

***Tennessee Climate Change Dialogue
August 13, 2008***

Industrial Gasification:

Key to Our Future?



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Industrial Gasification
Eastman Chemical Company***

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**Chemicals from
Wood (1920)**

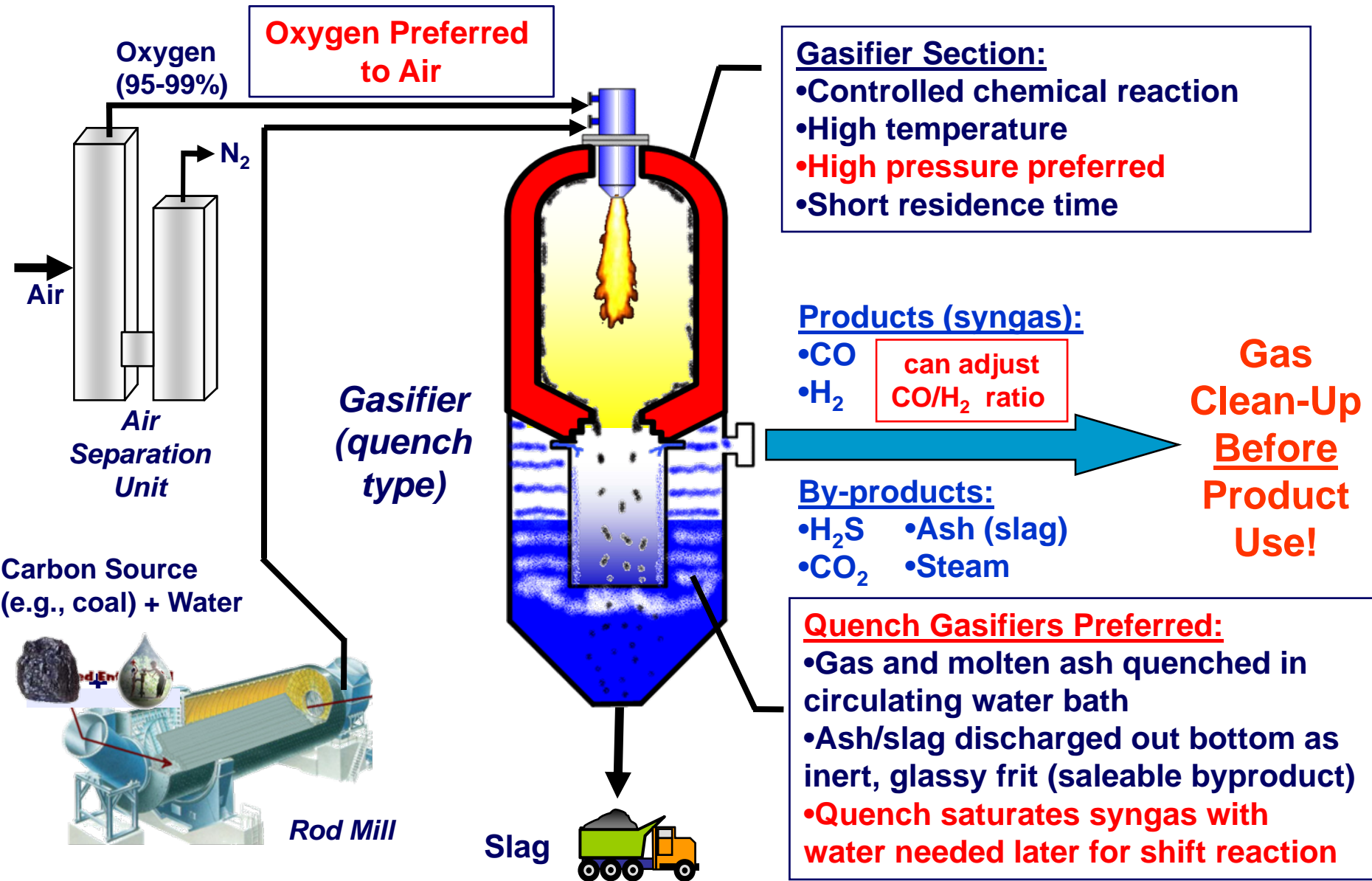


A History Based on Use of Domestic Alternative Feedstocks

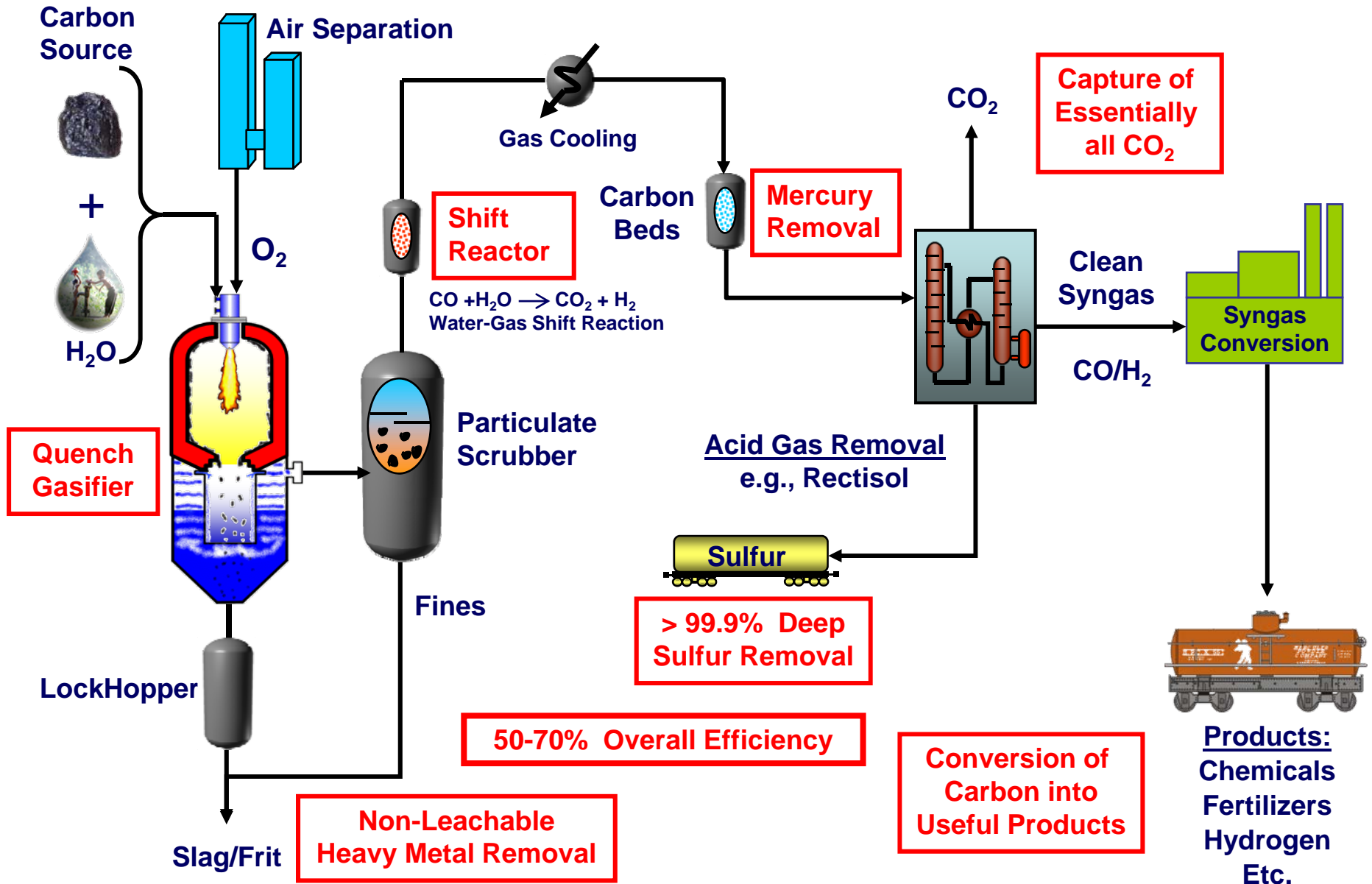


Chemicals from Coal (1983)

Industrial Gasification (IG) Basics



Industrial Gasification (IG) - Inherently Efficient and Clean



Eastman's Coal Gasification Facility – Kingsport, TN

What IG Looks Like



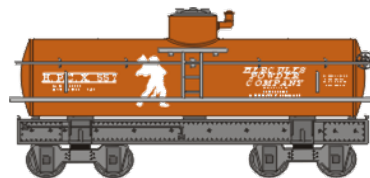
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Eastman Gasification: Products You Use Everyday

It's likely you have used a product based on coal gasification from Eastman's facility.



