



# Hydrogen Growth

## Lehman Brothers Industrial Gas Conference Call

May 13, 2004



Stephen F. Angel, Executive Vice President

[www.praxair.com](http://www.praxair.com)

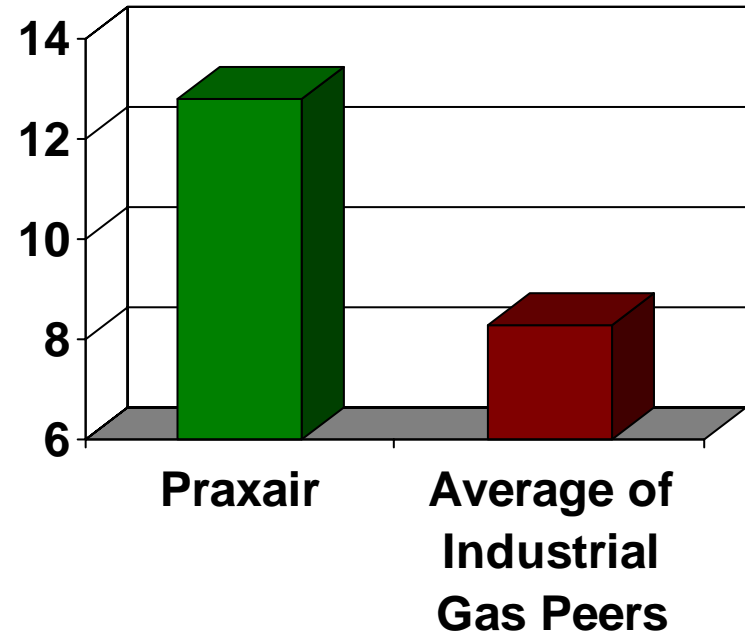
# Forward Looking Statements

**The forward-looking statements contained in this announcement concerning demand for products and services, the expected macroeconomic environment, sales and earnings growth, and other financial goals involve risks and uncertainties, and are subject to change based on various factors. These include the impact of changes in worldwide and national economies, the cost and availability of electric power, natural gas and other materials, development of operational efficiencies, changes in foreign currencies, changes in interest rates, the continued timely development and acceptance of new products and processes, the impact of competitive products and pricing, and the impact of tax and other legislation and regulation in the jurisdictions in which the company operates.**

# Operating Model

- ◆ Focus on 10 core geographies
- ◆ Optimize 5 growing opportunities
  - H<sub>2</sub> / Energy
  - Electronics
  - Healthcare
  - China
  - Application technologies
- ◆ Relentless focus on execution
  - Productivity savings > \$100MM/yr
    - Procurement
    - Global operational excellence
    - Six Sigma
  - Flawless project execution

