

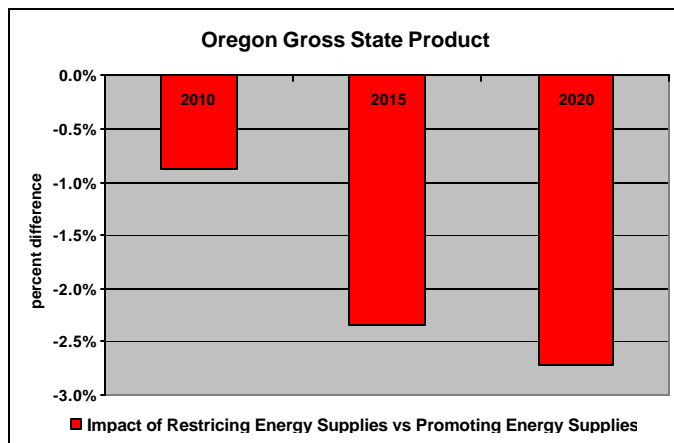
Promoting Energy Supply: Impact on Oregon's Economy

June 2005

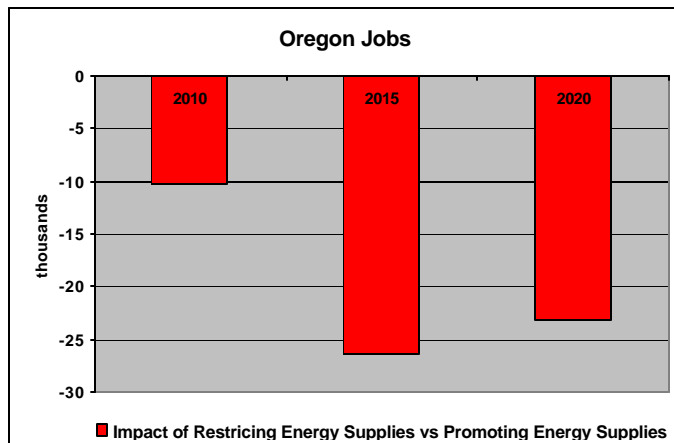
The energy outlook for the U.S. has changed substantially over the last few years as the outlook for natural gas supplies has undergone a complete about-face. There has been little growth in U.S. lower-48 supplies, and imports from Canada have leveled off and may have peaked. LNG is now expected to play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

- The Oregon economy would expand by 42% from 2010 to 2020 (at a rate of 3.5% per year) under policies that increase access to domestic energy resources.
- In contrast, policies that restrict energy supplies would reduce Oregon's Gross State Product by 2.7% in 2020.



- Jobs are a critical issue for Oregon's prosperity. Policies promoting energy supplies would result in 162,000 new jobs in the next decade.
- In contrast, under restrictive energy policies, Oregon would have 23,100 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.

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

Oregon'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. Oregon's economy would expand by 3.5% per year next decade, resulting in more and better paying jobs.

