



September 10, 2013

CHEMISTRY & SHALE GAS: FUELING A U.S. MANUFACTURING RENAISSANCE



PROMOTING POLICIES TO DRIVE A MANUFACTURING RENAISSANCE

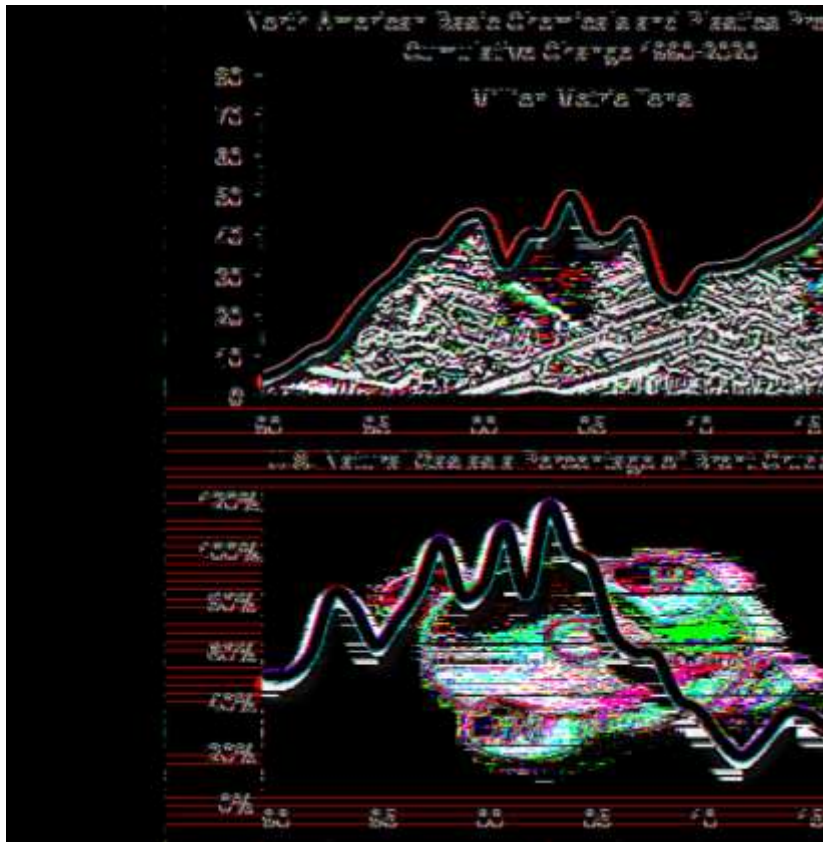
Shift in Relative Position of U.S. (2005-2012)
(Petrochemical Production Costs by Country/Region)



*Based on estimates from best available data

Shale Boom Driving New US Investment

North American Competitive Advantage Sustained through 2020



- ✓ Affordable, competitively priced natural gas is driving significant new capital investment in the US manufacturing sector
- ✓ Long-term, sustained opportunity in feedstock supply and cost
- ✓ Some of the new capacity is result of new foreign-direct investment in US



Data provided with
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IHS Global Insight

U.S. Shale Gas



U.S. has 30-year supply of natural gas that can be profitably produced at \$4.00 per million BTUs or less

America's chemical industry is benefiting from lower costs for energy and feedstock

IHS data

Chemical Investment



127 projects and \$85 billion in potential capital investment announced as of Sept. 19, 2013

...Up from 97 projects and \$72 billion as of March 2013

54% is by firms based outside the U.S.

