

# Promoting Energy Supply: Impact on Pennsylvania's Economy

June 2005

The energy outlook for the U.S. has changed substantially over the last few years as the outlook for natural gas supplies has undergone a complete about-face. There has been little growth in U.S. lower-48 supplies, and imports from Canada have leveled off and may have peaked. LNG is now expected to play a much larger role in meeting the growing demand for natural gas, but its development is subject to myriad regulatory hurdles that may derail many planned projects.

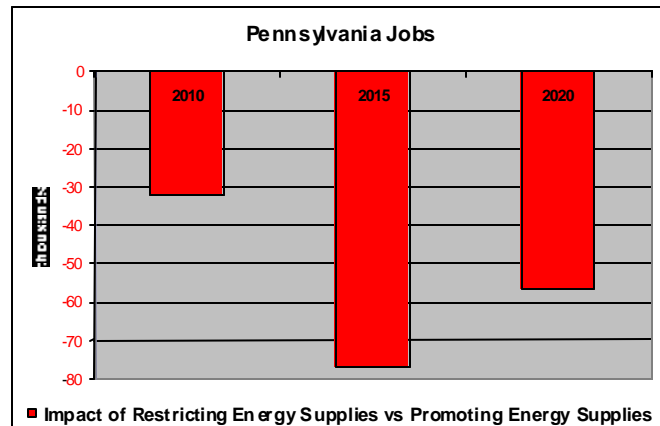
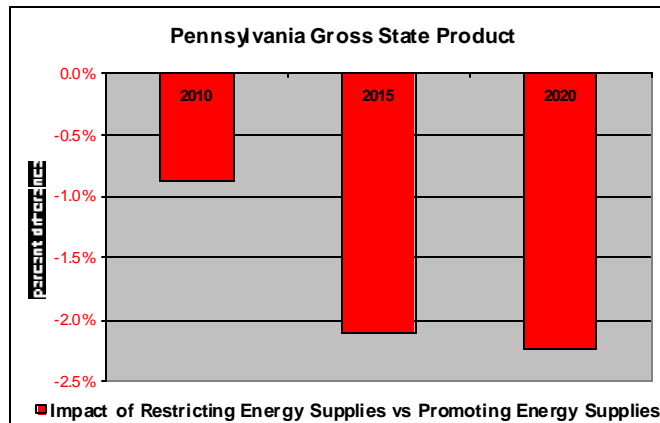
Against the backdrop of a tighter supply picture for natural gas, the fuel substitution option is severely constrained as a mechanism for meeting the steady tightening of emission limits. During the 1990s, it was forecast that the low cost of low-emission gas combined cycle plants combined with the low cost of natural gas would make gas the option of choice for meeting emission limits. As gas supplies have tightened (and gas prices have risen), power generators and large manufacturers are facing tightening emission limits with fewer, more expensive choices.

- Pennsylvania's economy would expand by 28% from 2010 to 2020 (at a rate of 2.5% per year) under policies that increase access to domestic energy resources.

- In contrast, policies that restrict energy supplies would reduce Pennsylvania's Gross State Product by 2.2% in 2020.

- Jobs are a critical issue for Pennsylvania's prosperity. Policies promoting energy supplies would result in 315,000 new jobs in the next decade.

- In contrast, under restrictive energy policies, Pennsylvania would have 56,000 fewer jobs by 2020, and hourly wages would be lower.



Looking forward, there are policy options to improve economic performance by **promoting energy supplies** by ensuring adequate supplies at globally competitive prices while making steady improvements in air quality. Likewise, there are policies that would **restrict energy supplies** and lead to lower economic performance without a notable gain in air quality.

Global Insight has been commissioned by the National Association of Manufacturers and the American Council for Capital Formation to measure the impacts on U.S. manufacturing and the overall economy of two scenarios that are defined by key energy and environmental policy options.

