REDISCOVERING THE MOST MATURE HYDROCARBON REGION IN THE WORLD

New York's natural gas and oil production have increased significantly during the past decade. New York produced 55 billion cubic feet (Bcf) of natural gas in 2005; representing an 18 percent increase over 2004 and exceeding the previous record gas production in 1938. New York's current annual gas production represents a nearly three-fold increase since the mid-1990s. Natural gas was produced in 21 counties in the New York in 2005. Most of the State's natural gas production comes from the deep Trenton-Black River formation in five counties that accounts for about 80 percent (44 Bcf) of total production. Cutting-edge seismic imaging, horizontal drilling, and multi-lateral completion technologies are needed to successfully explore for and develop deep Trenton-Black River wells. Such technologies are now profitable to apply in New York State given the attractivenatural gas prices that have prevailed in recent years.

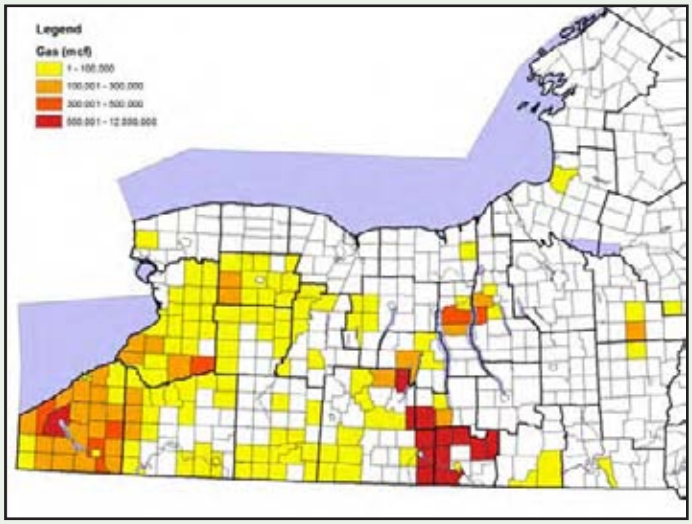


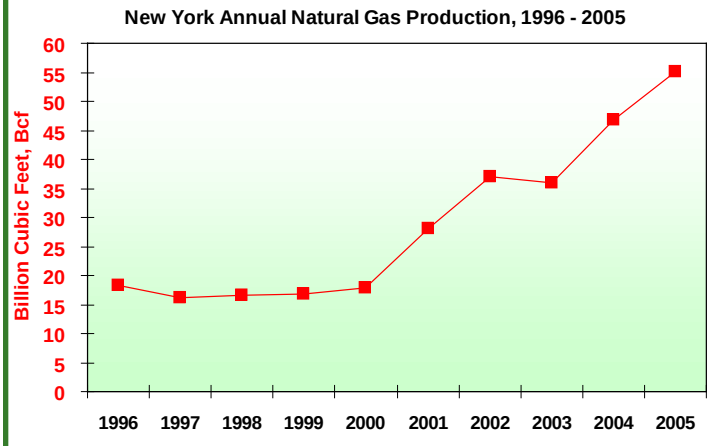
Photo: The high-deliverability Stagecoach facility is the easternmost underground natural gas storage facility in the United States. The field uses horizontal wells to increase gas flow. The Stagecoach facility has a maximum withdrawal capacity of 500 MMcf/day to meet peak gas needs in the eastern United States. Map: Annual Natural Gas Production by Town, 2005, courtesy of NY Division of Mineral Resources.

