

Gasification Industry Overview and Factors Driving Change

Gasification Workshop

Tampa, FL

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Gasification Technologies Council

Acknowledgements

U.S. DOE/NETL for its support of the 2007 World Gasification Survey and Workshops

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Overview

- **Update on Status of Gasification Worldwide**
- **U.S. Gasification Outlook**
- **Operating in a Carbon Constrained World**

2007 World Gasification Update

- **Summary Findings**
- **Geographical Distribution**
- **Feedstock Distribution**
- **Product Distribution**
- **Comparison to 2004 Data**
- **Where's the Growth?**
- **Outlook - Plausible 2015 Scenario**

Industry Growth

Operating Plant Statistics 2004 vs. 2007

2004

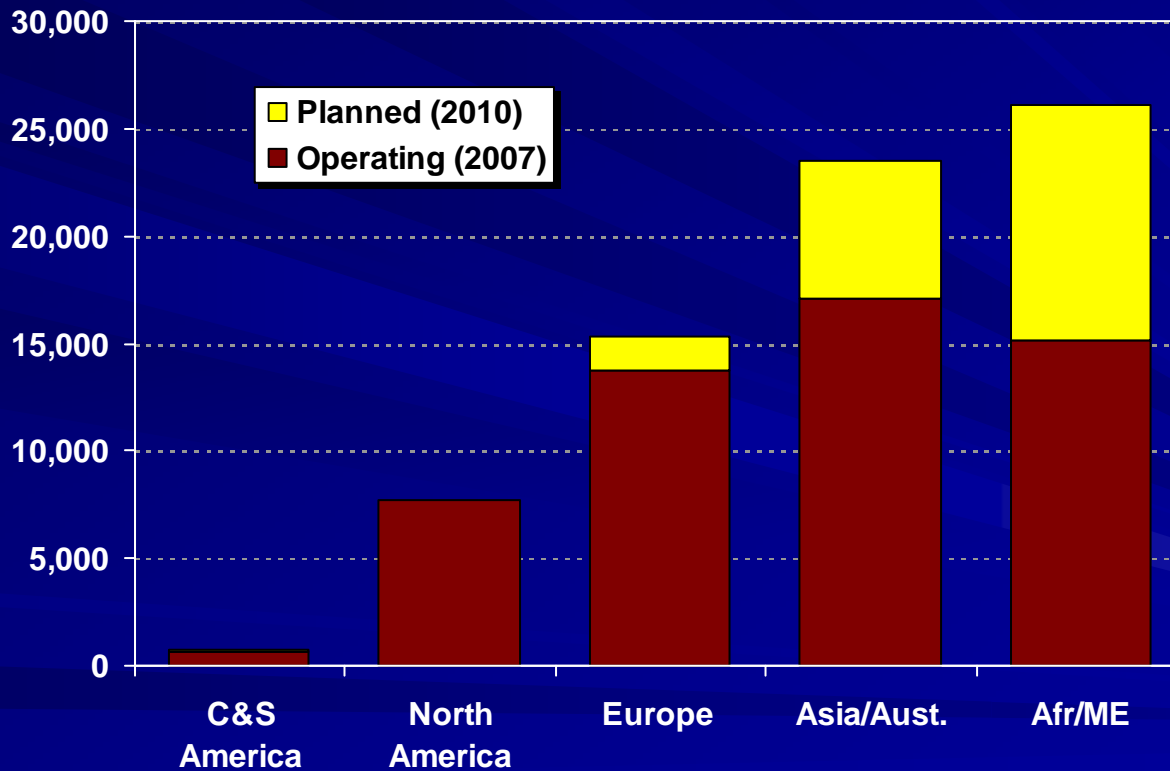
- **117** operating plants
- **385** gasifiers
- Capacity~**45,000** MWth
- Feeds
 - Coal **49%**, Pet. Resid. **36%**
- Products
 - Chemicals **37%**, F-T **36%**, Power **19%**

2007

- **142** Operating Plants
- **420** Gasifiers
- Capacity~**56,000** MWth
- Feeds
 - Coal **55%**, Pet. Resid. **32%**
- Products
 - Chemicals **44%**, F-T **30%**, Power **18%**

