

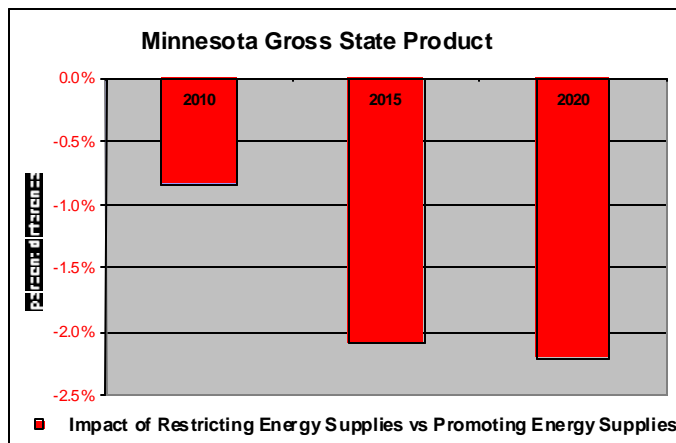
Promoting Energy Supply: Impact on Minnesota's Economy

June 2005

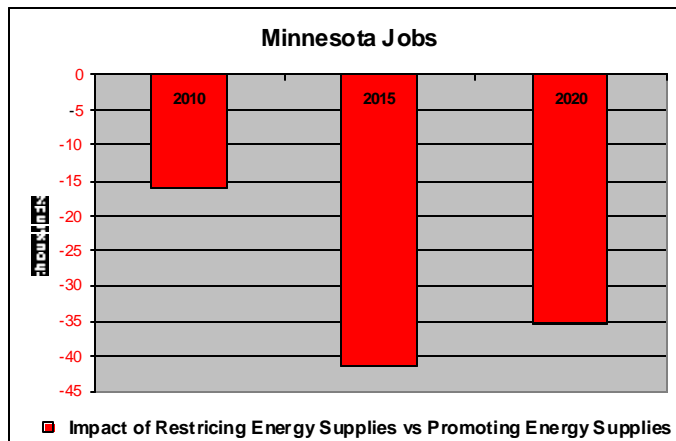
The energy outlook for the U.S. has changed substantially over the last few years as the outlook for natural gas supplies has undergone a complete about-face. There has been little growth in U.S. lower-48 supplies, and imports from Canada have leveled off and may have peaked. LNG is now expected to play 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.

- Minnesota's economy would expand by 39% from 2010 to 2020 (at a rate of 3.4% per year) under policies that increase access to domestic energy resources.
- In contrast, policies that restrict energy supplies would reduce Minnesota's Gross State Product by 2.2% in 2020.



- Jobs are a critical issue for Minnesota's prosperity. Policies promoting energy supplies would result in 302,000 new jobs in the next decade.
- In contrast, under restrictive energy policies, Minnesota would have 35,000 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.

Minnesota Gains Jobs and Better Wages with Policies that Promote Energy Supplies

Minnesota'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. Minnesota's economy would expand by 3.4% per year next decade, resulting in more and better paying jobs.

Stronger Economic Outlook for Minnesota under the Promoting Energy Supply Scenario