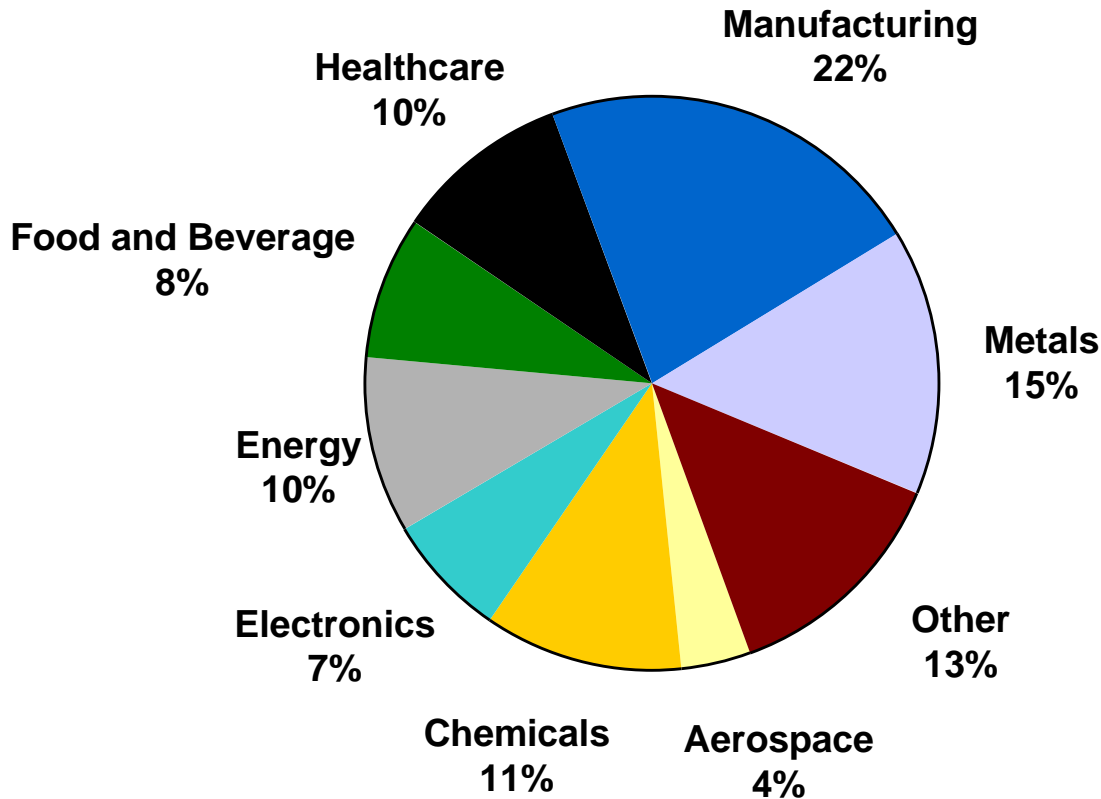
## 2003 ROC %



*ROC=Net Operating Profit After Tax/Average Capital*

***Return on capital substantially better than peers***

# 2003 Praxair End Markets



## Applications Technology

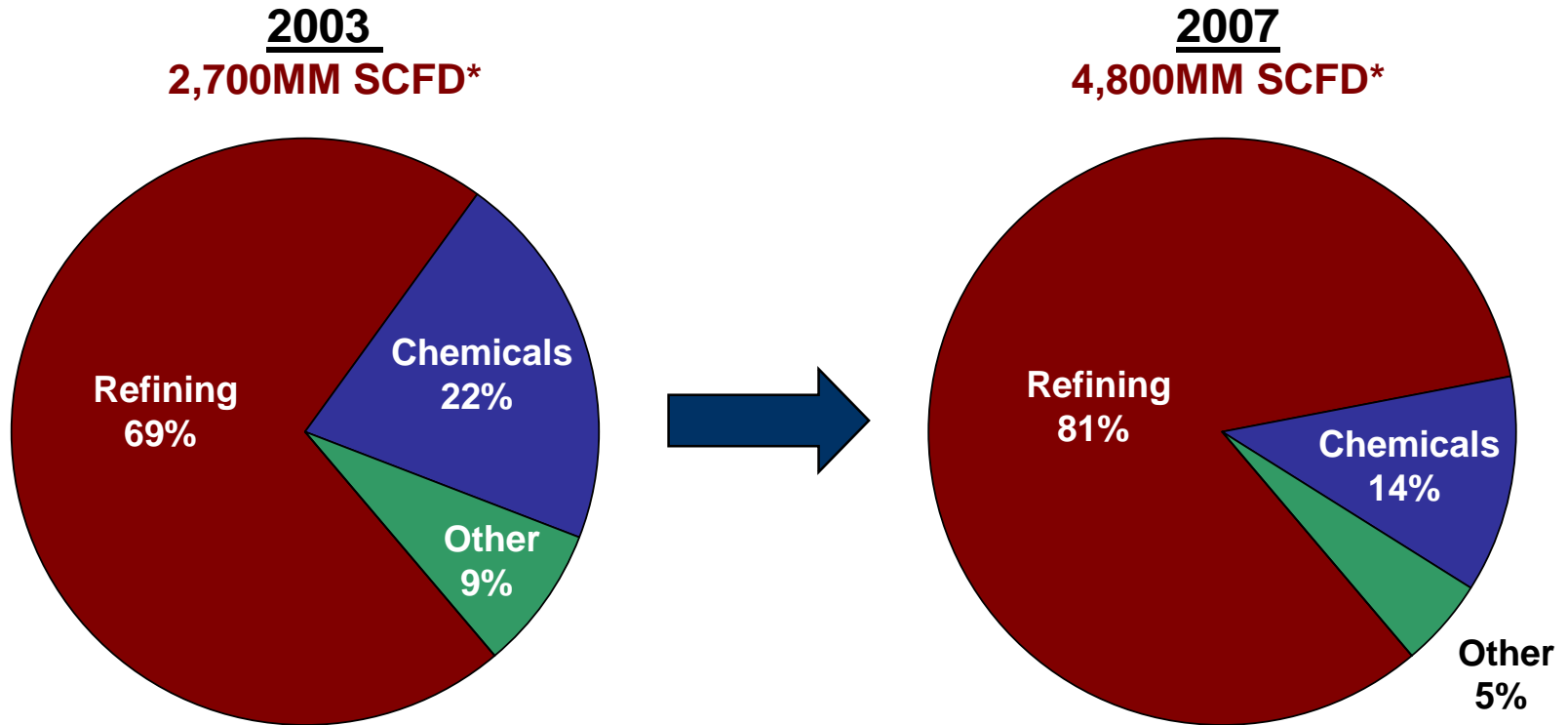
Productivity  
 Cycle Time  
 Yield

Energy  
 Oxyfuel Combustion  
 Hydrogen

Environmental  
 Air Quality  
 Water Treatment