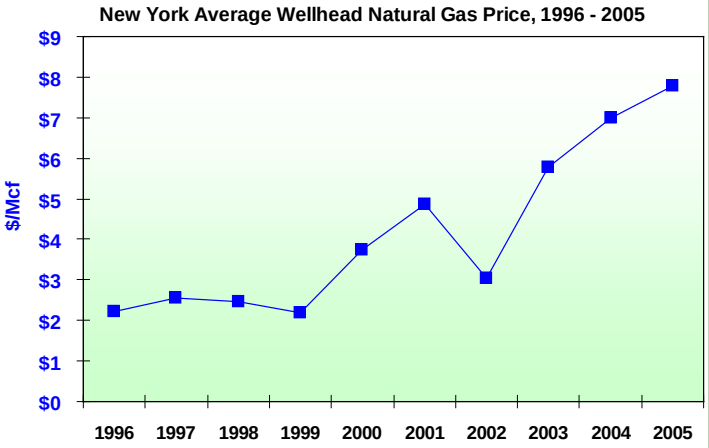
Annual crude oil production in New York State, although not reaching record production like natural gas, has reached levels not seen since the mid-1990s. In 2005, New York produced more than 211,000 barrels (nearly 580 barrels per day), up 15 percent over 2004 production. Oil is produced in Cattaraugus, Chautauqua, Allegany, Erie, and Steuben Counties. High crude oil prices have stimulated the drilling of new oil wells in old fields.

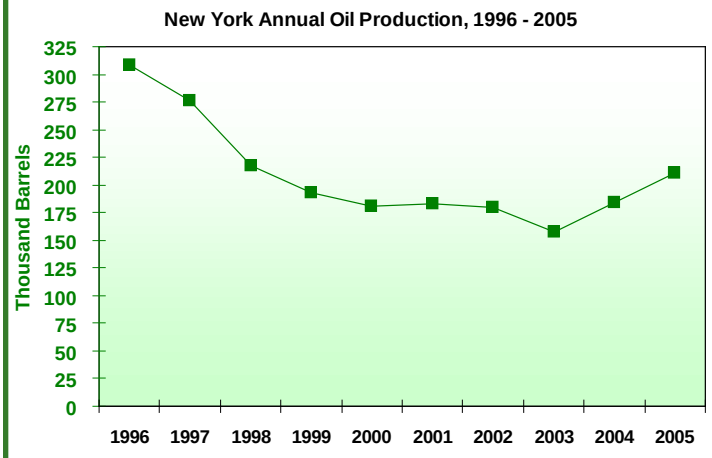
The pace of oil and gas well drilling in 2005 was four times that of the late 1990s. Drilling permits in the State are at a 20-year high.

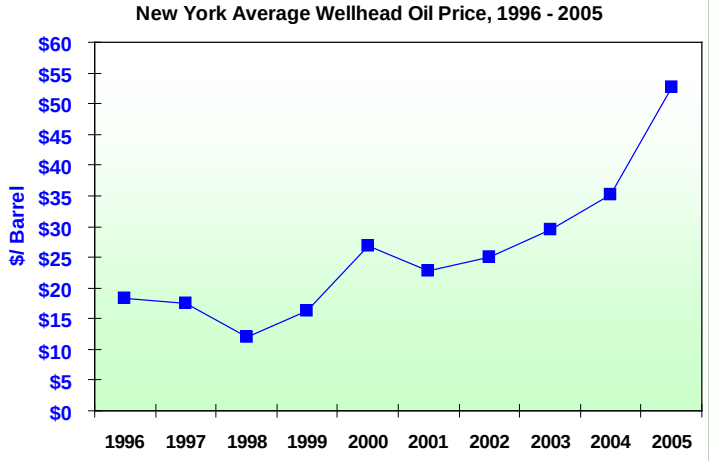
In 2006, 352 gas well permits were issued; nearly double the 180 permits issued in 2005. At least 183 new gas wells were completed in 2006, a substantial increase from the 104 gas well completions in 2005. Similarly, 186 oil well permits were issued in 2006, slightly less than the number of oil well permits issued in 2005, but nearly four times the number in 2004. Oil well completions surged to 166 new oil wells in 2006, up from 95 oil well completions in 2005. More than 8,700 wells were producing oil and natural gas in New York in 2005, with about twice as many producing gas wells as oil wells.[7]

New York Production is Responding to Higher Natural Gas and Crude Oil Prices









What is a Mcf, MMcf, Bcf or Tcf?

Natural gas is sold in units of thousand cubic feet, (Mcf, using the Roman numeral for one thousand). Units of a million cubic feet (MMcf), billion cubic feet (Bcf), or trillion cubic feet (Tcf) are used to measure larger quantities. The United States currently consumes about 22 Tcf annually. A Tcf is enough natural gas to:

- Heat 15 million homes for one year
- Generate 100 billion kilowatt-hours of electricity
- Fuel 12 million natural-gas-fired vehicles for one year

How much is a bbl?