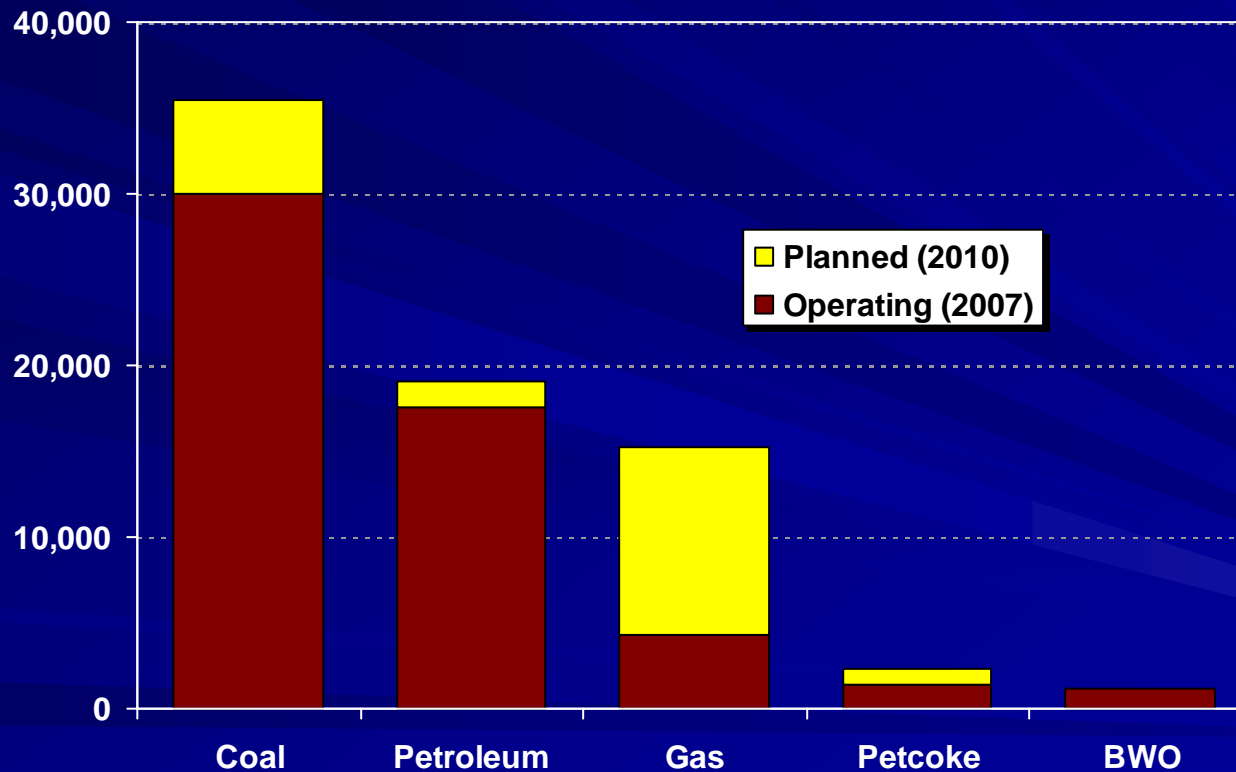
Geographical Distribution of World Gasification Capacity

(MW_{th} Equivalent)



