Shale Gas and Oil
Billy B. Bardin, The Dow Chemical Company
Christopher W. Jones, Georgia Tech

• Fossil resources provide:

(i) Energy

(i) Raw materials for products – chemicals, plastics, composites, insulation, pharmaceuticals – that drive the economy and provide quality of life

• We now have new fossil resources

Source: IPCC, 2007
US Chemical Industry in 1995

- Jones and Bardin graduate with BS degrees in chemical engineering
- Prevailing wisdom – if you want to design and build a new chemical facility, must travel to Asia or Middle East
- No new infrastructure in the US since the 1970s
- “You will see no significant new capital projects in the US in your lifetime”
US Chemical Industry Today

- Hydraulic fracturing now yielding a boom in domestic natural gas, natural gas liquids, and shale oil supply
- Significant new manufacturing projects being built along Gulf coast, the North East, Upper plains states / Canadian border region
- More than $100 billion in capital investment, changing the balance of trade, and US energy independence
- Major impact on energy production as well – massive switch from coal-based to natural gas based electricity
- Game changer in our lifetime – immediate impact
Today’s Speakers

• Stephen Ingram, Halliburton
  - the nature of the shale gas resource

• Kelvin Gregory, Carnegie Mellon University
  - water management and sustainability

• Eric Stangland, The Dow Chemical Company
  - conversion of shale gas and shale gas liquids to value-added products