

A photograph of a large industrial gasification plant at night. The scene is filled with complex piping, scaffolding, and large cylindrical vessels. Warm lights illuminate the structures against a dark blue twilight sky. A semi-transparent dark grey banner is overlaid across the middle of the image, containing the title text.

E-Gas™ Technology for Coal Gasification

*McIlvaine Company Webinar
June 5, 2008*

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A photograph of an industrial facility, likely a refinery or chemical plant, at dusk. The scene is dominated by large, cylindrical storage tanks and a complex network of pipes, ladders, and structural steel. The sky is a deep blue, and the facility is illuminated by numerous warm, yellow lights, creating a strong contrast with the dark background. The overall atmosphere is industrial and somewhat somber.

Coal Moratorium

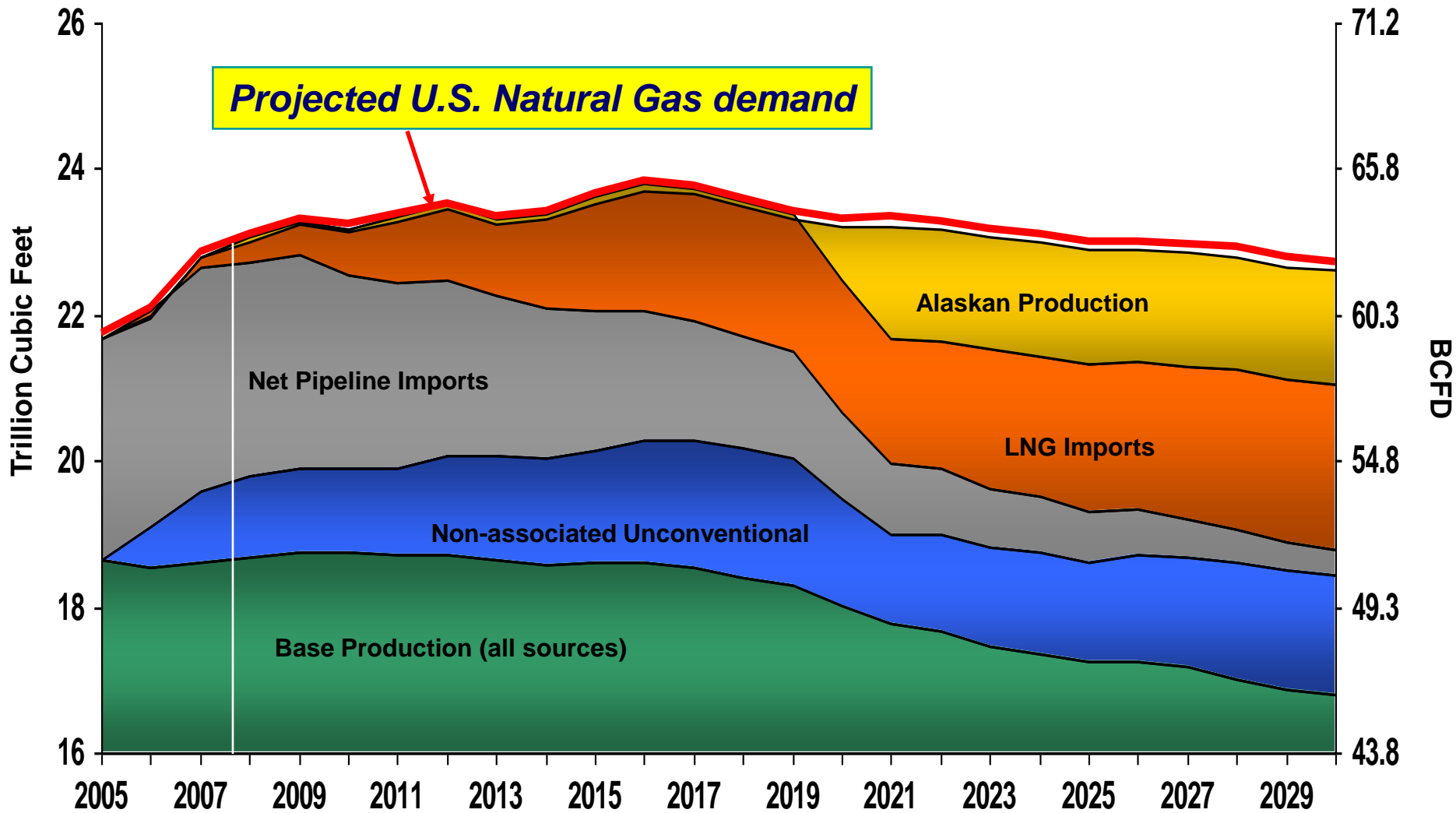
**Increasing NGO Pressure on Coal Plant Siting
Delays & Long Timelines
Escalating Costs
Climate Change Uncertainty**