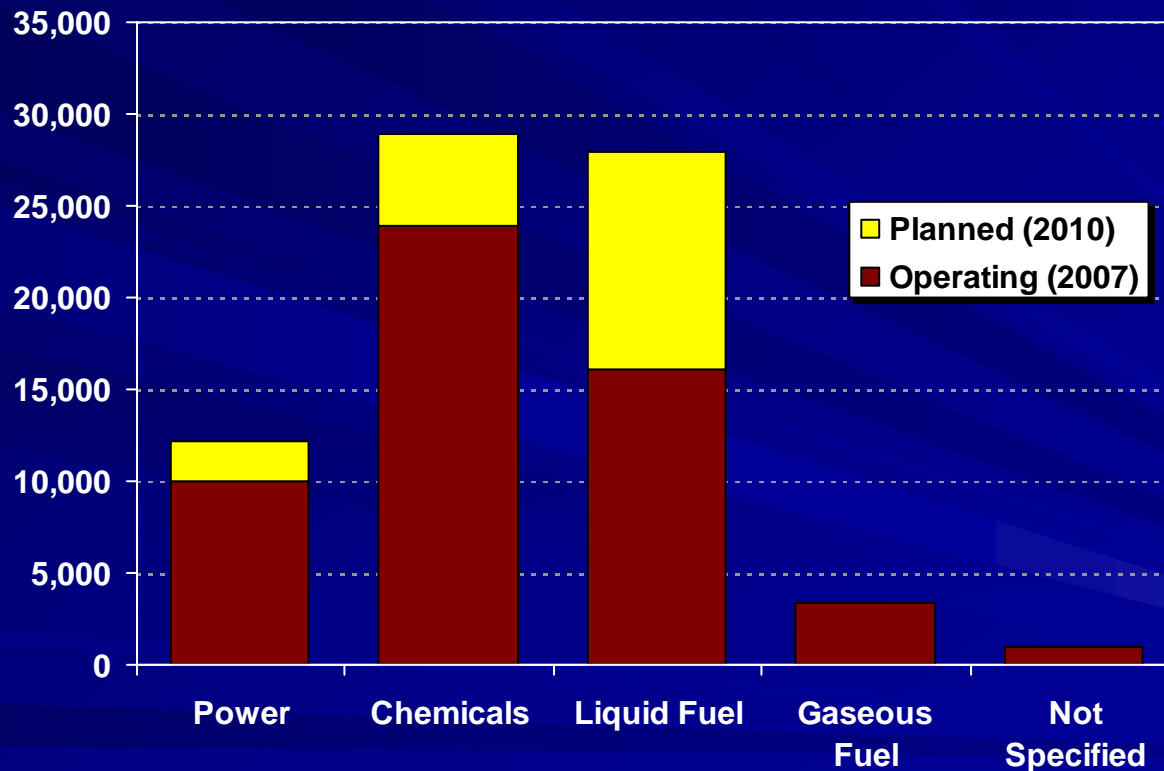
Feedstock Distribution of World Gasification Capacity

(MW_{th} Equivalent)