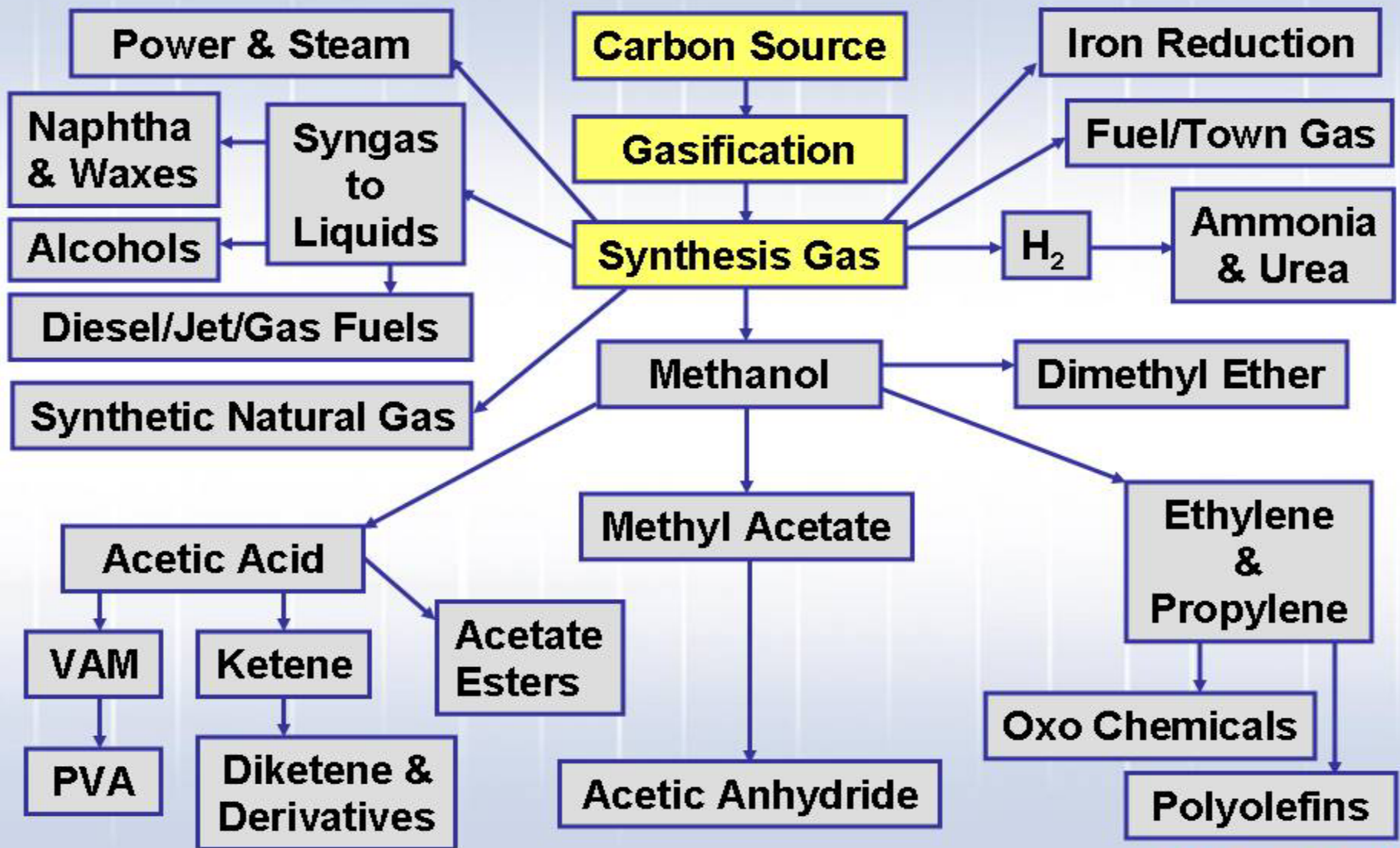
Coal



Acetic Anhydride
Acetic Acid
Methanol
Methyl Acetate

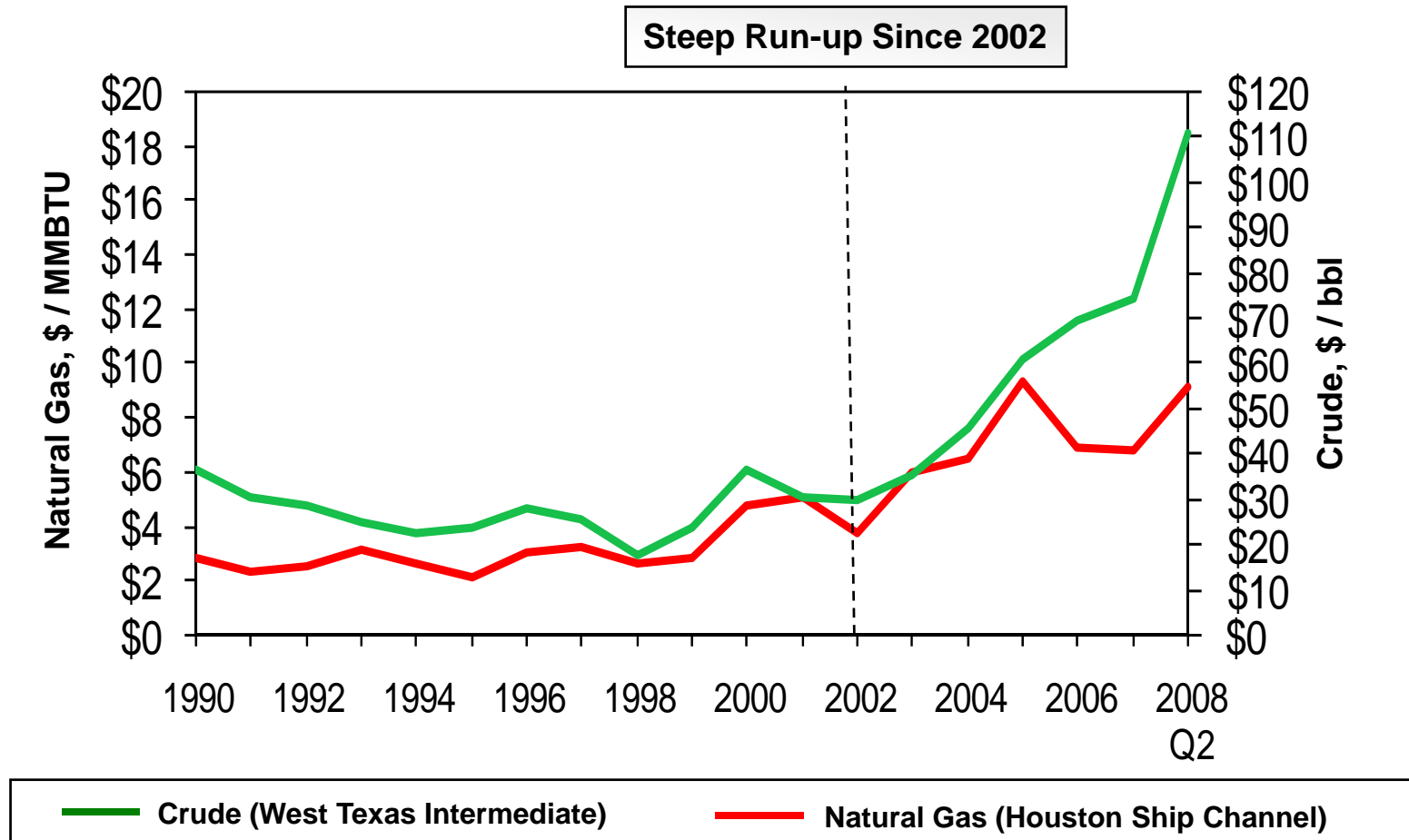


Gasification Can Produce Almost Any Product Made from Oil or Natural Gas



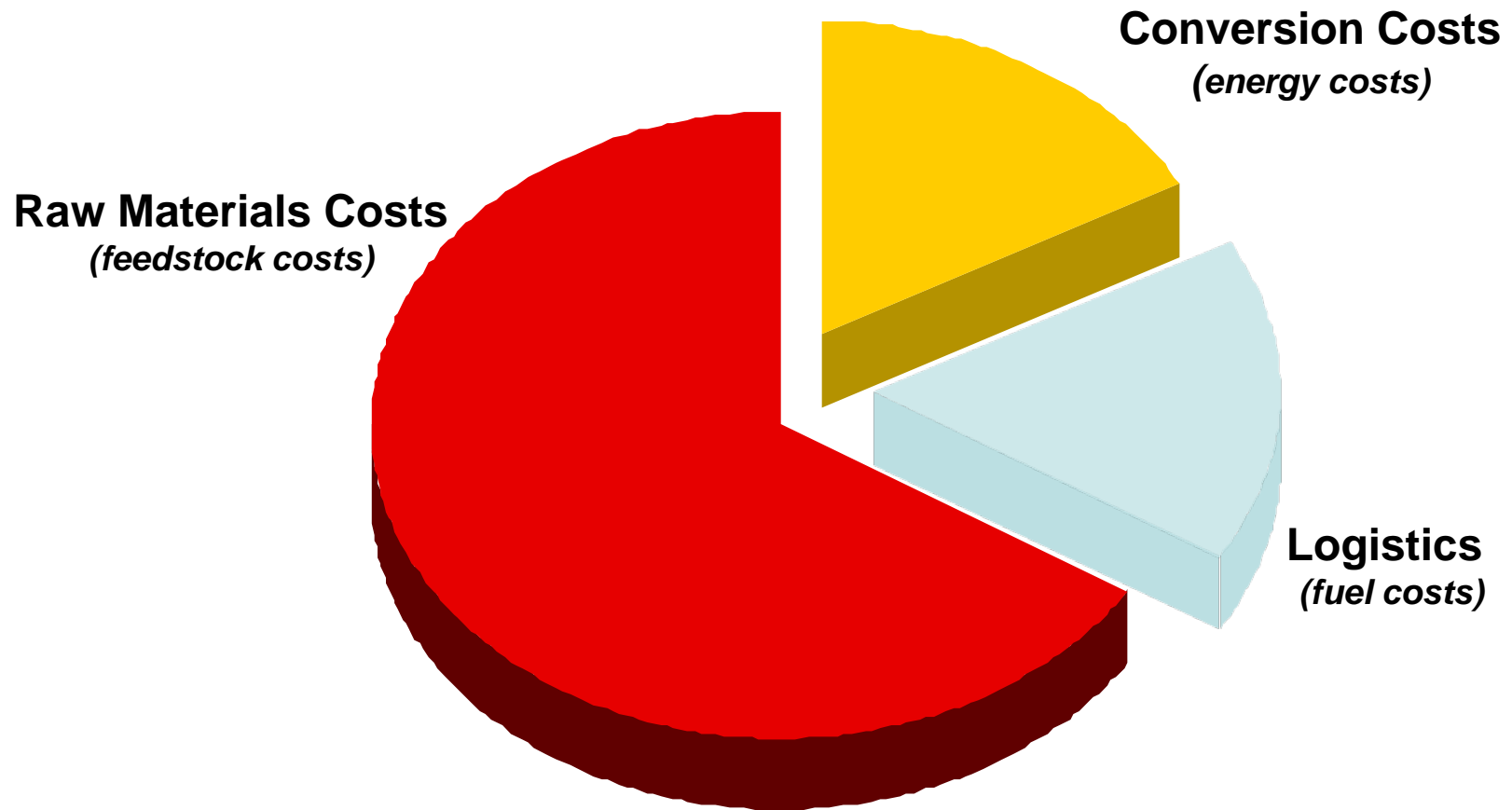
Why is Eastman Pursuing New Industrial Gasification Projects?

Rising Costs of Conventional Raw Materials Have Negatively Impacted U.S. Industry



Source: Historical Data, constant 2008 dollars

High Energy/Feedstock Prices Affect All Elements of Commodity Industrial Costs



U.S. Industry Quandary

In the face of rapidly rising materials and energy costs, U. S. industries face tough choices. As a result, some industry players have elected to:

- Close shop
- Move out
- Transform

Closing Shop: Ammonia & Methanol Example

(Since 2003 – Approximately 20 Ammonia and 6 Methanol Plants Closed)