Minnesota	2010			2015			2020		
	PES	RES	%diff.	PES	RES	%diff.	PES	RES	%diff.
Gross State Product (million 2000\$)	249671	247554	-0.8%	294655	288485	-2.1%	348209	340484	-2.2%
Manufacturing Output (mil. 2000\$)	38530	37946	-1.5%	45728	43732	-4.4%	54285	51001	-6.0%
Manufacturing, Durables	27597	27202	-1.4%	33797	32338	-4.3%	41070	38606	-6.0%
Manufacturing, Nondurables	10933	10744	-1.7%	11930	11394	-4.5%	13215	12395	-6.2%
Non-Manufacturing Output (mil. 2000\$)	211141	209608	-0.7%	248927	244754	-1.7%	293923	289483	-1.5%
Government	22824	22880	0.2%	25372	25402	0.1%	28178	28346	0.6%
Agriculture, Forestry, & Fishing	3808	3774	-0.9%	5233	5104	-2.5%	7203	6995	-2.9%
Construction	11152	10924	-2.0%	13227	12286	-7.1%	15840	14363	-9.3%
Mining	328	318	-3.1%	338	322	-4.7%	343	295	-14.1%
Educational & Health Services	19814	19777	-0.2%	22301	22126	-0.8%	25221	25126	-0.4%
Financial Activities	52320	52002	-0.6%	61244	60676	-0.9%	71624	71176	-0.6%
Information	9751	9762	0.1%	11268	11200	-0.6%	13014	12867	-1.1%
Leisure & Hospitality	7949	7924	-0.3%	9494	9367	-1.3%	11352	11245	-0.9%
Professional & Business Services	33377	32934	-1.3%	40468	40078	-1.0%	48786	49190	0.8%
Trade & Transportation	42118	41720	-0.9%	51961	50485	-2.8%	63963	62076	-3.0%
Utilities	2646	2493	-5.8%	2575	2133	-17.2%	2498	1751	-29.9%
Other Services	5054	5100	0.9%	5447	5576	2.4%	5900	6053	2.6%
Employment (thousands)									
Total Nonfarm	2866	2850	-0.6%	3008	2967	-1.4%	3168	3133	-1.1%
Manufacturing									
Manufacturing, Durables	231	229	-1.2%	232	220	-5.1%	232	214	-7.8%
Manufacturing, Nondurables	126	125	-0.7%	124	122	-1.6%	126	125	-0.9%
Non-Manufacturing									
Government	425	426	0.3%	441	443	0.5%	458	463	1.2%
Construction, Natural Rsrcs, Mining	144	141	-2.0%	157	147	-6.7%	176	161	-8.8%
Educational & Health Svcs	402	401	-0.1%	411	410	-0.4%	426	427	0.2%
Financial Activities	189	188	-0.6%	198	197	-0.5%	205	205	0.0%
Information	62	62	0.2%	65	65	-0.2%	69	68	-0.5%
Leisure & Hospitality	258	257	-0.3%	272	269	-0.9%	287	286	-0.3%
Professional & Business Svcs	345	341	-1.3%	395	392	-0.6%	443	450	1.4%
Trade & Transportation	549	544	-0.9%	574	560	-2.4%	601	587	-2.4%
Utilities	12	11	-2.6%	12	10	-11.0%	12	9	-19.0%
Other Services	123	124	1.0%	127	131	2.8%	134	139	3.2%
Wages (2000\$)									
Avg. Hourly Earnings, Manufacturing	17.40	17.25	-0.9%	18.60	18.25	-1.9%	19.97	19.34	-3.2%
Income (Millions, 2000\$)									
Personal Income	204179	201859	-1.1%	237509	232040	-2.3%	273089	265815	-2.7%
Disp. Personal Income	176196	174407	-1.0%	202987	199065	-1.9%	233759	228521	-2.2%
Population (Thousands)	5339	5339		5567	5567		5790	5790	

Source: Global Insight, Inc.

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

Scenario Descriptions

	Promoting Energy Supply Scenario	Restricting Energy Supply Scenario
Climate Change Policy Assumptions	No federal requirements for mandatory reduction in greenhouse gases (GHG)	McCain-Lieberman (S. 139) enacted for GHG emission reductions in 2010 and 2016
Mercury Policy Assumptions	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
SO₂, NO_x Assumptions	CAIR and all ongoing regulatory programs, including required future phases	CAIR and all ongoing regulatory programs, including required future phases
Natural Gas Supply Assumptions		
Offshore drilling	Restrictions/moratoria removed	No leasing of new areas
Federal Onshore	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]
Alaskan gas pipeline	Pipeline completed by 2018	No pipeline
Canadian gas	Imports ramp down to 1.0 tcf by 2015	Imports ramp down to zero by 2015
LNG	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.
Nuclear Power Assumption	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)
Renewable Portfolio Standards Assumption	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