***Gas consumption intensity continues to grow***

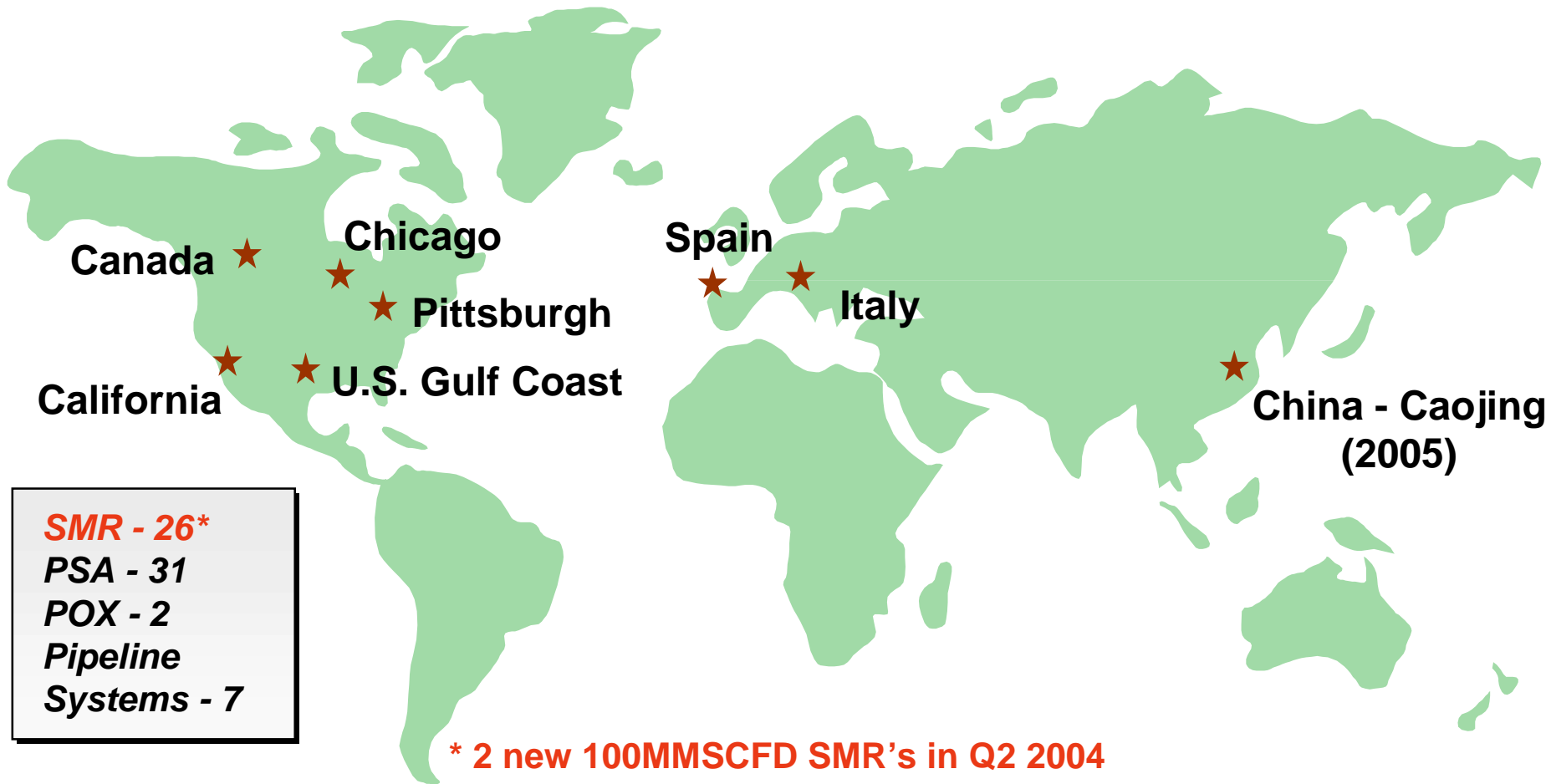
# Global Purchased Hydrogen Market



***The global hydrogen market is expected to grow 12%-15% per year primarily from refining demand in the United States***

\*Praxair Estimate

# Key Praxair Hydrogen Facilities



**SMR - 26\***  
**PSA - 31**  
**POX - 2**  
**Pipeline**  
**Systems - 7**

**\* 2 new 100MMSCFD SMR's in Q2 2004**

***Global hydrogen production capacity installed and under construction 850 MMSCFD***

# North American Key Drivers for Hydrogen Growth

- ◆ Heavier/sour crude supply (hydrocracking and hydrotreating)
- ◆ Environmental regulations require cleaner fuels (hydrotreating)
- ◆ Over the fence supply - outsourcing
- ◆ Crude refining capacity will increase 15-20% over the next 10 years\*