Stronger Economic Outlook for Oregon under the Promoting Energy Supply Scenario

| Oregon | 2010 | | | 2015 | | | 2020 | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | PES | RES | %diff. | PES | RES | %diff. | PES | RES | %diff. |
| Gross State Product (million 2000\$) | 155339 | 153972 | -0.9% | 186743 | 182366 | -2.3% | 219940 | 213965 | -2.7% |
| Manufacturing Output (mil. 2000\$) | 32057 | 31585 | -1.5% | 39515 | 37799 | -4.3% | 47351 | 44497 | -6.0% |
| Manufacturing, Durables | 27427 | 27035 | -1.4% | 34003 | 32535 | -4.3% | 40871 | 38419 | -6.0% |
| Manufacturing, Nondurables | 4630 | 4550 | -1.7% | 5512 | 5264 | -4.5% | 6480 | 6078 | -6.2% |
| Non-Manufacturing Output (mil. 2000\$) | 123281 | 122388 | -0.7% | 147228 | 144567 | -1.8% | 172589 | 169468 | -1.8% |
| Government | 15456 | 15494 | 0.2% | 16663 | 16683 | 0.1% | 17692 | 17797 | 0.6% |
| Agriculture, Forestry, & Fishing | 4867 | 4823 | -0.9% | 6437 | 6279 | -2.5% | 8329 | 8088 | -2.9% |
| Construction | 6437 | 6305 | -2.0% | 7758 | 7206 | -7.1% | 9257 | 8394 | -9.3% |
| Mining | 96 | 93 | -3.1% | 103 | 98 | -4.7% | 110 | 94 | -14.1% |
| Educational & Health Services | 11196 | 11175 | -0.2% | 13052 | 12949 | -0.8% | 15059 | 15003 | -0.4% |
| Financial Activities | 27761 | 27592 | -0.6% | 32752 | 32448 | -0.9% | 37660 | 37424 | -0.6% |
| Information | 6034 | 6040 | 0.1% | 7997 | 7949 | -0.6% | 10325 | 10208 | -1.1% |
| Leisure & Hospitality | 4811 | 4795 | -0.3% | 5660 | 5584 | -1.3% | 6516 | 6454 | -0.9% |
| Professional & Business Services | 16173 | 15959 | -1.3% | 20251 | 20056 | -1.0% | 24584 | 24787 | 0.8% |
| Trade & Transportation | 25766 | 25523 | -0.9% | 31446 | 30552 | -2.8% | 37567 | 36458 | -3.0% |
| Utilities | 2090 | 1970 | -5.8% | 2392 | 1981 | -17.2% | 2689 | 1884 | -29.9% |
| Other Services | 2595 | 2619 | 0.9% | 2716 | 2781 | 2.4% | 2803 | 2876 | 2.6% |
| Employment (thousands) | | | | | | | | | |
| Total Nonfarm | 1732 | 1722 | -0.6% | 1809 | 1782 | -1.5% | 1894 | 1871 | -1.2% |
| Manufacturing | | | | | | | | | |
| Manufacturing, Durables | 156 | 154 | -1.2% | 158 | 150 | -5.1% | 160 | 147 | -7.8% |
| Manufacturing, Nondurables | 52 | 52 | -0.7% | 52 | 51 | -1.6% | 53 | 53 | -0.9% |
| Non-Manufacturing | | | | | | | | | |
| Government | 285 | 286 | 0.3% | 297 | 298 | 0.5% | 309 | 313 | 1.2% |
| Construction, Natural Rsrcs, Mining | 100 | 98 | -2.0% | 109 | 101 | -6.7% | 121 | 111 | -8.8% |
| Educational & Health Svcs | 206 | 206 | -0.1% | 211 | 210 | -0.4% | 219 | 219 | 0.2% |
| Financial Activities | 104 | 103 | -0.6% | 107 | 106 | -0.5% | 109 | 109 | 0.0% |
| Information | 36 | 36 | 0.2% | 38 | 38 | -0.2% | 41 | 40 | -0.5% |
| Leisure & Hospitality | 170 | 170 | -0.3% | 168 | 167 | -0.9% | 167 | 166 | -0.3% |
| Professional & Business Svcs | 219 | 216 | -1.3% | 258 | 256 | -0.6% | 293 | 297 | 1.4% |
| Trade & Transportation | 336 | 333 | -0.9% | 342 | 334 | -2.4% | 351 | 343 | -2.4% |
| Utilities | 5 | 5 | -2.6% | 5 | 5 | -11.0% | 5 | 4 | -19.0% |
| Other Services | 62 | 63 | 1.0% | 64 | 66 | 2.8% | 66 | 68 | 3.2% |
| Wages (2000\$) | | | | | | | | | |
| Avg. Hourly Earnings, Manufacturing | 17.41 | 17.25 | -0.9% | 19.76 | 19.39 | -1.9% | 22.55 | 21.83 | -3.2% |
| Income (Millions, 2000\$) | | | | | | | | | |
| Personal Income | 120093 | 118728 | -1.1% | 140493 | 137258 | -2.3% | 162598 | 158267 | -2.7% |
| Disp. Personal Income | 104690 | 103627 | -1.0% | 121546 | 119198 | -1.9% | 140842 | 137686 | -2.2% |
| Population (Thousands) | 3857 | 3857 | | 4061 | 4061 | | 4265 | 4265 | |

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 |