Natural Gas is the Path of Least Resistance

Dash-To-Gas

**Renewables Insufficient to Meet Demand
NGCC Easier to Site, Faster to Build
Pressure on NG Supply**

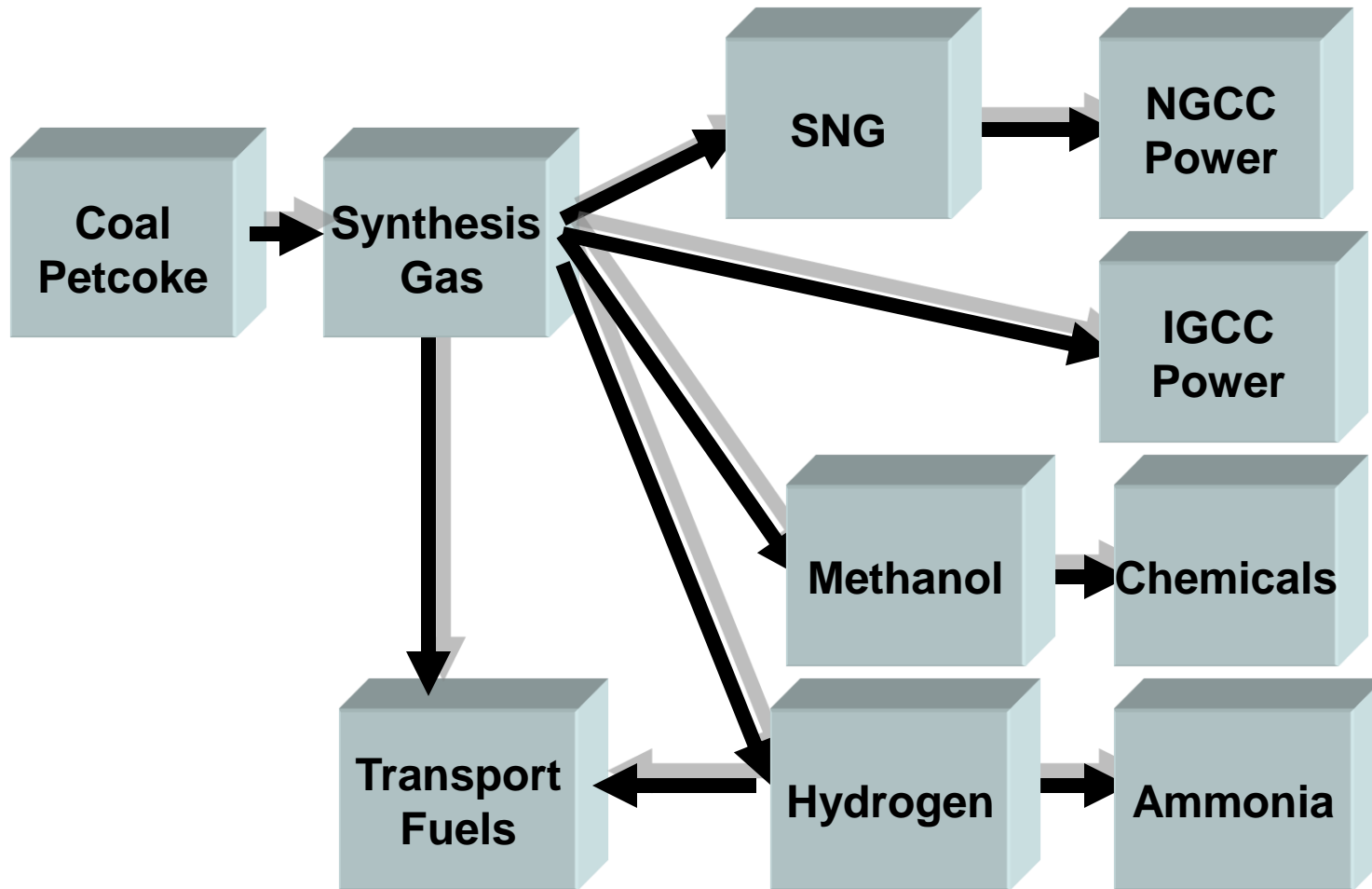
U.S. Natural Gas Supply Challenge



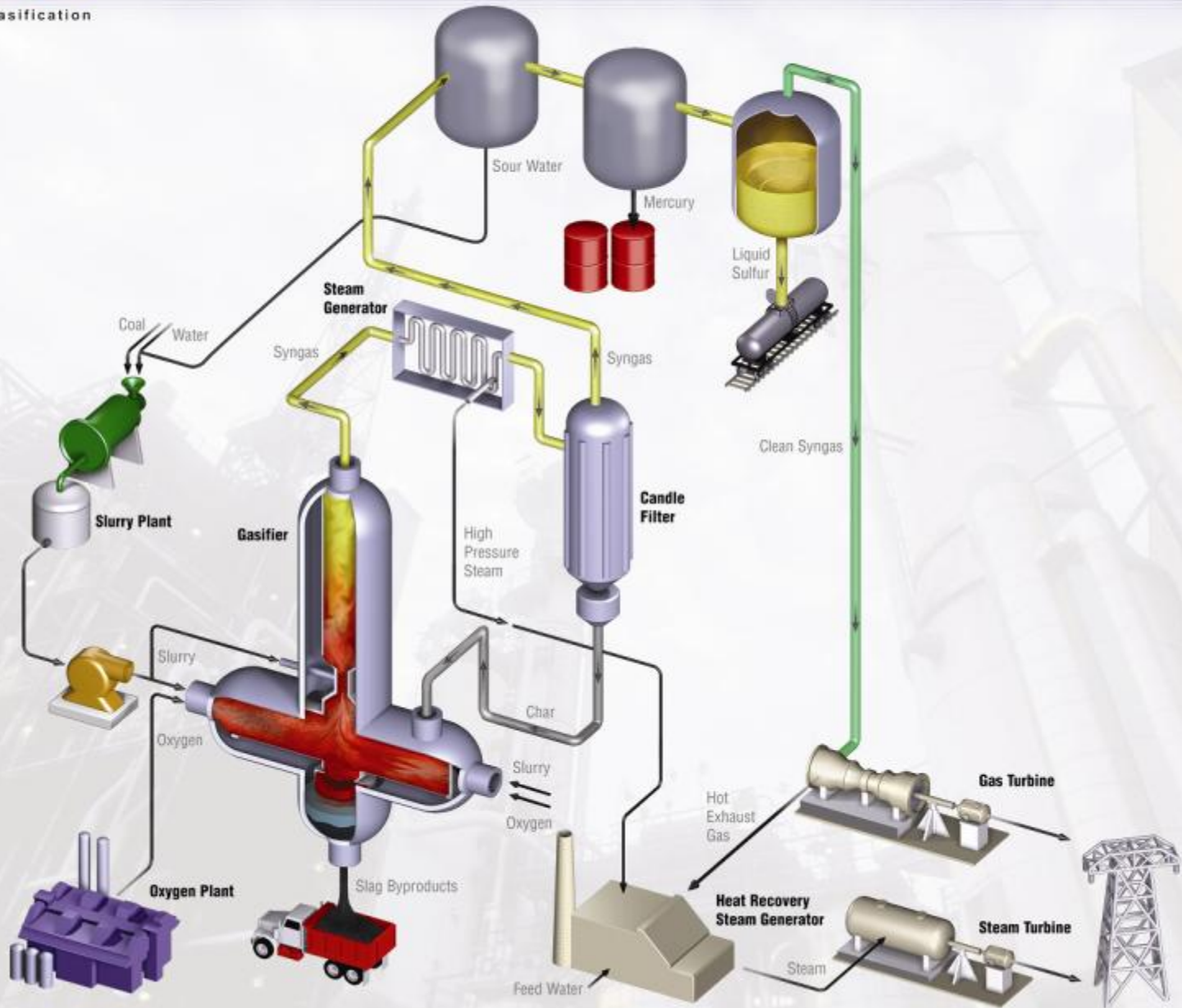
Source: U.S. Department of Energy, Annual Energy Outlook 2008

Gasification Paths to Clean Energy

Tomorrow Begins Today



A Look Inside the Process



Primary E-Gas Advantages

Tomorrow Begins Today

- Two Stage design with dry char filtration/recycle combines advantages of slurry and dry feed systems → **Efficient, simple, safe, low cost**
- Demonstrated for low reactivity as well as reactive fuels
 - 3.7 million tons sub-bituminous
 - 2.1 million tons petroleum coke
 - 1.7 million tons bituminous → **Fuel flexible**
- Continuous Slag Removal – no lock hoppers → **Reliable**
- Compact design → **Lower cost**
- The only solid fuel gasification technology licensor with hands on commercial operation – **Experience Driven Design**
- Continuously improving the technology

