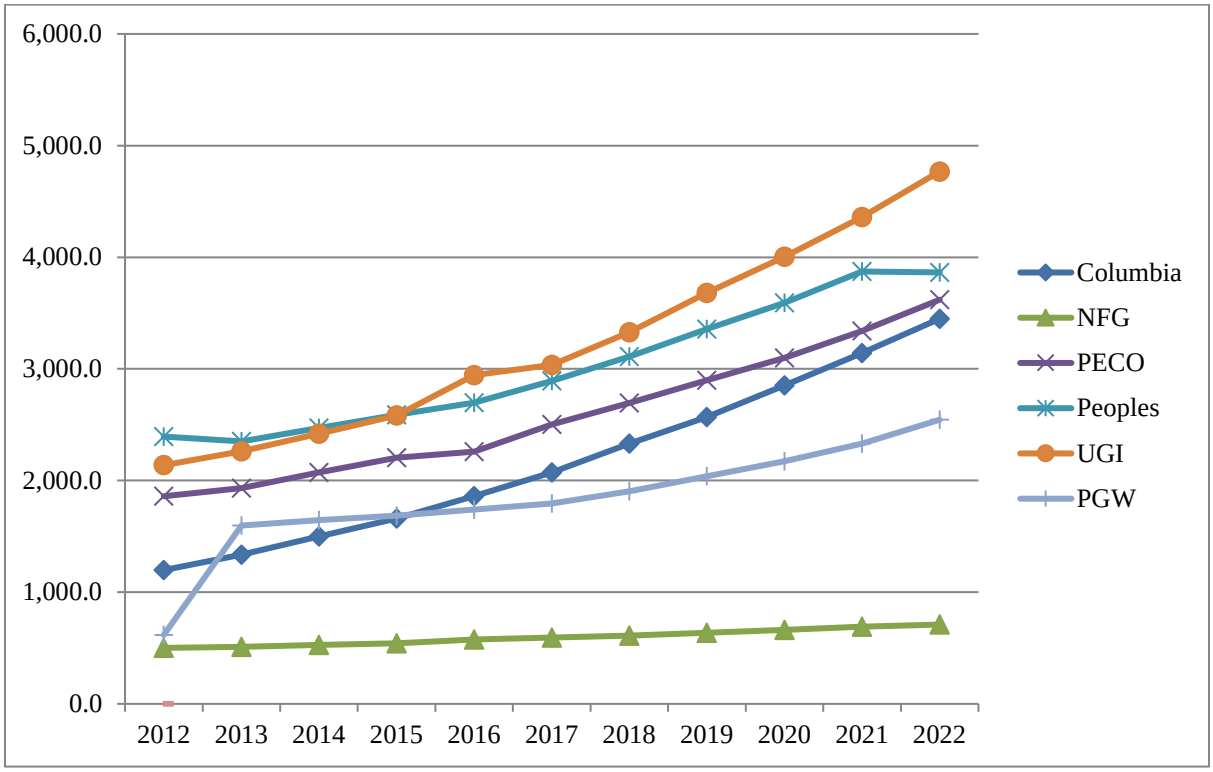
Figure 13: Total Utility Plant in Service for All Major NGDCs (Millions of $)



[56] *See Final Implementation Order*, order entered May 23, 2014, at Docket No. L-2012-2317274.

[57] All of the other major NGDCs besides PGW and Columbia have had an increase in total plant in service of approximately 60-120% since 2012. The only other notable exception is NFG, with an increase of only 41.6%. NFG is also the only major NGDC in Pennsylvania that did not have a Commission-approved LTIIP for most of the prior decade. However, NFG filed a Petition for approval of an LTIIP on September 2, 2022, at Docket No. P-2022-3034957, which was approved by Commission Order entered December 22, 2022.

Figure 14: Cumulative Increase in Utility Plant in Service for Each Major NGDC (Millions of $, base year 2012)



Section 4 - Conclusion

X. Summary

Natural gas production decreased slightly in Pennsylvania in 2022, contrary to the national increase in production in 2022. Despite the slight drop in production, natural gas deliveries to consumers in Pennsylvania increased in 2022. Natural gas prices rose in 2022, but it appears that prices will drop substantially through 2024. These price fluctuations are significant, as natural gas has become the largest portion of Pennsylvania's electric power generation, and it seems likely that it will continue to be the largest share of the electric generation portfolio going forward.

A notable shift in the industry is that while natural gas usage in the electric power generation sector has been increasing over the past decade, the share of natural gas being allocated to electric power generation has leveled off over the past couple of years. In Pennsylvania, electric power generation currently accounts for more than half of all natural gas deliveries to consumers. Despite the leveling off of electric power generation in Pennsylvania, the other sectors of usage seem to be continuing to drive increases in natural gas consumption in the Commonwealth.

In general, it appears that the natural gas industry in Pennsylvania is robust, and drilling for new natural gas wells is still continuing. Natural gas utilities in Pennsylvania are making significant investments in their infrastructure, to ensure that they will be prepared to meet any increased demand in the future, providing the residents and businesses of the Commonwealth with safe and reliable natural gas service.

Acronyms

ARPR	= Annual Resource Planning Report
Bcf	= Billion cubic feet
Bcfd	= Billion cubic feet per day
EIA	= Energy Information Administration
GSC	= Gas Supply Cost
LDC	= Local Distribution Company
LNG	= Liquefied Natural Gas
Mcf	= Thousand cubic feet
MMBtu	= Million British Thermal Units
MMcf	= Million cubic feet
MW	= Megawatt
NGDC	= Natural Gas Distribution Company
NGL	= Natural Gas Liquids
NGS	= Natural Gas Supplier
NYMEX	= New York Mercantile Exchange
PUC	= Public Utility Commission
Tcf	= Trillion cubic feet

Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120
www.puc.pa.gov
1-800-692-7380