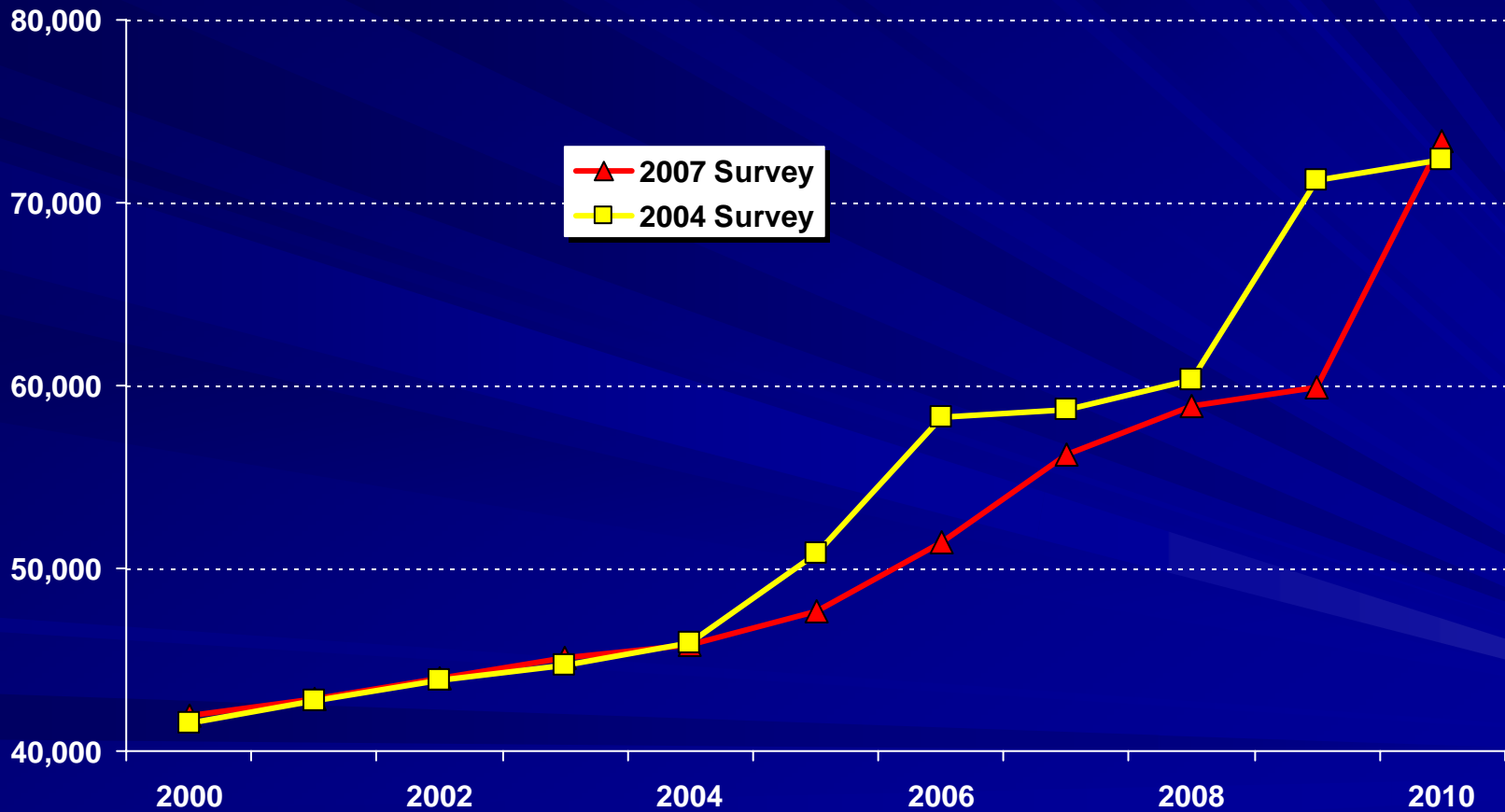
Product Distribution of World Gasification Capacity

(MW_{th} Equivalent)