Wabash River IGCC

Gasifier

Gas Turbine

HRSG

Oxygen Plant

One of Cleanest Coal/Petcoke Fired Power Plants in the World

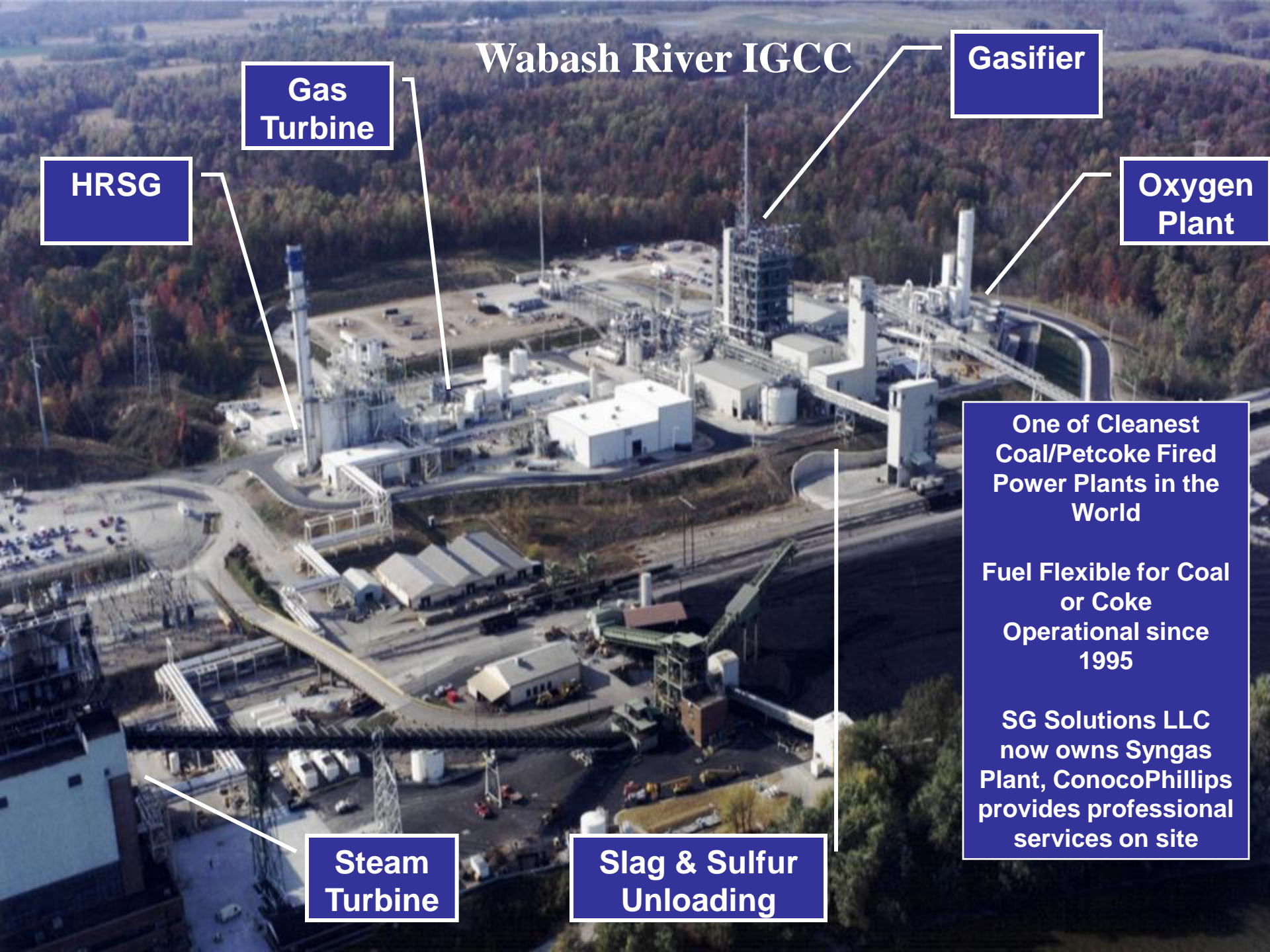
Fuel Flexible for Coal or Coke

Operational since 1995

SG Solutions LLC now owns Syngas Plant, ConocoPhillips provides professional services on site