***Hydrogen use by North American refiners will grow significantly faster than global growth rates***

# EPA Regulations - Update

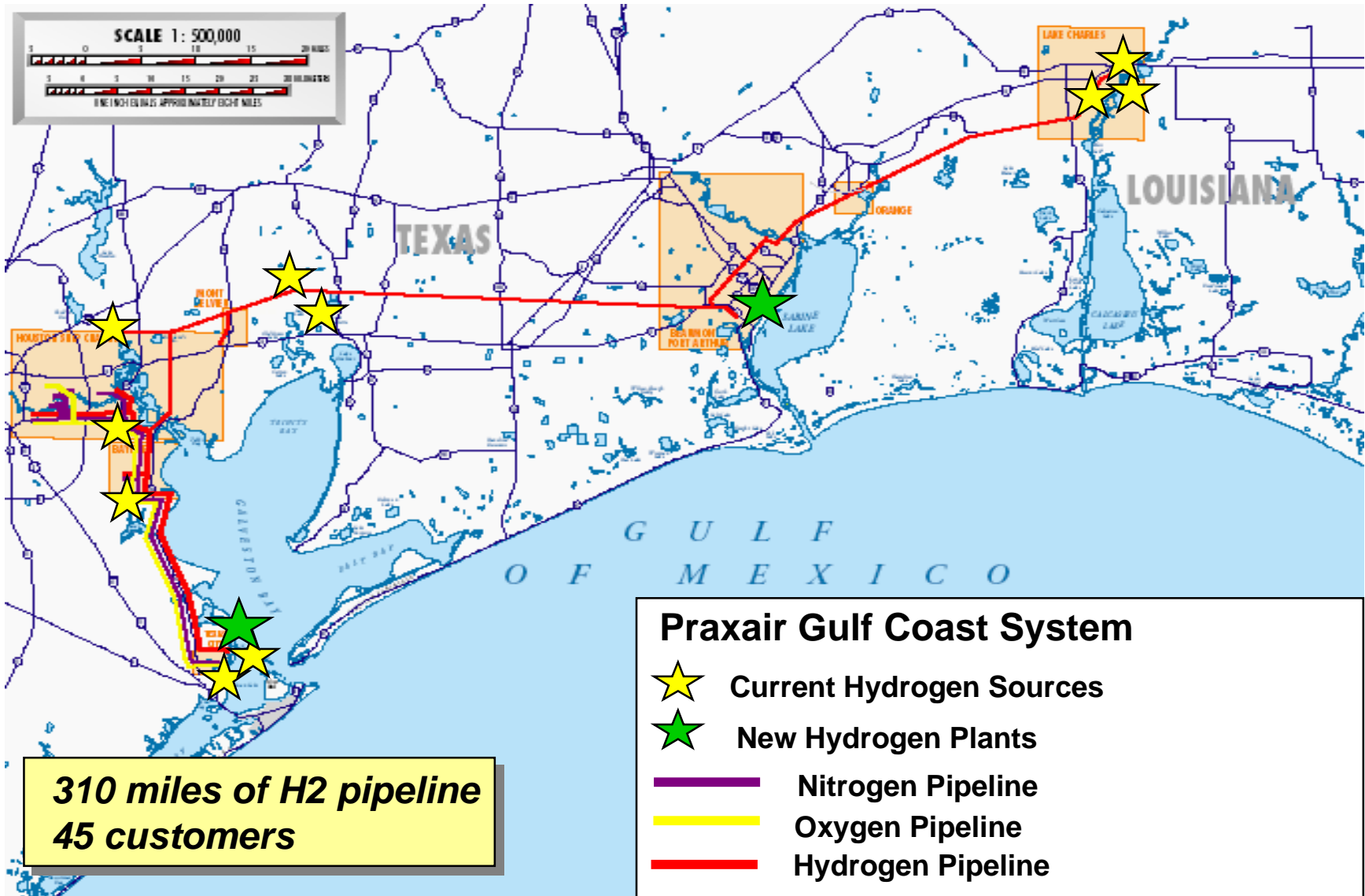
	Gasoline	On-Road Diesel	Off-Road Diesel*	Locomotive & Marine	
2004	120ppm				
2005	30ppm				
2006	↓	15ppm			
2007			500ppm	500ppm	
2008	↓	↓	↓	↓	
2009					15ppm
2010					↓
2011				15ppm	
2012					