World Gasification Capacity Growth

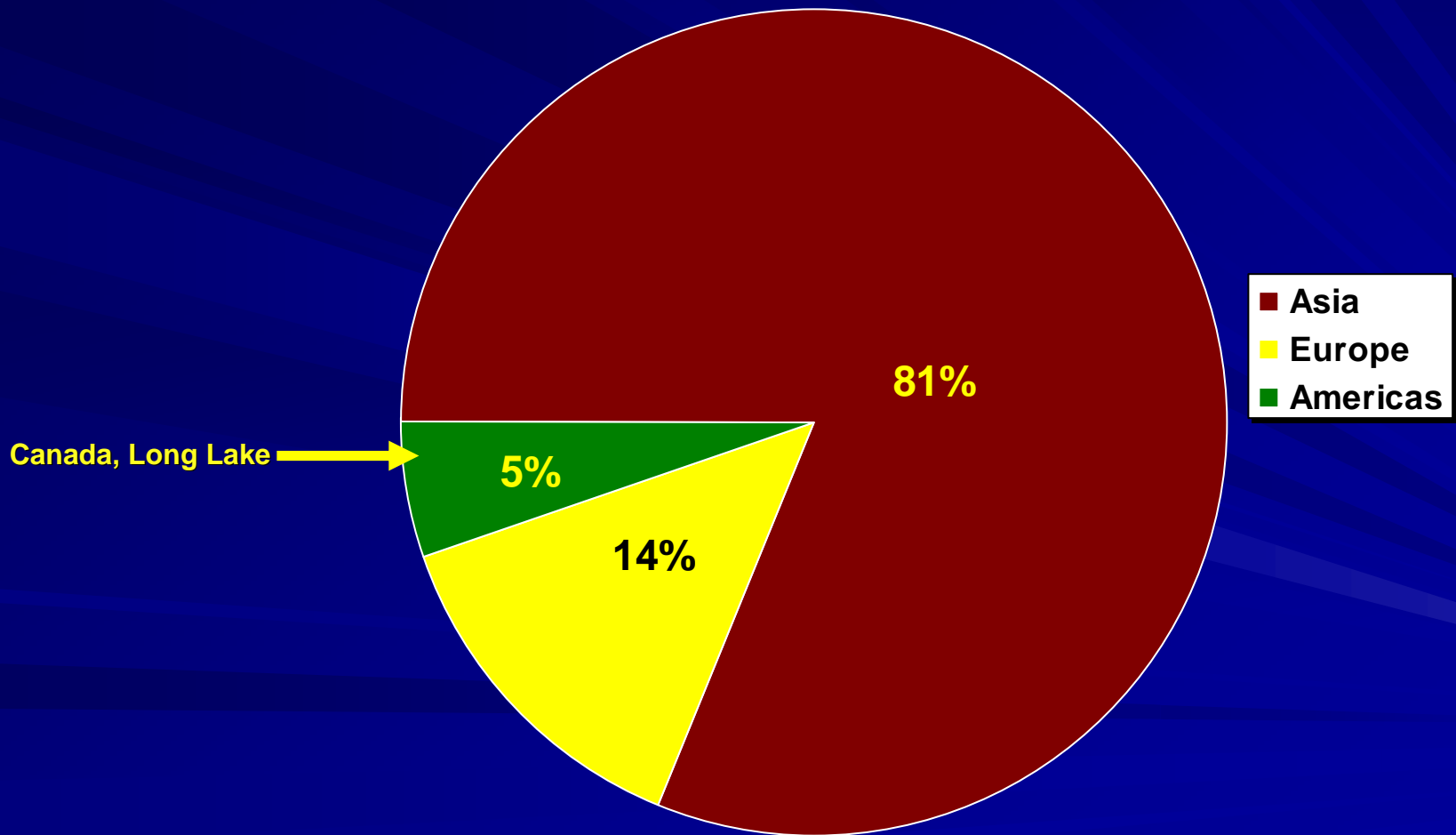
(MWth Equivalent)





Where's the Growth?

Shares of Growth in World Gasification Capacity

2004-2010
(without Pearl GTL)