ACC data

ETHYLENE CHAIN



ACC Study: Economic Contributions from Increased Chemical Industry Investment

537,000

Permanent NEW jobs by 2020 throughout the U.S. economy from higher chemical industry output

\$201 billion

Permanent NEW U.S. economic output by 2020 from \$67 billion in new chemical industry output

ACC Report: "Shale Gas, Competitiveness, and New U.S. Chemical Investment: An Analysis Based on Announced Projects," May 2013

PENNSYLVANIA

SHALE GAS CAN LEAD TO NEW INVESTMENT,
JOBS, WAGES AND TAX REVENUE



A **\$3.2 BILLION** investment in an ethylene production complex will generate **\$7.9 BILLION** in additional chemical industry output, bringing the state's industry revenues to more than **\$31 BILLION** and making it the country's **8th** largest chemical producing state



More than **17,000** permanent jobs will be created in the chemical industry and throughout the supply chain in everything from trade and craft jobs to highly-skilled knowledge workers



More than **\$1.2 BILLION** in wages will go into the pockets of Pennsylvania workers, generating more than **\$140 MILLION** in state tax revenue and more than **\$240 MILLION** in federal revenue.

Why Pennsylvania?

10th largest
chemical producing
state in the U.S.

- Considerable shale gas deposits
- Access to the Great Lakes
- Within 500 miles of U.S. industrial base
- Excellent universities
- Major rail systems



\$23 billion in revenue
and nearly **43,000**
Pennsylvania jobs



Policies Needed to Realize Shale Gas Potential

Key Policies

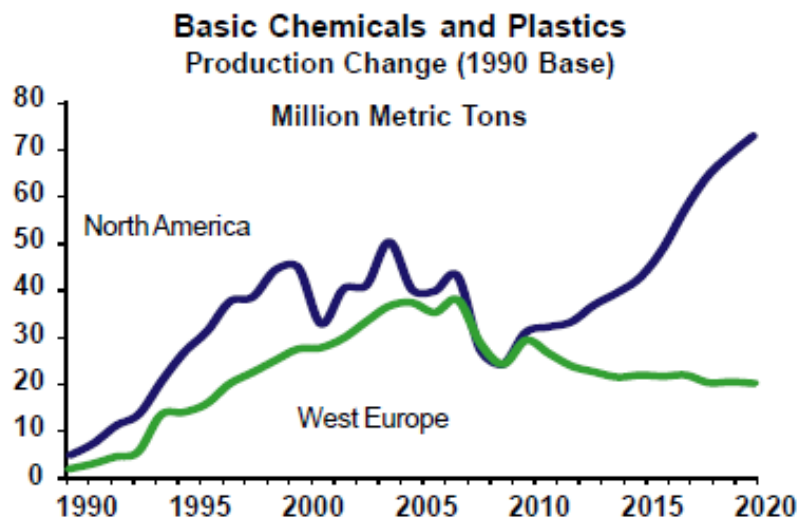
- **Access:** Allow access to natural gas reserves on government and private lands
- **Infrastructure:** Ensure reliable infrastructure to transport supplies
- **State Regulations:** Implement responsible state-based regulations that avoid undue restrictions on natural gas supplies
- **Tax Treatment:** Maintain accelerated depreciation in tax policy. Minimize cost and reduce complexity for businesses

- ✓ Restrictive policies and regulations would lead to less energy production
- ✓ U.S. would miss out on economic benefits from expanded supplies
- ✓ As many as 289,000 potential U.S. chemistry jobs would be lost
- ✓ \$46 billion in potential economic growth would be lost by 2025



IHS Report: "America's New Energy Future: The Unconventional Oil and Gas Revolution and the U.S. Economy – Volume 3: A Manufacturing Renaissance," Sept. 2013

U.S. Chemical Investment is Outpacing Other Regions



Data provided with permission from IHS

- ✓ U.S. chemical industry is poised to capture market share from around the world
- ✓ North American chemicals and plastics production will double by 2020 while Western Europe's falls by 1/3
- ✓ No other region has this long-term advantage in natural gas and feedstock supplies



Fueling Export Growth

American Chemistry

- \$188 billion in annual exports
- 12% of all U.S. exports
- 200,000 chemistry jobs are export dependent

58 billion in additional jobs and export growth potential



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