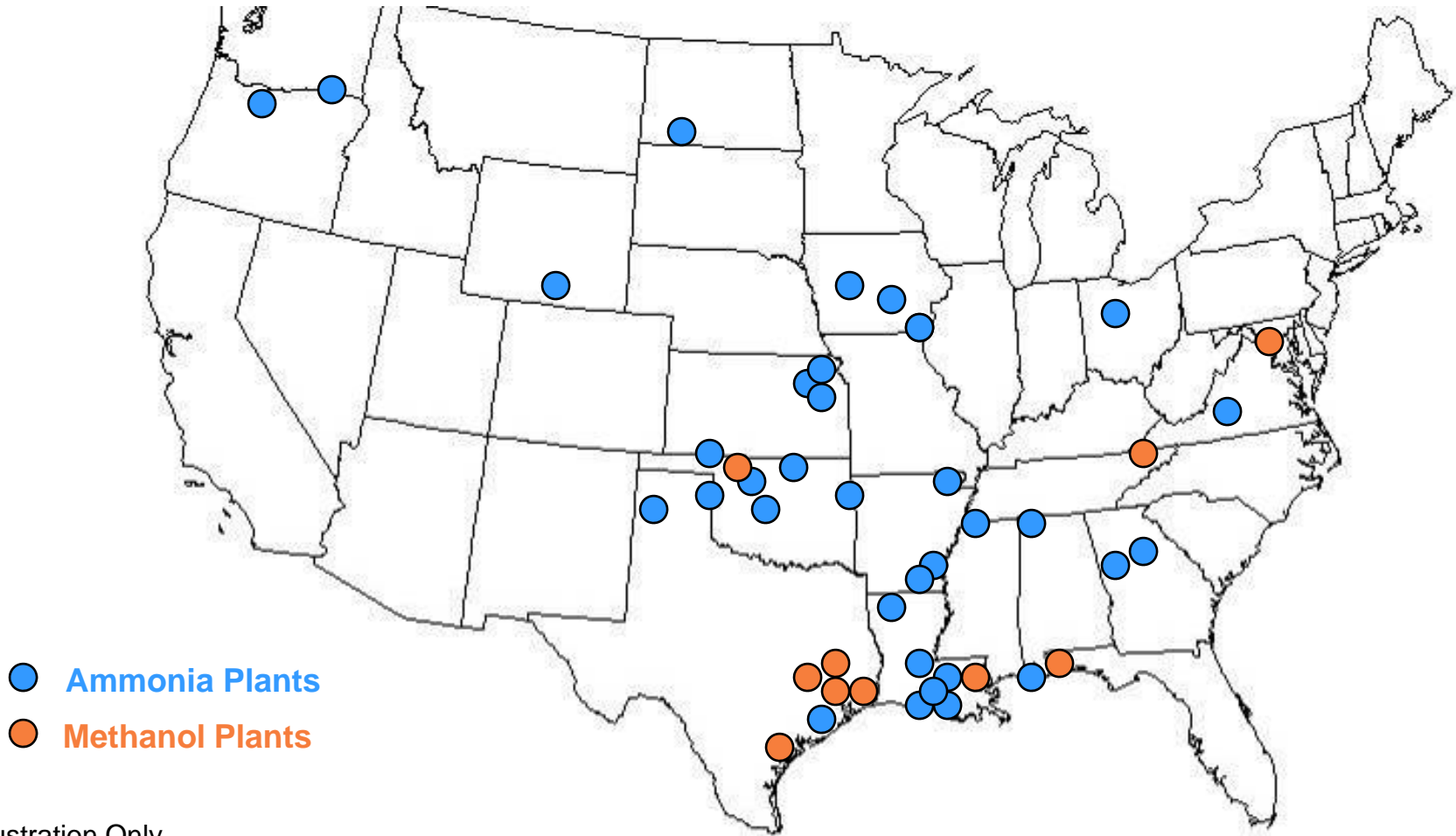


Illustration Only

Sources: U.S. Geological Survey, Mineral Commodities Summaries, 2007
Chemical Economics Handbook - SRI Consulting, 2007

Moving Out: The Exodus



Source: ICIS Chemical Business

Announced Chemical Plants > \$1 B in Size

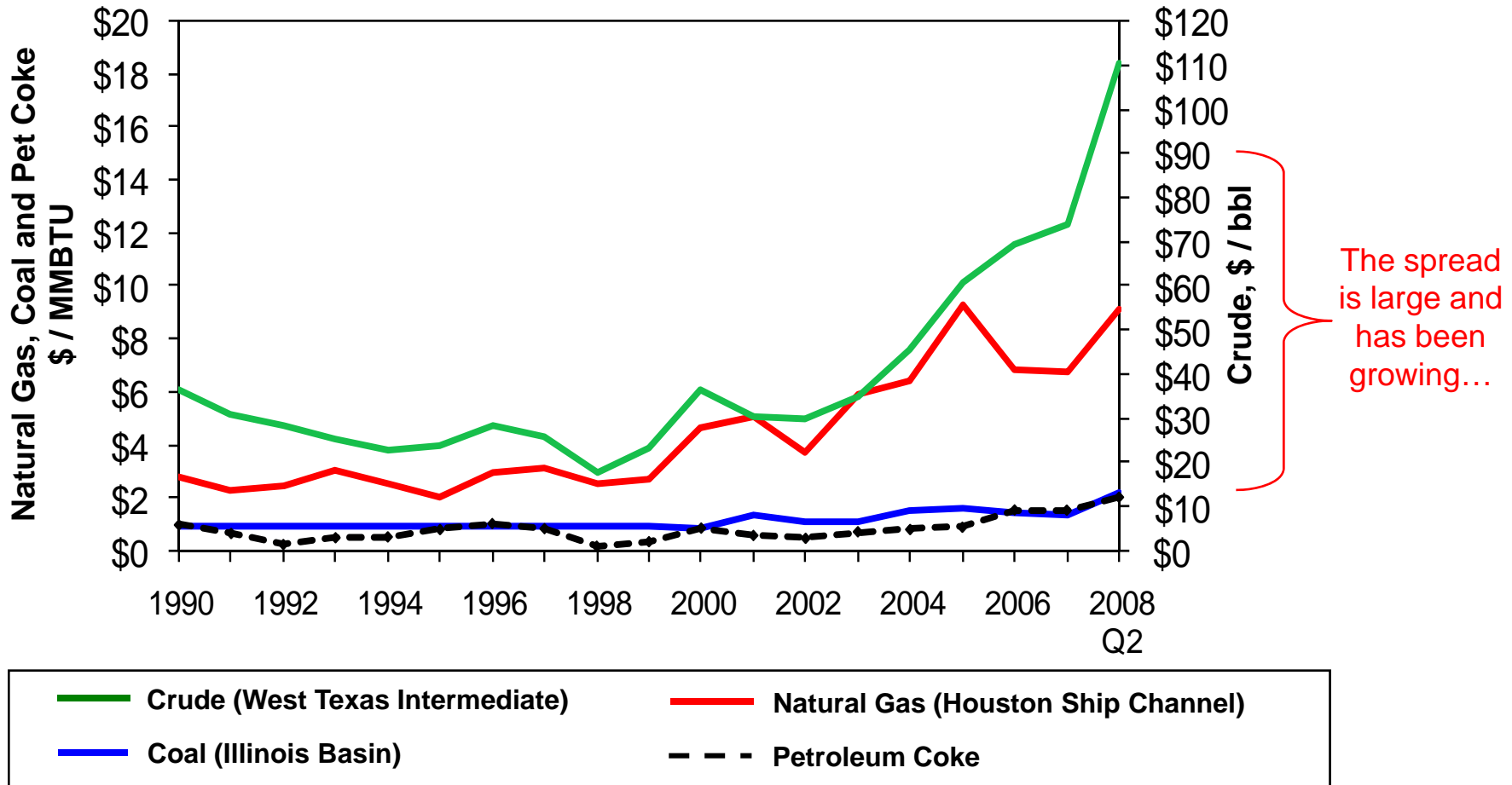
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Eastman's Answer

- **Transform the Company through Industrial Gasification of Alternative Domestic Materials**
 - Coal
 - Petcoke
 - Biomass
 - Secondary Recycled Materials

