April 6, 2015

SHALE GAS AND NEW U.S. CHEMICAL INDUSTRY INVESTMENT: $138 BILLION AND COUNTING
U.S. Chemical Industry Global Cost Advantage


*Based on estimates from best available data
Chemical Investment

226 projects and $138 billion in potential capital investment announced as of March 2015

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

61% is by firms based outside the U.S.  
ACC data

U.S. Shale Gas

30-year supply that can be profitably produced at $4.00 per million BTUs or less

U.S. chemical industry benefits from lower costs for energy and feedstock

IHS data
Natural gas liquids, especially ethane, are primary feedstock for chemical-making in the U.S.

Companies overseas mostly use an oil-based feedstock

Due to vast new NGL supplies, U.S. ethane feedstock is selling at historically low prices

Huge NGL growth predicted; sustained opportunity for U.S. chemical industry
ETHYLENE CHAIN

Natural Gas

Ethane

Cracker

Intermediate Products
- PVC
- Vinyl Chloride
- Ethylene Glycol
- Styrene
- Polystyrene

Pool Liners
Window Siding
Trash Bags
Sealants
Carpet Backing
Insulation
Detergent
Flooring
Pipes
Food Packaging
Bottles
Cups
Housewares
Crates
Footwear
Clothes
Diapers
Stockings
Toys
Textiles
Tires
Sealants
Paint
Antifreeze
Adhesives
Coatings
Films
Paper Coatings
Models
Instrument Lenses

American Chemistry Council
Oil-to-Gas Ratio: A Proxy for U.S. Petrochemicals Competitiveness

When the ratio is above 7, U.S. competitiveness is enhanced.

Oil prices falling since June 2014, creating moderate uncertainty about future

Current ratio remains very favorable for U.S. competitiveness

Growth likely to slow but be offset by stimulative consumer effect

Source: EIA, ICE, NYMEX
Announced Chemical Industry Investments Cumulative Totals

Note: The data is based on publicly available information, which is believed to be accurate, but has not been independently verified by ACC.
• By 2023, additional output from $138 billion in capital investment generates $93 billion per year in new chemical industry shipments
• This is an ongoing, permanent upward shift in shipments
Economic Contributions From Increased Chemical Industry Investment

655,000

Permanent NEW jobs by 2023 throughout the U.S. economy from $93 billion in new chemical industry output

$266 billion

Permanent NEW U.S. economic output by 2023 from $93 billion in new chemical industry output

Based on $138 billion in potential U.S. chemical investment announced as of March 2015
Unconventional Energy Benefits the U.S.

- **Household income:** $3,500 more in 2025 due to unconventional energy
- **Jobs:** Nearly 4 million jobs supported in 2025, up from 2.1 million in 2013
- **U.S. GDP:** Grows 3.2% by 2025, equal to $500-600 billion
- **IHS report** measured economic benefits of unconventional oil and natural gas activity across value chain

*Source: IHS Model of the US Economy*

“When people choose whether to invest in Europe or the US, what they think about most is the cost of energy. The loss of competitiveness is frightening.”
Antonio Tajani, European Industry Commissioner

“I think we’d be making a big mistake if we didn’t think hard about how to encourage [natural gas production] right here in the UK. We’re seeing businesses that have previously gone off to Mexico and elsewhere come back to the U.S.”
- David Cameron, British Prime Minister

“Natural gas prices in Europe are three times as high as in America, and electricity prices are twice as high...It’s very hard to imagine how Europe can recover.”
- Paolo Scaroni, CEO, Eni

“Chemicals depend upon competitive energy and feedstock costs...It could well be another European dinosaur.”
- Jim Ratcliffe, Chairman, INEOS

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U.S. Chemical Investment is Outpacing Other Regions

- U.S. chemical industry is capturing 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

Data provided with permission from IHS
Rapid Growth in Net Exports of Key Shale Gas Advantaged Chemicals

Nearly $30 Billion

Projected increase in Net Exports of U.S. chemicals (2014-2030)

Net exports of shale gas advantaged chemicals will grow due to increased chemical industry investment in the U.S. As of March 2015, $138 billion in potential U.S. chemical investment has been announced.
State of the Union: President Obama pledged to facilitate permitting of new manufacturing plants.

New legislative opportunities to enact “all of the above” energy policy.

Natural gas, energy efficiency, & energy recovery are key parts of any national strategy.
Policies Needed to Realize Potential

**Access & Infrastructure:** Allow access to natural gas reserves on government and private lands. Ensure reliable infrastructure to transport supplies.

**State Regulations:** Implement responsible state-based regulations that avoid undue restrictions on natural gas production.

**Permitting:** Ensure timely approval of permits for manufacturing projects and investments such as new chemical plants and expansions.

**Tax Treatment:** Maintain accelerated depreciation in tax policy. Minimize cost and reduce complexity for businesses.