A barrel (bbl) of crude oil or natural gas liquids is equal to 42 U.S. gallons.

The United States currently consumes about 20 million barrels (MMbl) of oil per day, or 7.3 billion barrels (Bbbl) per year.

Bbl = barrel

New York's Natural Gas Resources Have Easy Access to Interstate Pipelines, Gas Storage Facilities and High-Value Markets

Natural gas producers in New York are generally not far from an interstate gas pipeline. Moreover, New York natural gas supplies are close to the large East Coast market. This proximity gives New York a competitive advantage compared to other gas producing regions such as the Rocky Mountain West. This advantage is generally translated into higher prices for their production.

New York's natural gas production is also close to a significant concentration of underground natural gas storage facilities, which play a critical role in balancing natural gas supply and demand in the region and the nation. New York has twenty-five underground natural gas storage facilities, mostly in the western and central regions of the State. Twenty-four storage facilities are located in depleted natural gas fields and one storage facility is a solution-mined salt cavern. An additional three facilities store liquefied petroleum gas. A total of 808 storage wells have the capability to deliver up to 1.9 Bcf of natural gas per day. Seven new gas storage wells were completed in 2006. Access to ample gas storage capacity allows New York's natural gas production to increasingly serve the Northeast power generation and home heating markets, in addition to its traditional industrial consumers.

New York Citizens Benefit from the State's Oil and Gas Production

New York State consumed more than 1,000 Bcf of natural gas and 250 million barrels of petroleum fuel in 2005. Although New York consumes far more natural gas and oil than it produces; the State's 2005 natural gas production of over 55 Bcf was nevertheless enough to supply 800,000 homes for a year and meet about five percent of the State's natural gas demand. The total market value of New York's 2005 oil and natural gas production was about $440 million, representing a nearly ten-fold increase in market value compared to ten years ago.

Job Creation. New York's natural gas and oil production not only makes important contributions to the region's domestic energy portfolio; it also creates significant positive benefits to the New York State economy, especially in upstate rural and agricultural areas. One benefit is job creation. According to the U.S. Department of Labor, New York's oil and gas industry directly employs nearly 4,500 people in the areas of exploration and production, pipeline transportation of natural gas and petroleum, and refining and natural gas processing. Total petroleum industry employment in the State is more than 50,000 people, largely in the wholesale and retail trade of petroleum fuel and the distribution of natural gas.[8]

Northeast Natural Gas Interstate Pipelines

Snapshot of Oil and Natural Gas Activity in New York State

Activity	Natural Gas	Oil
2005 Annual Production	55,176 MMcf	211,292 bbl
2005 Active Wells	5,957 wells	2,767 wells
2006 Well Permits Issued	352 permits	186 permits
2006 Wells Completed (reported as of 4/23/07)	183 wells	176 wells

Royalty Payments and Tax Receipts. Landowners and local communities reap economic benefits from oil and gas development in the State in the form of royalty payments to landowners and taxes paid to local governments. Landowners typically receive royalties of 1/8 (12.5 percent) of the value of production from an oil or gas well on their land. Some landowners in the prolific Trenton-Black River natural gas production trend collect royalties of $100,000 or more per year. In 2005, approximately $53 million was paid to primarily rural landowners in the form of royalties on oil and gas production, an increase of 27 percent over 2004.

Local governments in New York assess annual taxes on oil and gas production on a unit of production value determined by the State Division of Equalization and Assessment. For 2005, the Division of Mineral Resources estimates the total amount of local taxes collected for the State's oil and gas production at approximately $13 million. This represents a nearly ten-fold increase over annual tax receipts a decade ago. Since 1996, local governments have collected more than $44 million in tax revenues from oil and gas production, primarily in western New York and the Southern Tier.

The Economic Benefit of Natural Gas Development in New York Increased drilling and oil and gas production in New York correspond to increased investment in the State. The economic impact of this investment and the resulting oil and gas production is most significant when evaluated at the local level. The dramatic increase in New York production over the past several years has been primarily due to deep natural gas discoveries in the central New York Finger Lakes region and the Southern Tier.

