



Shale Gas Revolution



Chemical Industry Revolution

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OPEC Energy Embargo



Shale Gas Revolution

US Natural Gas Price

\$ per million Btu, Spot Price Henry Hub



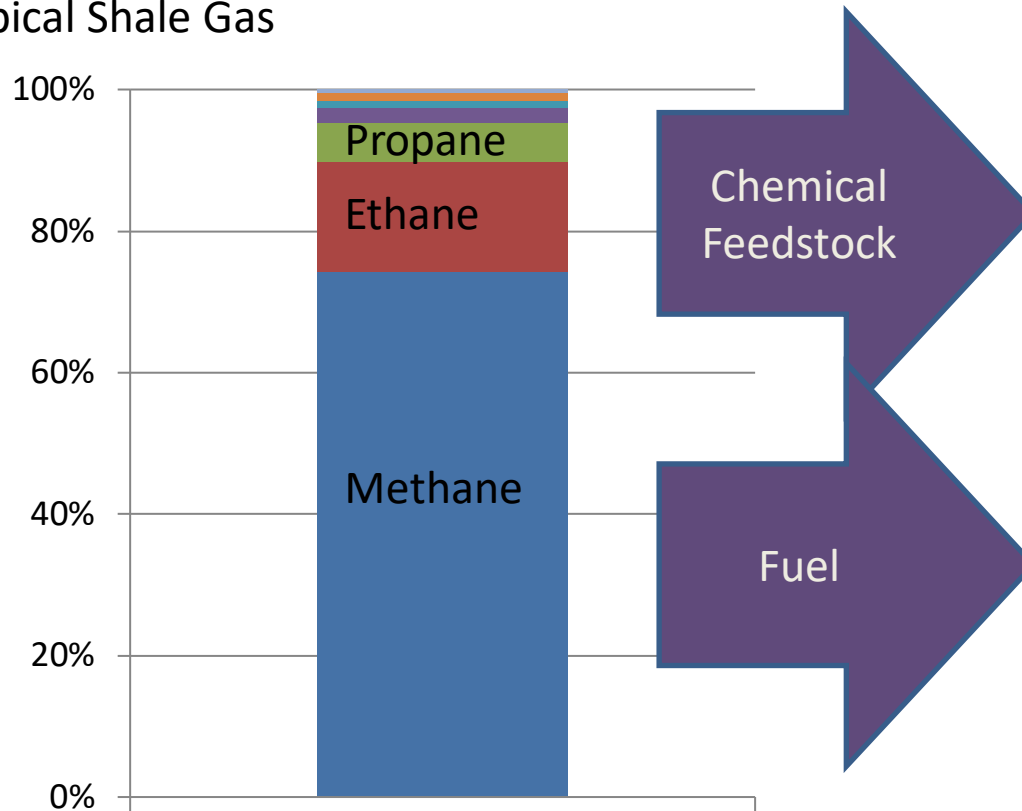
Sources of data: EIA, market data

WOLFSTREET.com

Shale Gas Revolution

Chemical Industry Revolution

Typical Shale Gas



Source: Typical Shale Gas: Western Marcellus Shale Gas: Chesapeake Investor Presentation 2011