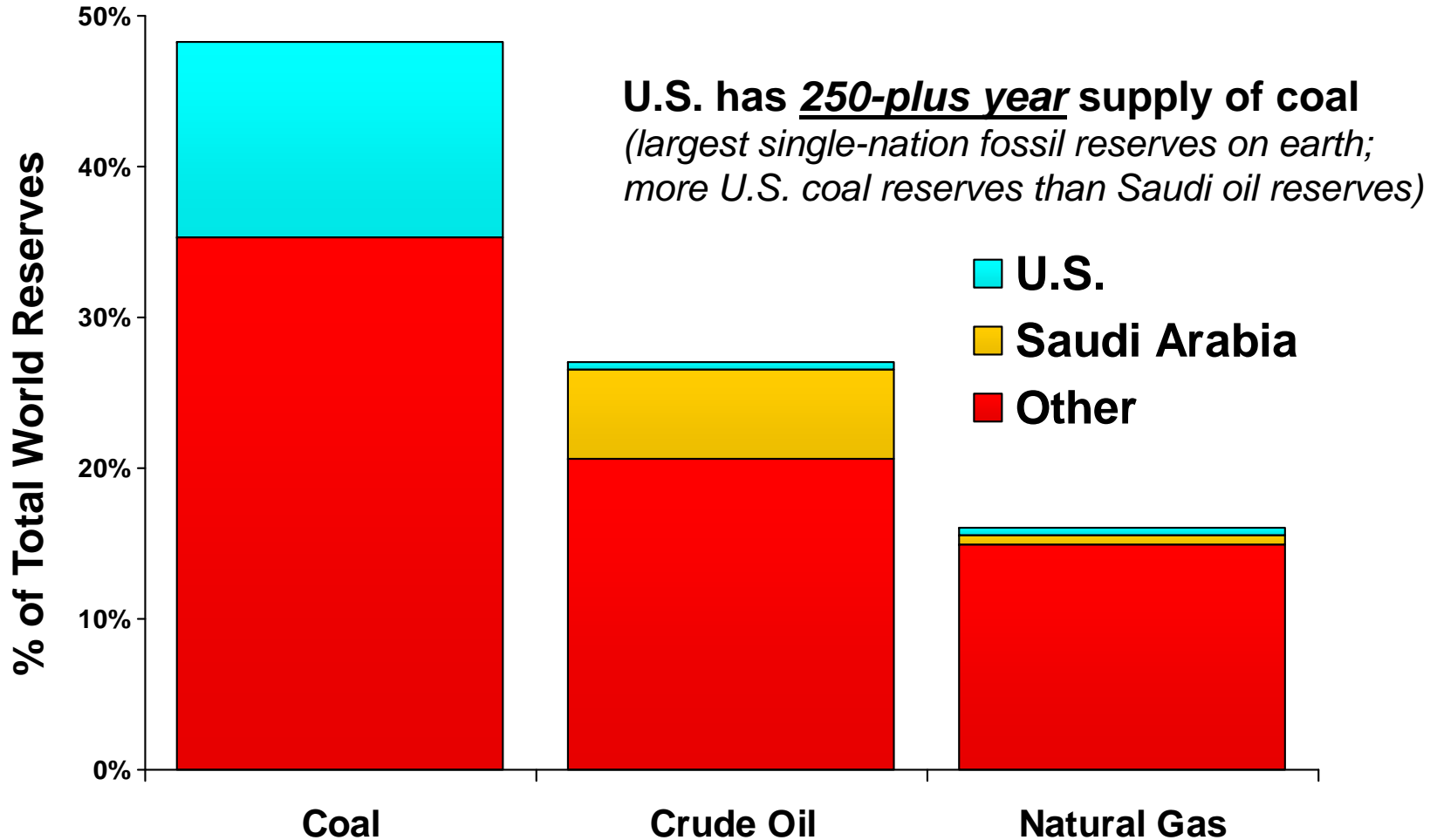
Why Industrial Gasification (IG)?