The largest operator of Trenton-Black River wells in New York is Fortuna Energy Inc. In 2006, Fortuna Energy drilled or participated in a total of 17 horizontal and 5 vertical Trenton Black River wells. According to an economic impact study recently completed by Fortuna Energy, the company directly spent $72.3 million in the region in 2005, with the largest outlay being $43.6 million in royalty payments to more than 1,000 landowners. The company spent $20.2 million for goods and services from local suppliers. Fortuna Energy has concluded that the impact on gross regional economic output from their direct spending includes:

- $50.6 million in direct spending stimulus
- $4.9 million of indirect impacts arising from business to business spending
- $10.8 million of output gains induced by increased household incomes

In addition, Fortuna Energy estimates that its operations generate the equivalent of 700 jobs in the region and more than $8 million in additional tax revenues. [13]

Center for Energy Technology at Jamestown Community College

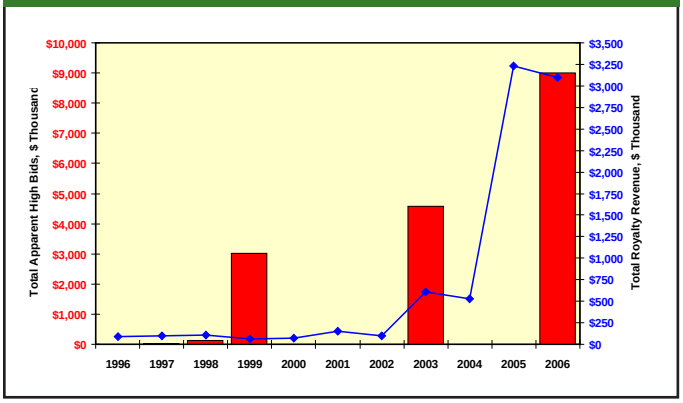
*Local communities can benefit from the employment opportunities created by New York's reinvigorated oil and natural gas industry only to the extent that there are enough qualified workers to fill the jobs. To meet the growing demand for skilled employees, NYSERDA, in partnership with the Jamestown Community College and the Independent Oil and Gas Association of New York (IOGA-NY), is helping to launch the Center for Energy Technology at Jamestown Community College to train and develop a capable regional workforce equipped for the modern New York oil and gas industry. The Center for Energy Technology will offer job trai*ning, public outreach, job placement, and other *vocational programs developed in coordination with IOGA-NY and other organizations.*

The Economic Benefit of Natural Gas Exploration and Development in New York – A Single Well Example Of the 55.2 Bcf of natural gas produced in New York in 2005, 44 Bcf was produced by just 71 Trenton-Black River gas wells. This example illustrates the substantial local economic impact of a prolific Trenton-Black River producing well. [14]

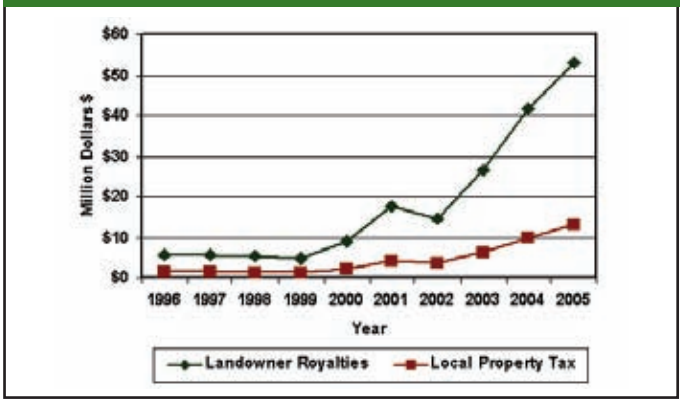
State Land Leasing Revenues The success of Trenton-Black River and other natural gas development on private lands, which led to renewed interest in the resource potential and development opportunities on State-owned lands. Leasing of New York State lands provides revenue from four sources:

- Bonus bids placed at State lease sales to acquire leases
- Delay rental payments to the State to hold non-producing leases
- Royalty payments to the State equal to a share of the market value of natural gas or oil produced from the lease, typically 12.5 percent
- Storage lease fees.