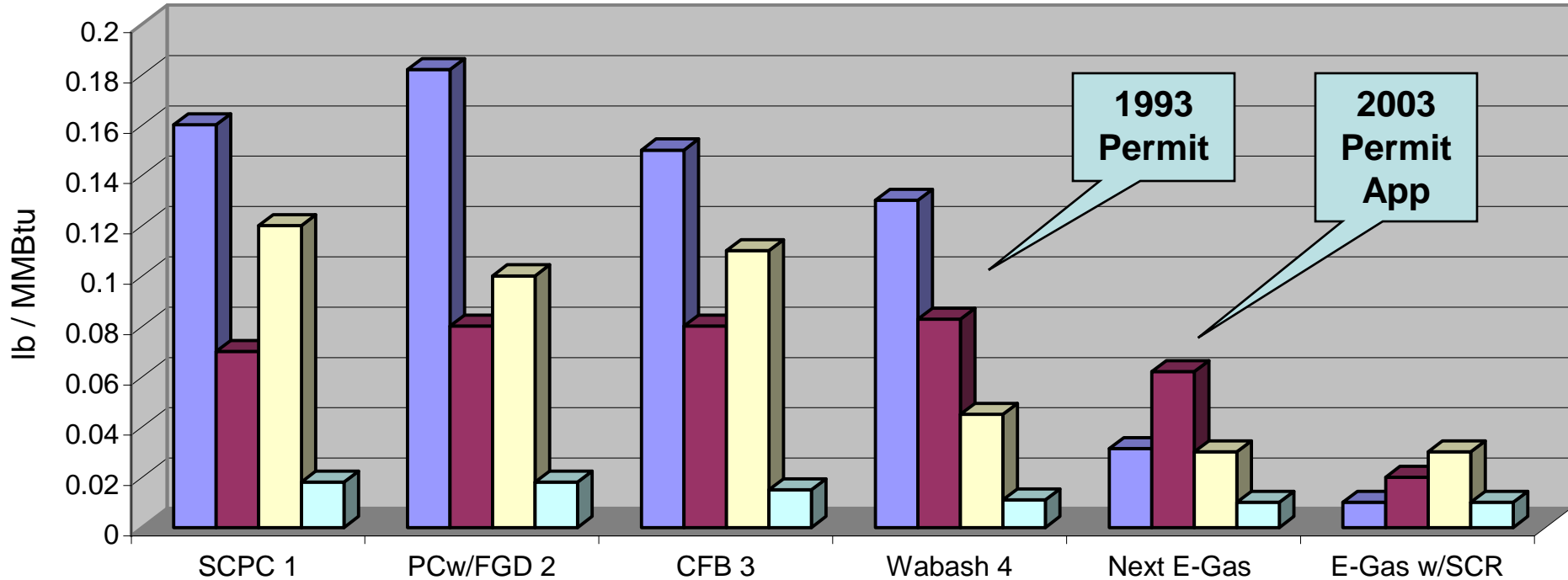
Steam Turbine

Slag & Sulfur Unloading



Estimated Emissions of Coal Based Power Plants

SO2 NOx CO PM/PM10



- 1) Wisconsin Electric Power SCPC information from April 2003 Draft Environmental Impact Statement, Elm Road Generating Station, Volume 1, Public Service Commission of Wisconsin & Department of Natural Resources, Table 7-11, p. 155 (Pittsburgh No. 8 coal)
- 2) Evaluation of IGCC to Supplement BACT Analysis of Planned Prairie State Generating Station, May 11, 2003. Prepared by Donald J. Wilhelm SFA Pacific, Inc. for Prairie State Generating Company, LLC.
- 3) Supplemental Information for PSD Permit Application, March 25, 2003, Prepared by Earth Tech, Inc. for Indeck - Elwood, LLC.
- 4) Wabash River Repowering Project, 1999 average reported to IDNR