Chemical Industry Invests



>50% of all manufacturing investment

>70% investment by foreign companies

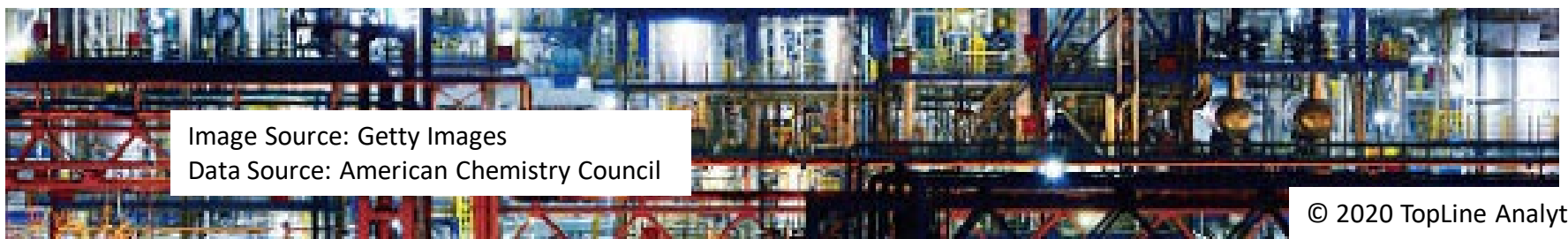


Image Source: Getty Images
Data Source: American Chemistry Council



Chemicals Replace other Materials

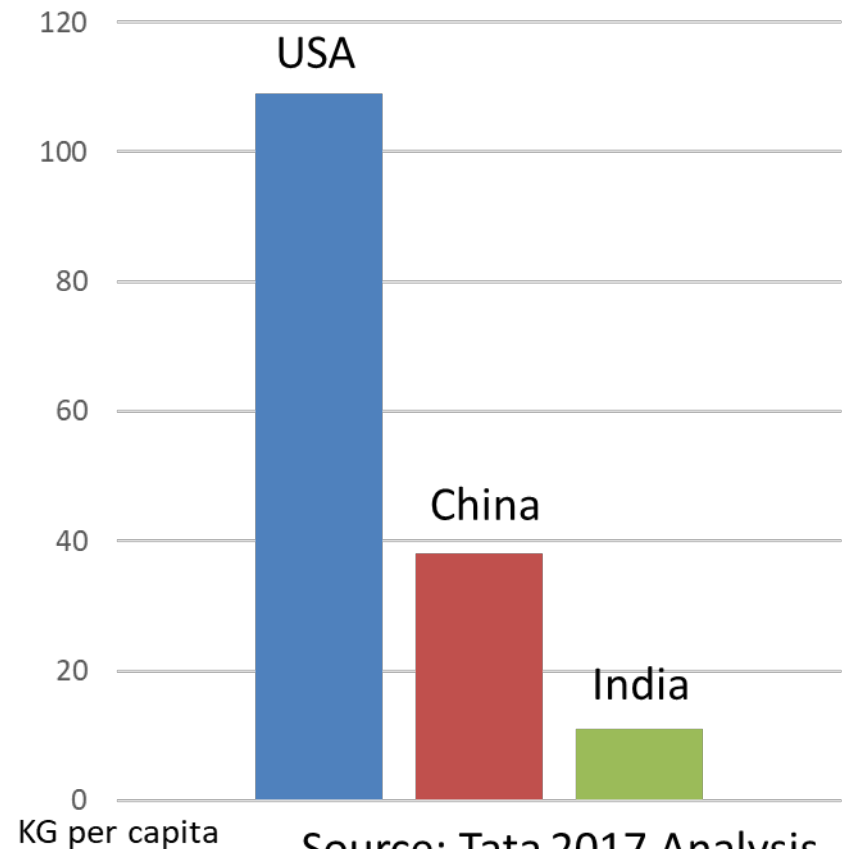
- Automobiles assembled with adhesives instead of welding
- Airplanes made primarily out of plastic instead of aluminum
- Food packaged in plastic instead of glass, paper, or metal
- Rot impervious decks and fencing, plastic instead of wood
- Large screen TVs with no glass and very limited metal

>98%

Developing World Middle Class



Plastics Consumption



Front Line in COVID-19 Defense is Chemicals

- Soap, hand sanitizer & disinfectants
- Medical staff protective: suits, masks, face shields, gloves
- Ventilator: masks, hoses, straps and most of the ventilator
- Test kits, vaccine, and drugs
- Syringes, IV bags and IV hoses



COVID-19 Single Use Plastic Bags

Critical in the medical setting:

- Protect sanitized equipment
- Contain contaminated material



Required to protect workers:

- Supermarkets ban reusable bags
- Garbage pickup plastic bag only



COVID-19 Mainstreams 3D Printing





COVID-19 Mainstreams 3D Printing





TopLine Analytics

Deep insight on downstream Shale Gas
revolution impacts on chemicals and plastics

Allowing you to focus on once in a
generation opportunities in confidence

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