Impact of Shale on Downstream Demand and the Manufacturing Renaissance

Melissa Hockstad, AFPM
Natural Gas Policy Institute
September 9, 2015
Who We Are

• Founded in 1902
• Represent over 95% of U.S. refining capacity and petrochemical manufacturing
• More than 400 member companies
  – Refineries
  – Petchem manufacturers
  – Service providers
What We Do

- AFPM represents members in the “downstream” section of the supply chain.
What are Petrochemicals?

• Set of very specific chemical compounds
• Generally speaking a petrochemical is a chemical derived from oil or natural gas
  – Vast majority of petrochemicals are derived from oil or natural gas
  – U.S. mostly uses nat gas
Petrochemicals 101

- Base petrochemicals
  - Ethylene
  - Propylene
  - Butadiene
  - Benzene
  - Toluene
  - Xylene

- Let’s focus on ethylene
How to Make a Petrochemical – Ethylene Example

Graphic courtesy of Shell Chemical
Where are Petrochemicals Used?

• Housing and construction
• Medical applications
• Vehicles
• Electronics
• Packaging
• Military
• Clothing
• Much, much more
Impact of Shale Revolution

- U.S. chemical industry is the largest industrial consumer of nat gas
- New economics = U.S. competitive advantage
  - 2008 – nat gas was selling for ~$12.50/MM Btus
  - Today – less than $3/MM Btus
- Dramatic reversal – U.S. now one of the most affordable for chemical production
Impact on U.S. Chemical Industry

• 238 projects announced
• $145B in new capital investment
• 383,000 direct and indirect jobs by 2023
• More than half of the investment is by firms based outside the U.S.

Source: American Chemistry Council
American Shale & Manufacturing Partnership

- Multi-stakeholder initiative
- Focused on shale development and its impact on the supply chain for U.S. manufacturing
- 14 members
  - Academia
  - Associations
  - Non-governmental organizations
  - Unions
Manufacturing Renaissance Series

- January 2013 – launched series at Carnegie Mellon University
- Events held in PA, OH, TX, LA and CO
- Over 425 participants
- What needs to be done to further advance American manufacturing?
Final Report

• “Ideas to Empower America’s Emerging Shale-Based Manufacturing Renaissance”

• Focused on 5 core areas:
  – Workforce development
  – Environment
  – Infrastructure
  – Research and innovation
  – Federal and state policies
THIS ROCK IS CHANGING THE WORLD

SHALE OIL & GAS