\*Approved 5/11/04

*Hydrogen growth story continues*

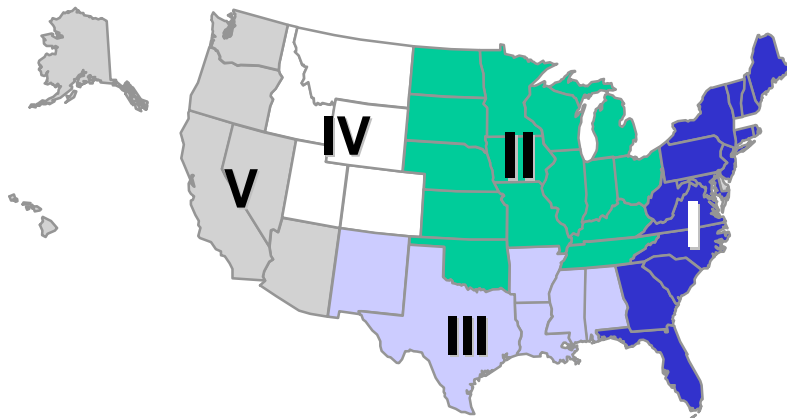


# Praxair US Gulf Coast Pipeline System

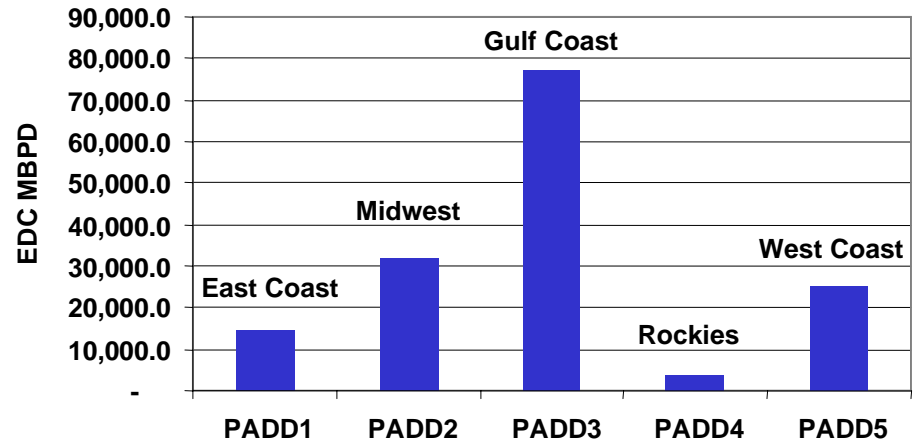


# Gulf Coast Customers Are Complex

## Petroleum Administration for Defense Districts (PADD) Regions



## PADD Region EDC\*

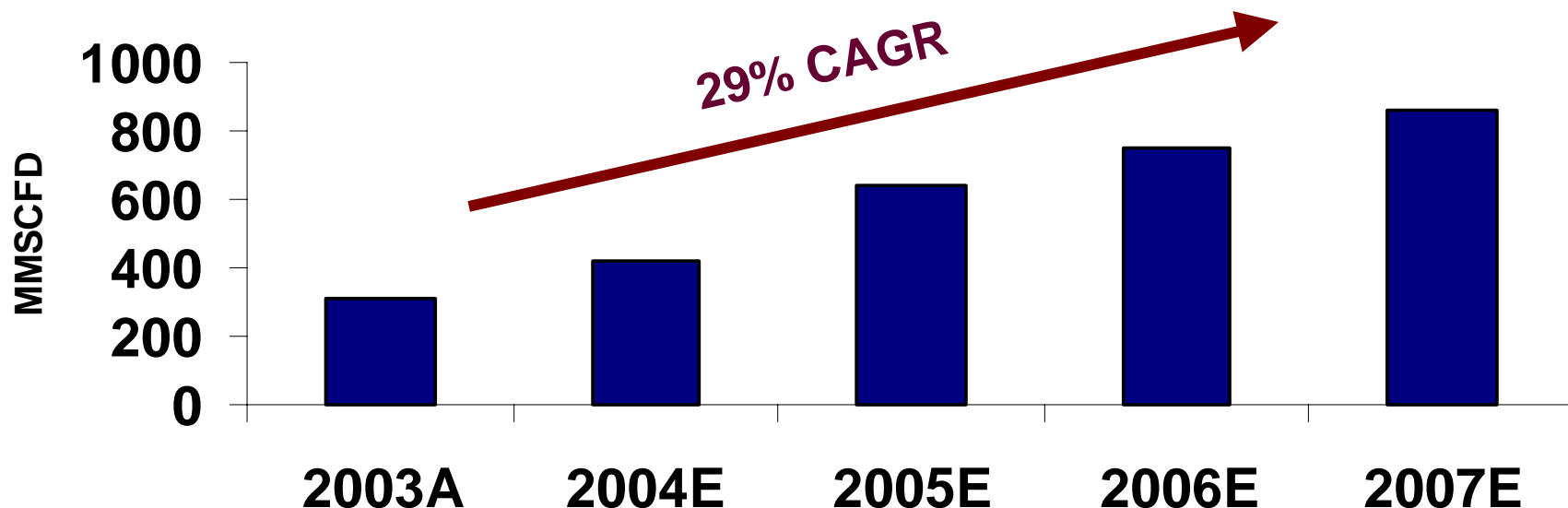


***Gulf Coast customers are the largest and most complex → Maximum Hydrogen Intensity***

\*Equivalent Distillation Capacity "EDC"

# Praxair Gulf Coast Hydrogen Growth

Average Daily Volume



*300 MMSCFD signed - 200MMSCFD more anticipated*

# Gulf Coast Hydrogen Complex - Update

- ◆ Starting up new 100MMSCF steam methane reformer in Texas City. Expect full production by end of Q2
- ◆ Second new 100MMSCFD plant to start up in Port Arthur by July
- ◆ Additional production capacity will be required to support future contracts

Fourth Quarter Run Rate (\$MM)

	<u>2003 Q4A</u>	<u>Indicative 2004 Q4E</u>
Volume (MMSCF/day)	250	500
Sales	\$ 84	\$153
NG Pass Thru <sup>1</sup>	\$ 62	\$117
Value Added Sales	\$ 22	\$ 36
Operating Profit	\$8	\$16
OPM	10%	10%
EBITDA <sup>2</sup>	\$13	\$24
Invested Capital <sup>3</sup>	\$265	\$405
<u>EBITDA</u>	20%	24%
<b>Invested Capital</b> <i>(annualized pretax)</i>		

1) Assumes a natural gas price of \$5.00/MMBTU

2) Operating profit plus depreciation

3) Invested Capital equals net PP&E, goodwill and accounts receivable

# The Praxair Investment Case - Sustainable Growth

- ◆ Operating leverage to an improving US economy
  - Applications technology drives growth at a multiple of industrial production
- ◆ 5 key growth platforms will add significant additional top line growth
  - H2, Healthcare, Electronics, China, Technology licensing