Coal and Petcoke Prices vs. Oil and NG



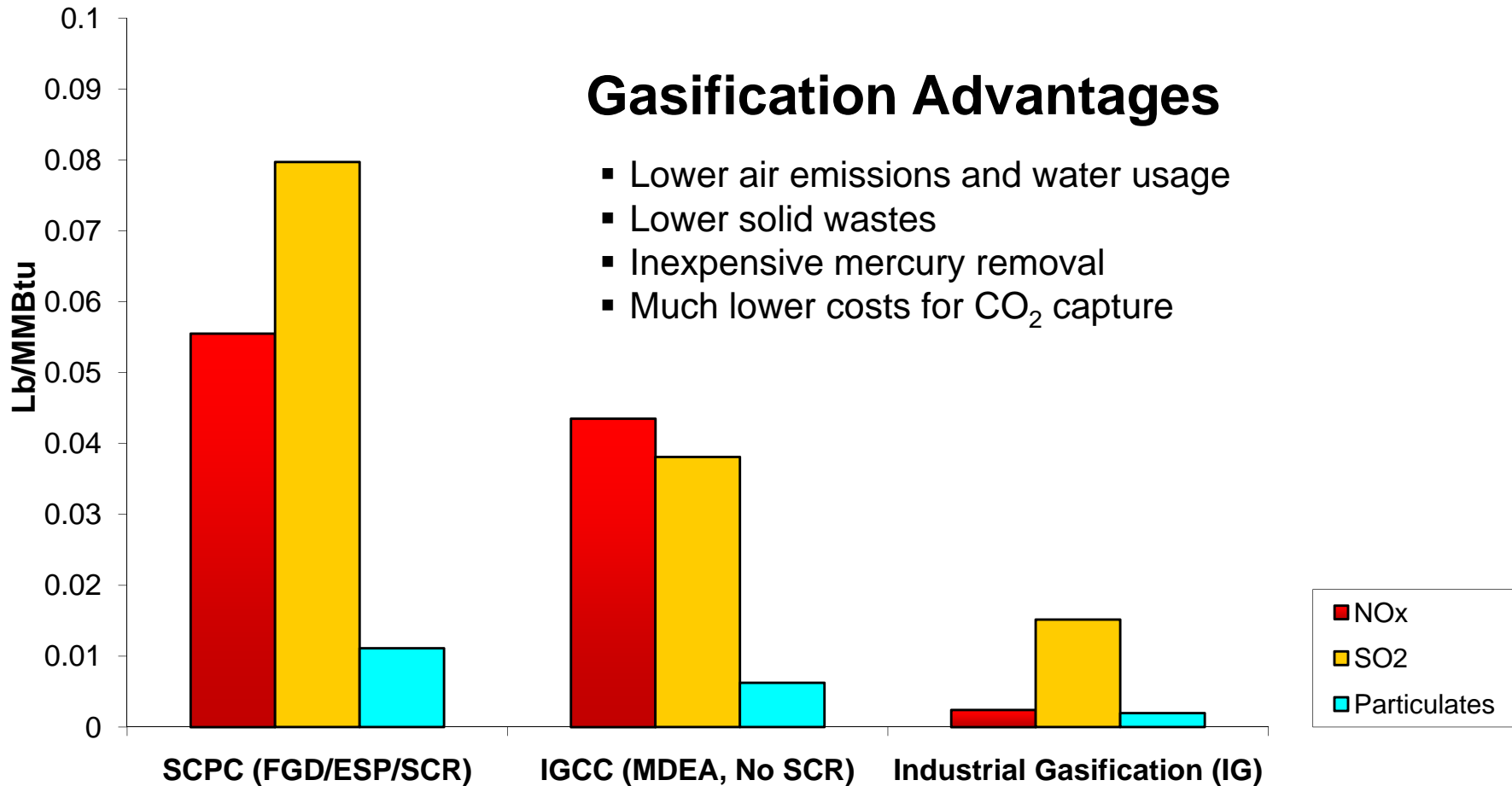
Source: Historical Data, constant 2008 dollars

U.S. has more than 25% of the World's Coal Reserves



Sources: International Energy Agency (IEA) and Dept. of Energy , Energy Information Administration (EIA)

IG is an Environmentally Friendly Choice

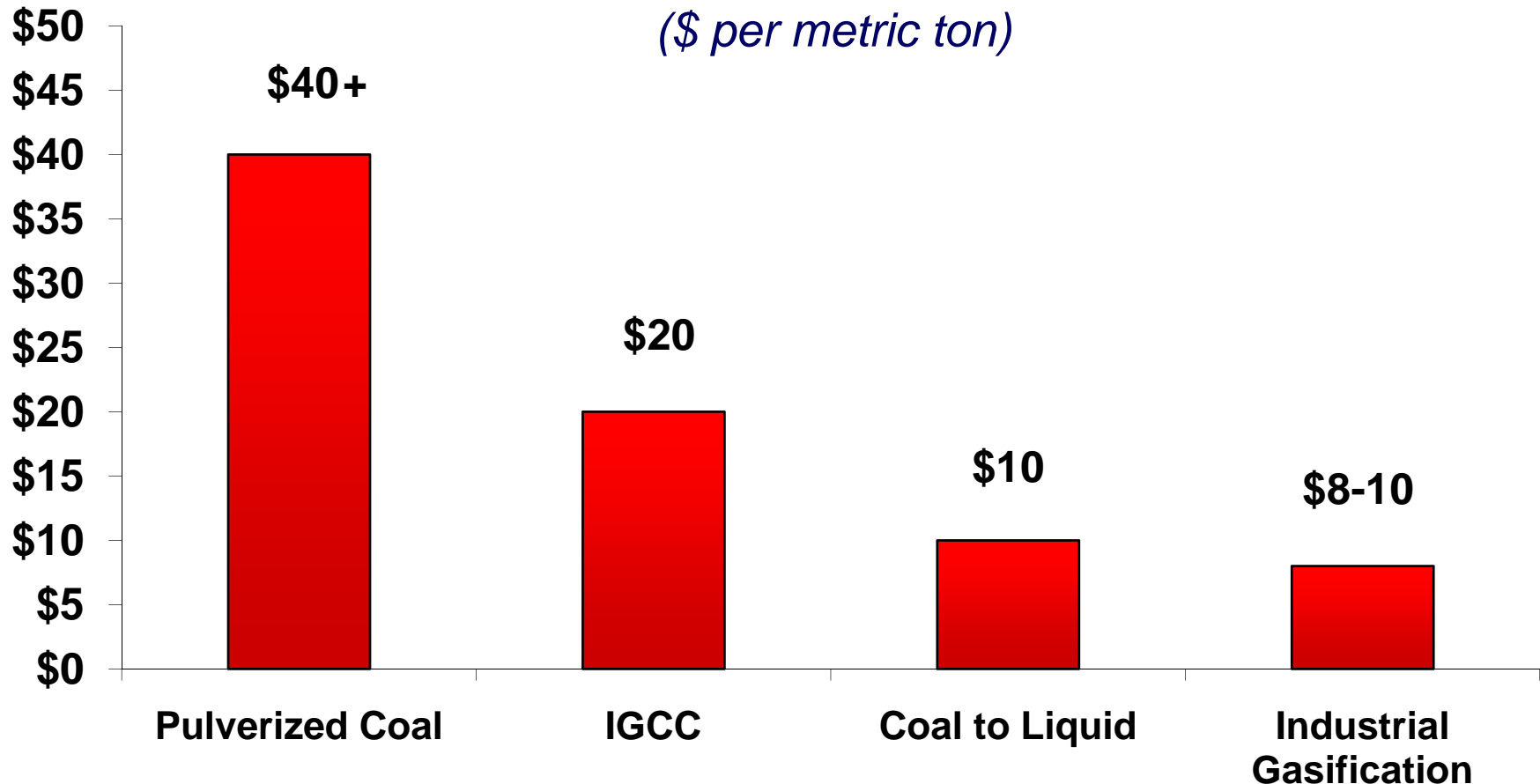


SCPC and IGCC Source: EPA Report – "Environmental Footprints and Costs of Coal-Based IGCC and PC Technologies", July 2006