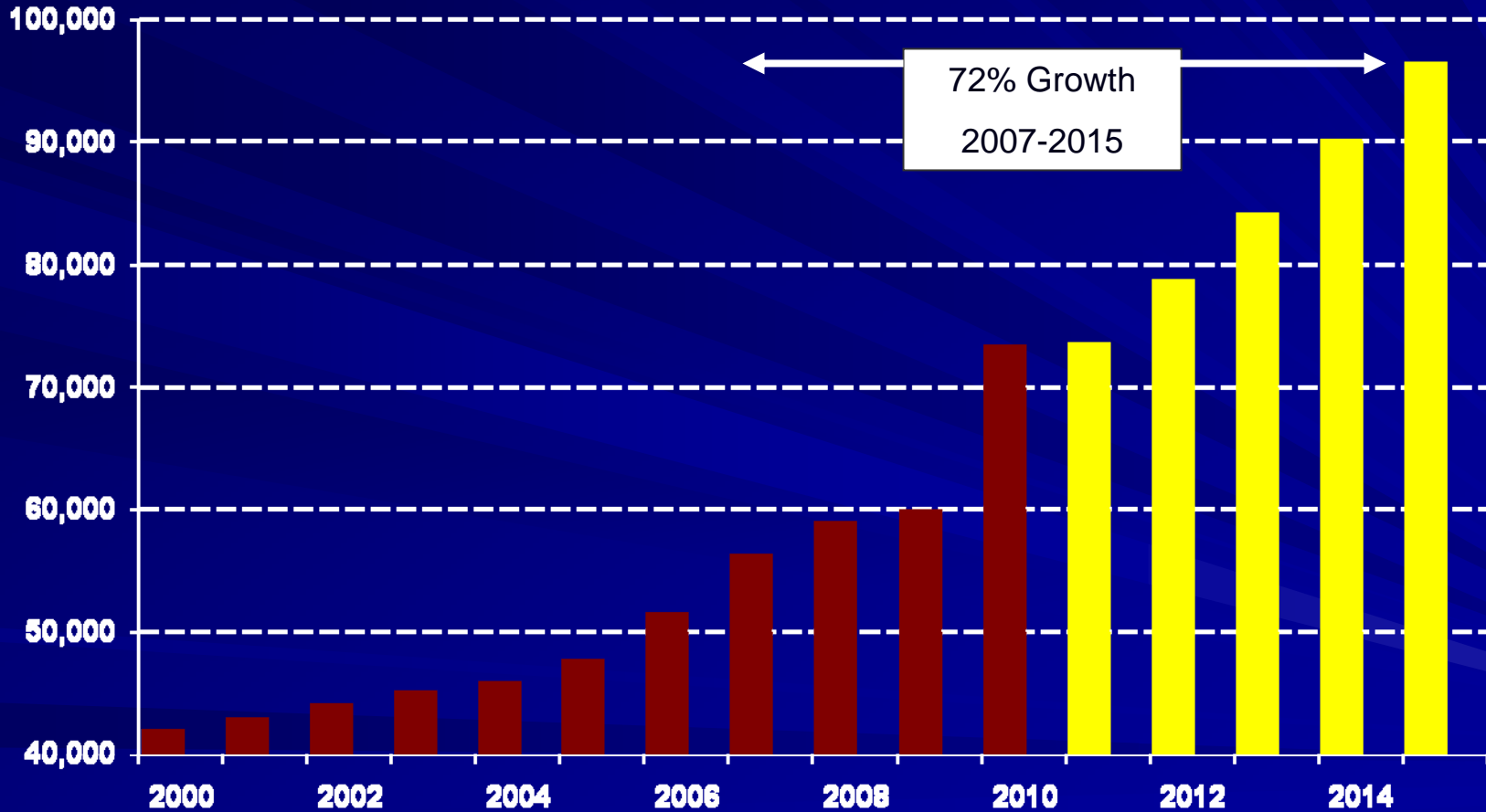


2004-2010 Gasification Scoreboard

	China	29
	U.S.	0

World Gasification Growth: Plausible Scenario

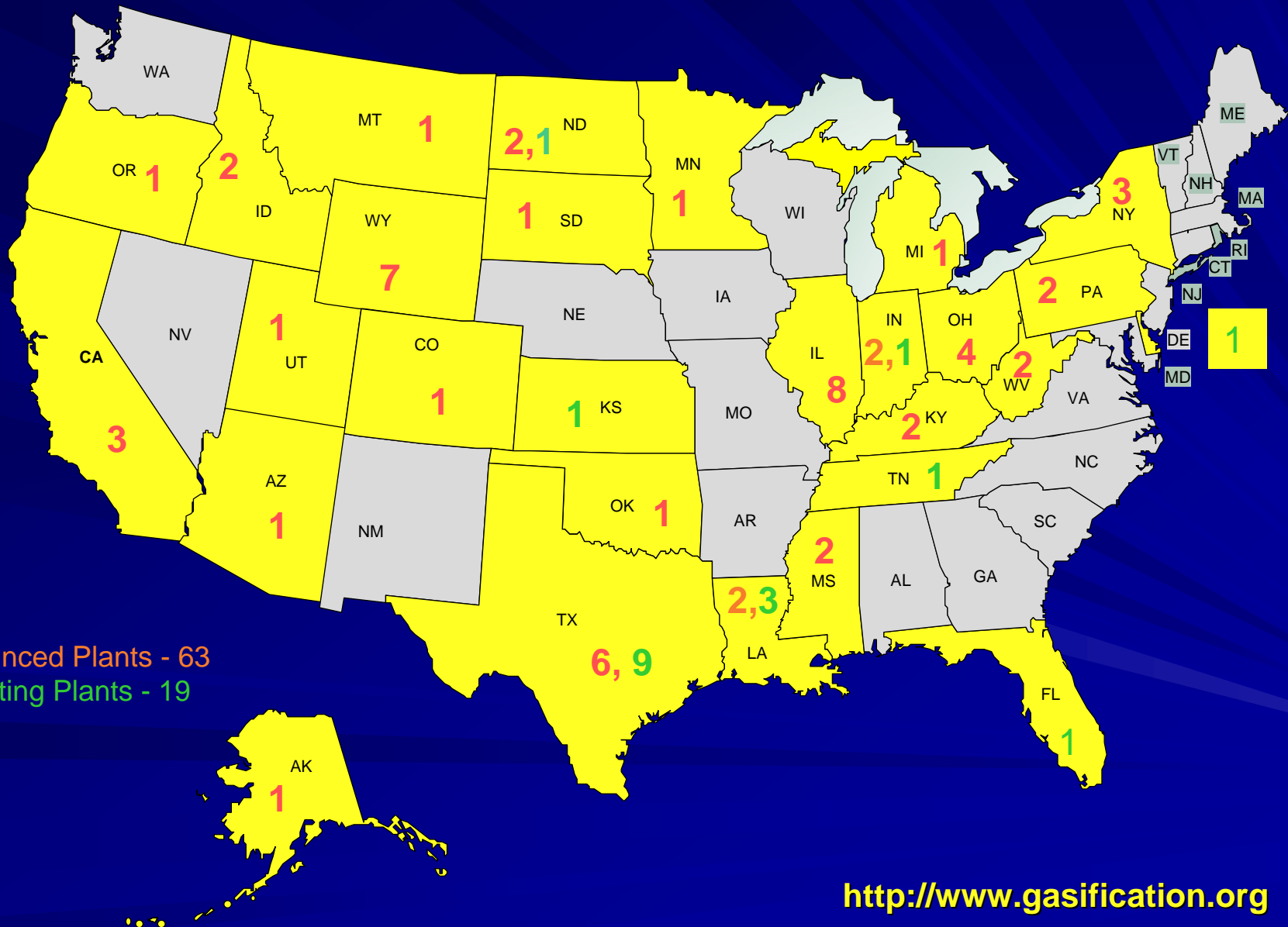
(MWth Equivalent)



Outlook for U.S. Gasification

- **Planned Facilities Early 2007**

U.S. Gasification Activity



Key:
Announced Plants - 63
Operating Plants - 19

Shift in Outlook for U.S. Gasification

- **Public Opinion**
- **Public Policies**
- **Effect on Gasification Market**

Impact of Public Opinion on Public Policy

The New York Times

OCTOBER 20, 2007 -- THE ENERGY CHALLENGE

Fight Against Coal Plants Draws Diverse Partners



Robin Loznak/The Great Falls Tribune

A group of potential builders look over the proposed site of a coal-fired power plant near Great Falls, Mont.

Power Plant Rejected Over Carbon Dioxide For First Time

By [Steven Mufson](#)

Washington Post Staff Writer

Friday, October 19, 2007; Page A01

The Kansas Department of Health and Environment yesterday became the first government agency in the United States to cite carbon dioxide emissions as the reason for rejecting an air permit for a proposed coal-fired electricity generating plant, saying that the greenhouse gas threatens public health and the environment.