## **Promoting Energy Supplies Increases US Economic Performance, US Manufacturing Output Expands, 18 Million Jobs are Created**

Under the **Promoting Energy Supplies** scenario, US economic performance is enhanced by the availability of energy resources at globally competitive prices. Continued reliance on domestically produced fuels, a steady increase in economically attractive renewable resources and the building of several new nuclear units contributes to a strong economy. Over the period 2010-2020,

- Real GDP growth averages 3.1%.
- Business fixed investment grows at an annual rate of 6.3% per year.
- Industrial production increases at 3.5% per year.
- Real disposable income rises 3.2% per annum.
- Employment expands 1.25% per year; 18 million new jobs are created.
- Manufacturing output grows 3.0% per year.
- Manufacturers employ more than 13 million people.

## **Restricting Energy Supplies Would Cost the US Economy 1.3 Million Jobs, Manufacturing Output would be 6% Lower**

Under the **Restricting Energy Supplies** scenario, tightening mercury emission limits, enactment of severe limits on carbon dioxide emissions, and barriers to development of natural gas supplies combine to dramatically increase the cost of energy and reduce economic growth compared to the Promoting Energy Supplies scenario.

- Homeowners would pay 26% more for natural gas in 2010, and 21% more for electricity. By 2020, natural gas would cost 31% more, and electricity prices would be 61% higher.
- Manufacturers would see similar price hikes, reducing global competitiveness.
- The economy's performance would be weaker.
- Real GDP would fall 2.3% below the Promoting Energy Supplies case by 2020.
- Industrial production would be 12% lower by 2020.
- Real disposable income would be 2.2% below the Promoting Energy Supplies case by 2020.

## Pennsylvania Gains Jobs and Better Wages with Policies that Promote Energy Supplies

Pennsylvania's economic performance would benefit from policies that encourage development of domestic energy supplies, but could be damaged by stringent controls on mercury and greenhouse gas emissions. Pennsylvania's economy would expand by 2.5% per year next decade, resulting in more and better paying jobs.

### Stronger Economic Outlook for Pennsylvania under the Promoting Energy Supply Scenario

Pennsylvania	2010			2015			2020		
	PES	RES	%diff.	PES	RES	%diff.	PES	RES	%diff.
<b>Gross State Product (million 2000\$)</b>	505360	500930	-0.9%	574146	561980	-2.1%	649040	634465	-2.2%
<b>Manufacturing Output (mil. 2000\$)</b>	81994	80691	-1.6%	88842	84920	-4.4%	95498	89663	-6.1%
Manufacturing, Durables	38204	37657	-1.4%	40853	39088	-4.3%	43269	40673	-6.0%
Manufacturing, Nondurables	43791	43034	-1.7%	47990	45831	-4.5%	52229	48990	-6.2%
<b>Non-Manufacturing Output (mil. 2000\$)</b>	423366	420240	-0.7%	485304	477060	-1.7%	553542	544802	-1.6%
Government	43768	43875	0.2%	47619	47676	0.1%	51547	51855	0.6%
Agriculture, Forestry, & Fishing	1281	1270	-0.9%	995	971	-2.5%	771	749	-2.9%
Construction	17450	17093	-2.0%	18599	17276	-7.1%	19639	17807	-9.3%
Mining	1346	1303	-3.1%	1163	1108	-4.7%	995	854	-14.1%
Educational & Health Services	50896	50803	-0.2%	58084	57630	-0.8%	66095	65848	-0.4%
Financial Activities	101378	100761	-0.6%	117045	115959	-0.9%	133995	133157	-0.6%
Information	25491	25519	0.1%	31527	31337	-0.6%	38622	38186	-1.1%
Leisure & Hospitality	14585	14538	-0.3%	16311	16091	-1.3%	18142	17970	-0.9%
Professional & Business Services	62291	61464	-1.3%	73791	73079	-1.0%	86852	87571	0.8%
Trade & Transportation	83709	82918	-0.9%	97725	94949	-2.8%	113285	109943	-3.0%
Utilities	10015	9436	-5.8%	10191	8441	-17.2%	10300	7218	-29.9%
Other Services	11157	11259	0.9%	12253	12543	2.4%	13299	13645	2.6%
<b>Employment (thousands)</b>									
Total Nonfarm	5904	5872	-0.5%	6054	5977	-1.3%	6219	6163	-0.9%
Manufacturing									
Manufacturing, Durables	415	410	-1.2%	402	381	-5.1%	389	358	-7.8%
Manufacturing, Nondurables	266	264	-0.7%	250	246	-1.6%	242	240	-0.9%
Non-Manufacturing									
Government	762	764	0.3%	774	778	0.5%	789	798	1.2%
Construction, Natural Rsrcs, Mining	273	268	-2.0%	277	259	-6.7%	280	256	-8.8%
Educational & Health Svcs	1064	1063	-0.1%	1098	1094	-0.4%	1141	1143	0.2%
Financial Activities	343	341	-0.6%	344	342	-0.5%	343	343	0.0%
Information	115	115	0.2%	119	119	-0.2%	124	123	-0.5%
Leisure & Hospitality	503	502	-0.3%	513	508	-0.9%	525	523	-0.3%
Professional & Business Svcs	726	717	-1.3%	808	803	-0.6%	887	900	1.4%
Trade & Transportation	1126	1116	-0.9%	1144	1116	-2.4%	1165	1137	-2.4%
Utilities	26	25	-2.6%	24	21	-11.0%	22	18	-19.0%
Other Services	284	287	1.0%	300	309	2.8%	313	323	3.2%
<b>Wages (2000\$)</b>									
Avg. Hourly Earnings, Manufacturing	16.59	16.44	-0.9%	17.99	17.65	-1.9%	19.45	18.83	-3.2%
<b>Income (Millions, 2000\$)</b>									
Personal Income	448317	443224	-1.1%	499395	487896	-2.3%	551494	536804	-2.7%
Disp. Personal Income	393177	389184	-1.0%	433589	425211	-1.9%	479224	468485	-2.2%
<b>Population (Thousands)</b>	12396	12396		12330	12330		12213	12213	