ConocoPhillips – Peabody Joint SNG Development

Tomorrow Begins Today

2006: Screened Peabody's uncommitted U.S. reserves

Jan. 2007: Initiated evaluation of mine-mouth SNG opportunities

July 2007: JDA signed for gated development of preferred option

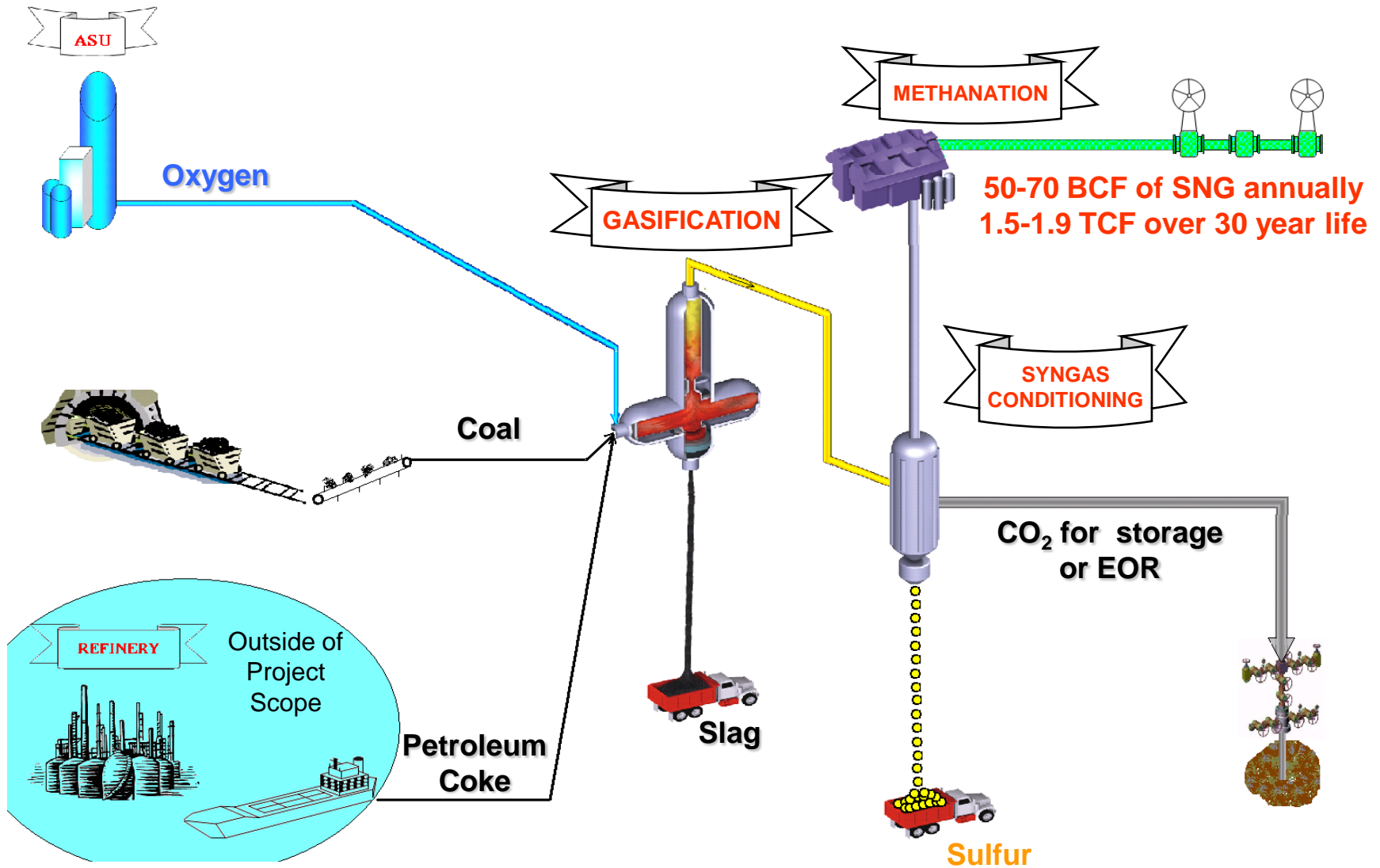
Sept 2007: Began FEL1 engineering with Bechtel

October 2007: Selected Western Kentucky for Project

FEL 1 nearing completion - design includes:

- Single portal mine supplemented with petroleum coke
- Three operating E-Gas™ gasifier trains with one spare
- Over 95% CO₂ captured for potential sequestration
- 60 BCF annual SNG production
- Expected operation in 2014

KY SNG Project Overview



A photograph of an industrial facility, likely a gasification plant, at dusk. The scene is filled with complex piping, scaffolding, and large cylindrical tanks. Several lights are illuminated, casting a warm glow against the darkening sky. The overall atmosphere is industrial and technical.

SNG is the Coal Opportunity

Domestic Resource Utilization

Fungible Marketplace

Storage – not time of day pricing

Existing NGCC Fleet – Customers

Really Carbon Capture Ready

- 95% pure CO₂ stream produced

**Approximately 12 Announced Coal & Petcoke
Gasification Projects for SNG ~ 1.5 – 2 BCFD**