The New York Times

Wednesday, November 7, 2007

Business of Green: A Special Section

The Carbon Calculus

By MATTHEW L. WALD



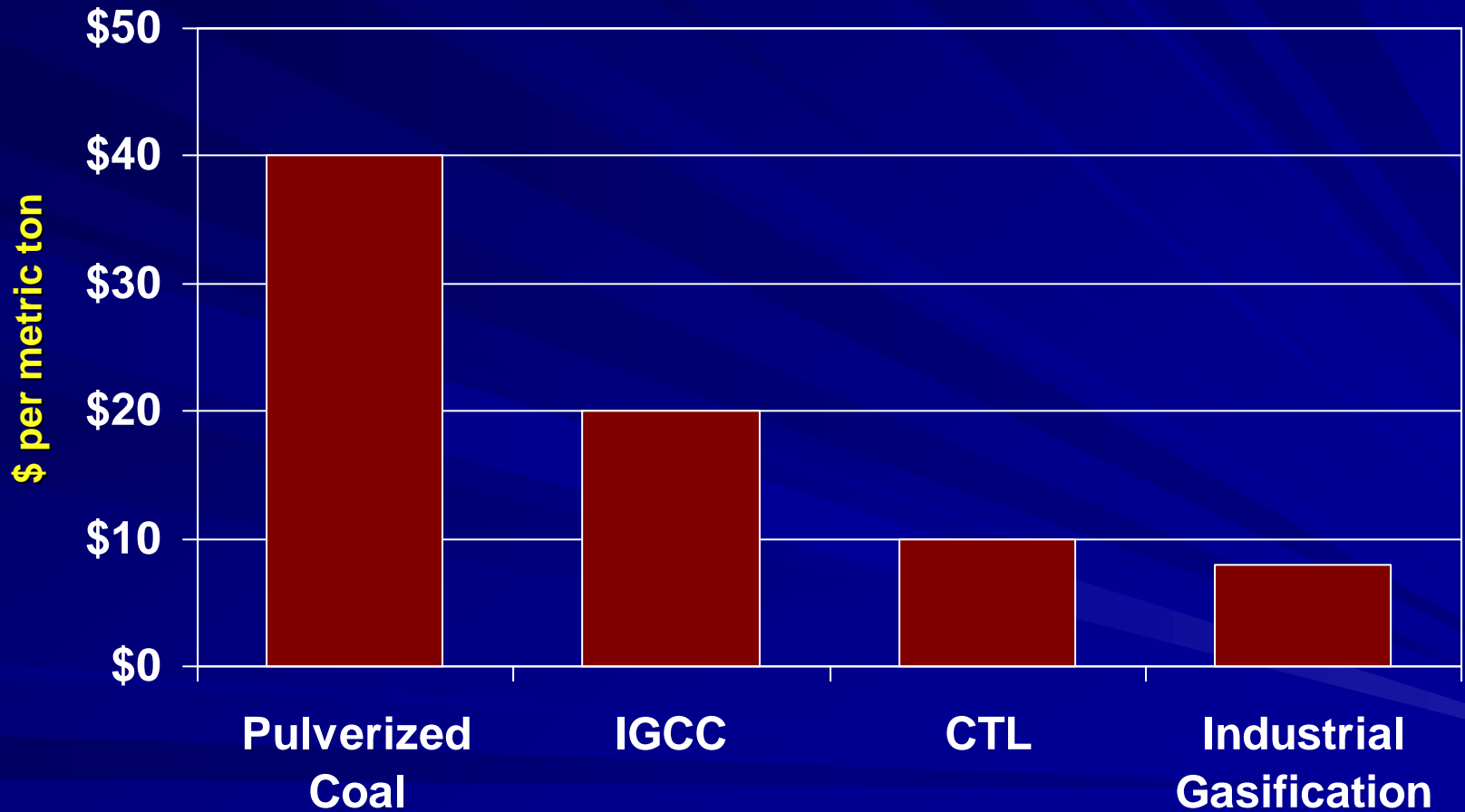
SHAKEUP A coal-burning plant in Washington, where a Senate subcommittee approved a bill to create a cap-and-trade system for carbon dioxide emissions. Support is not as strong in the House.

A proposal in Congress to put a price tag on greenhouse-gas emissions could overturn the economics of energy.....

Factors Affecting Gasification in U.S.

- **Coal Plants Difficult/Impossible to Site**
- **CO₂ Concerns are a Dominating Force**
- **No Regulatory/Liability Framework for CCS**
- **Path of Least Resistance – Natural Gas**
- **Increasing Pressures on Natural Gas Price**
- **Natural Gas Dependent Industries & Consumers Impacted**

Carbon Capture & Compression Costs



Sources: MIT, Eastman Chemical

U.S. Gasification Direction

**In a carbon constrained world,
growing demand for gasification
in face of rising NG prices:**

- **Chemicals, Fertilizers,**
- **Refinery Polygen,**
- **Substitute Natural Gas**

Save the Date



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<http://www.gasification.org>

Questions? Comments?

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