IG is Lowest Cost Route to Implement CCS* from Coal

Carbon Dioxide Capture and Compression Costs

(\$ per metric ton)

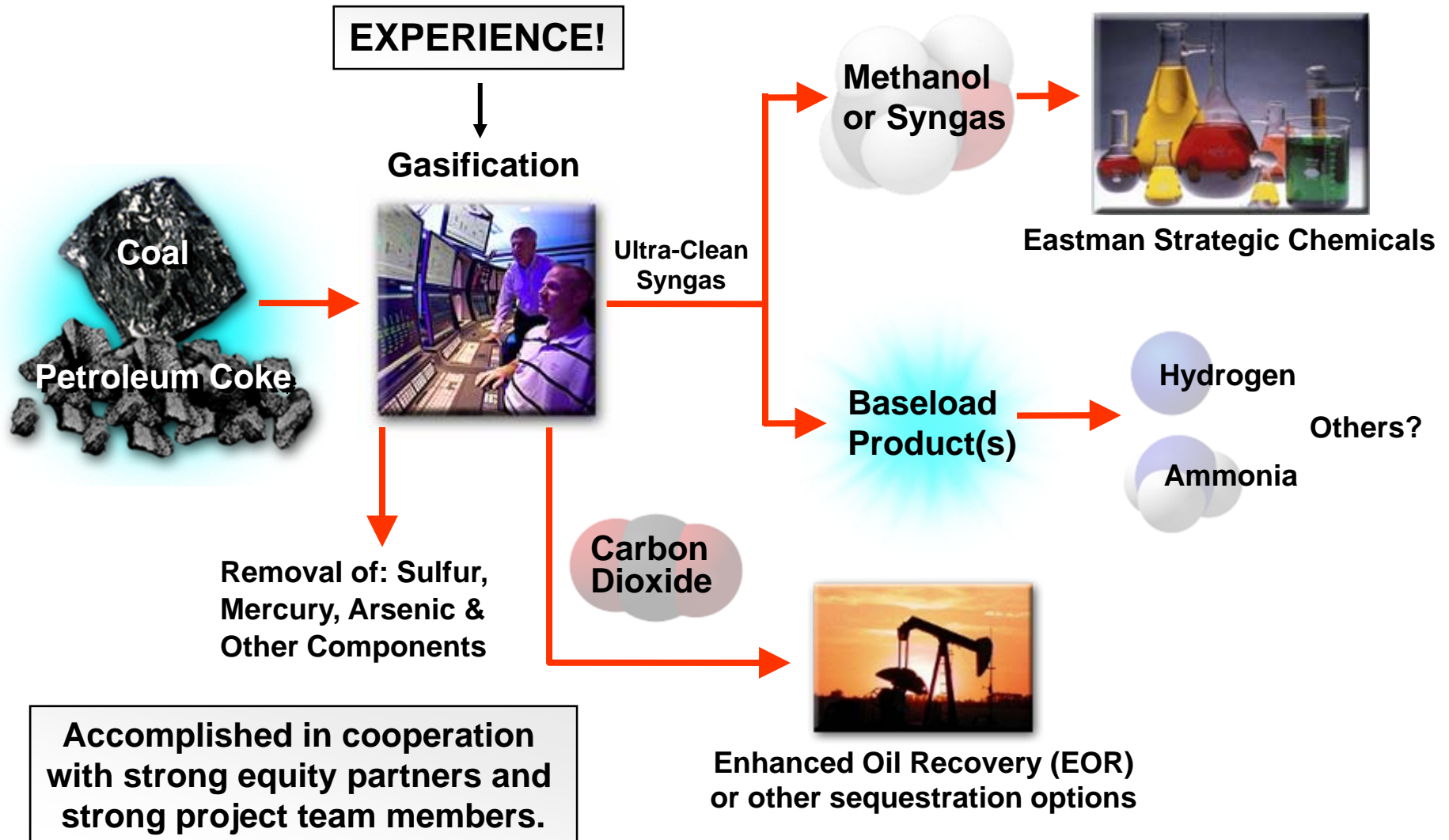


Source: MIT's *The Future of Coal*, 2007

Note: Does not include pipeline transportation and injection costs.

* CCS = Carbon Capture & Storage (or Sequestration)

Eastman's Strategy for Growth:



Eastman Gasification Projects

- Kingsport, TN – 1st commercial coal gasification project in the U.S. (25th anniversary on June 19, 2008); syngas to chemicals (methanol and acetyls)
- Longview, TX – Two natural gas (NG) gasification units built to produce syngas for chemicals production
- TX Energy, LLC (Beaumont, TX) - World-scale project to produce hydrogen, ammonia, and methanol from petcoke or coal; Eastman 100% equity and operator and syngas off-taker; CO₂ captured and used for enhanced oil recovery (EOR); expected commercialization 2011-2012; now in front-end engineering and design (FEED)
- Future Growth Projects?

Benefits of Eastman IG Growth Projects

- A new paradigm that enables retention and growth of U.S. industry and jobs.
- A model for producing hydrogen on a large scale (advances hydrogen-based economy).
- A leading edge model for advanced clean coal power generation - using gasification to produce hydrogen, coupled with carbon capture and storage.
- A model for "green" refineries - utilizing secondary materials (e.g., petcoke) to produce clean products with minimal carbon footprint.
- World-scale demonstration of carbon capture and storage at the lowest incremental added cost.
- Significant reduction of energy imports, thus enhancing energy security, without significant negative impacts on the environment (e.g., no drilling for this extra oil).

Industrial Gasification: Key to Our Future?



We Believe So.

Eastman – Making It Happen.

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