Source: Global Insight, Inc.

Note: The Promoting Energy Supply Case is denoted by PES, Restricting Energy Supply Case is RES.

## Scenario Descriptions

	<b>Promoting Energy Supply Scenario</b>	<b>Restricting Energy Supply Scenario</b>
<b>Climate Change Policy Assumptions</b>	No federal requirements for mandatory reduction in greenhouse gases (GHG)	McCain-Lieberman (S. 139) enacted for GHG emission reductions in 2010 and 2016
<b>Mercury Policy Assumptions</b>	15-ton cap by 2018, with a cap and trade program, no MACT	Emissions reduced by 90% by 2010-2012 through MACT standards, without regard to coal type, no cap and trade and assuming limited technology advancement by 2012
<b>SO<sub>2</sub>, NO<sub>x</sub> Assumptions</b>	CAIR and all ongoing regulatory programs, including required future phases	CAIR and all ongoing regulatory programs, including required future phases
<b>Natural Gas Supply Assumptions</b>		
<b>Offshore drilling</b>	Restrictions/moratoria removed	No leasing of new areas
<b>Federal Onshore</b>	Federal changes to increase access (excluding Wilderness and Parks) reduce permitting costs and delays by 50% in first five years (as in 9/03 NPC study)	Highly restrictive federal impediments [to access]
<b>Alaskan gas pipeline</b>	Pipeline completed by 2018	No pipeline
<b>Canadian gas</b>	Imports ramp down to 1.0 tcf by 2015	Imports ramp down to zero by 2015
<b>LNG</b>	As many as 5-7 regasification terminals are built before 2015	No new LNG regasification terminals are built other than the facilities that are contracted and under construction.
<b>Nuclear Power Assumption</b>	4 new gigawatts on-line by 2015 (in addition to the rise in nuclear generation due to returning units, uprates of existing units, and increased utilization)	0 new gigawatts on-line by 2015 (but, does include the rise in nuclear generation due to returning units, uprates of existing units, and increased utilization)
<b>Renewable Portfolio Standards Assumption</b>	No new federal or state standards and a permanent extension of the Renewable Energy Production Tax Credits	No new federal or state standards and a permanent extension of the Renewable Energy Production Tax Credits