New York State Land Leasing Revenues 1996 - 2006[15]



Landowner Royalties and Local Government Taxes



Total state land leasing revenues have increased dramatically since 1998. New York has received a total of $29.5 million in lease revenues from all sources since 1985, of which $26.1 million was received after 1998. The State lease sales during 2006 produced more than $9.0 million in apparent high bids on 19,300 acres, nearly double the $4.6 million received in apparent high bids from the previous lease sale in 2003.

Annual royalty payments to the State have increased by two orders of magnitude since 2002, due to growing Trenton-Black River production and rising natural gas prices. New York received royalty revenue of more than $3 million in 2005, and again in 2006.

"Scores of rural 'upstaters' ride high natural gas prices all the way to the bank..."

Despite a long history of oil and gas production, New York State is experiencing a new surge in development which provides economic benefits to diverse public and private stakeholders. The hydrocarbon resource potential that remains in New York suggests that these economic benefits can continue for years to come. Oil and gas development in New York continues to play an important role in the economic development of the State, especially in rural upstate communities.

"...Retirees and farmers in the Southern Tier of New York—the area between the Finger Lakes and Pennsylvania—are cashing royalty checks of $5,000 a month or more, courtesy of a gusher of new natural gas wells drilled in the area... Some struggling to make ends meet as dairy farmers are the beneficiaries of a natural gas boom in New York... The boom has created numerous jobs in addition to infusing cash into a struggling part of the State..."

New York Post, February 4, 2007

Year	Gas Mcf	Estimated Homes Heated	$/Mcf	Wellhead Value	Landowner Royalty	Local Assessed Value
2002	631,138	9,147	$3.03	$1,912,348	$239,044	$2,294,347
2003	1,647,301	23,874	$5.00	$8,236,505	$1,029,563	$1,922,796
2004	584,818	8,476	$6.98	$4,082,030	$510,254	$1,729,968
2005	241,462	3,499	$7.78	$1,878,574	$234,822	$637,460
Total	**3,104,719**			**$16,109,457**	**$2,013,682**	

Drilling a Deep Natural Gas Well in New York

Collecting Seismic Data. Geophysicists, geologists, and engineers search for underground reservoirs of oil and natural gas, using both surface and subsurface techniques. In exploring for oil and natural gas, prospectors may drill several unsuccessful wells for each successful one. Technologies like seismic imaging have increased the likelihood that exploratory wells will be successful.[9]

Access Road to Drill Site. If exploration efforts indicate the possible existence of a hydrocarbon prospect, some land disturbance will be necessary to drill a well. The actual drilling of the well is just a temporary activity, similar to a construction project, requiring some movement of equipment on site. A site of about one to four acres may need to be cleared. This may require the use of existing roads or the construction of new roads on a landowner's property to get to the drilling site.[10]

Drilling a Deep Trenton Black River Well. Trenton-Black River natural gas prospects in New York can be accessed successfully through vertical or horizontal drilling. Drilling to typical 10,000 ft. depths generally takes from two to eight weeks, depending on many factors. After the conductor, surface and intermediate steel casing strings are cemented, the well is drilled to the target depth and production casing is cemented in place. The drill rig may be utilized to complete the well or the operator may choose to bring in a smaller rig to test and complete the well if it appears capable of producing an economic volume of natural gas. Wells may have water, sand or other materials injected into the reservoir to fracture the rock and thus improve the flow of gas from the reservoir to the well bore.[11]

Producing Gas Well Site. If the well is capable of economic production and all well drilling and testing are complete, the drilling site is reclaimed, generally within 45 to 60 days, with a smaller active area reserved for production equipment. Production equipment can include wellhead-valve assemblies, meters, tanks and gas gathering lines. Special equipment may be required to treat the gas to remove any water or impurities. An access road to the site is maintained.[12]

Reclaimed Drilling Site. If no commercial gas production is established, no production site is built, and the well site is reclaimed. The wellbore is plugged with cement; a combination of steel casing and cement plugs protect potable water aquifers. All surface structures and equipment are removed and the site is completely reclaimed. Landowners may request special conditions for site reclamation.