- ◆ Continued capital and pricing discipline produce strong free cash flow and high return on capital

*Praxair's Total Shareholder Return has outperformed its industrial gas competitors and the S & P 500 over 1, 5, and 10 years*

# Principles of Sustainability

## ***Governance and Integrity***

Foster a culture of integrity and accountability throughout the company through rigorous compliance with all laws, and by establishing and following effective corporate governance practices.

## ***Customer Commitment***

Continuously develop new products and applications that help our customers improve their productivity, energy efficiency and environmental performance. Provide the highest levels of service, reliability and quality to our customers.

## ***Environmental Responsibility***

Continue to improve the efficiency of energy consumption. Reduce the intensity<sup>1</sup> of air emissions, including greenhouse gases.

## ***Employee Safety and Development***

Maintain a safe work environment with a goal of zero accidents. Provide training and career opportunities that allow employees to develop to their fullest potential. Increase the diversity of our workforce so that it is more representative of the communities in which we operate.

## ***Community Support***

Help to improve the welfare and future of the communities in which we operate by sharing our knowledge, expertise and resources related to environmental protection, and community health, safety and security.

## ***Financial Performance***

Continuously improve our financial performance and provide attractive returns to our shareholders. Generate operating cash flow to reinvest in business growth and pay dividends.

<sup>1</sup>Intensity is per-unit-of-production measure