## Agenda – Morning Session 10:00 am – 12:15 pm

<table>
<thead>
<tr>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome</td>
<td>Kelcey Hoyt</td>
</tr>
<tr>
<td>Why Praxair?</td>
<td>Steve Angel</td>
</tr>
<tr>
<td>Managing the Business</td>
<td>Eduardo Menezes</td>
</tr>
<tr>
<td>Product &amp; Energy Management</td>
<td>Scott Kaltrider</td>
</tr>
<tr>
<td>Operations Reliability &amp; Productivity</td>
<td>Sean Durbin</td>
</tr>
<tr>
<td>US Packaged Gases – Growth &amp; Profitability</td>
<td>John Panikar</td>
</tr>
<tr>
<td>Petchem &amp; Refinery – Pursuing New Opportunities</td>
<td>Dan Yankowski</td>
</tr>
<tr>
<td>Canada – Growth through Natural Resources</td>
<td>Matt White</td>
</tr>
<tr>
<td>Mexico – Well-Positioned for Growth</td>
<td>Antonio Cesar</td>
</tr>
<tr>
<td>Q&amp;A</td>
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</tbody>
</table>
## Agenda – Afternoon Session 2:00pm to 4:00pm

<table>
<thead>
<tr>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Performance Culture</td>
<td>Scott Telesz</td>
</tr>
<tr>
<td>Europe – A Tale of Two Economies</td>
<td>Todd Skare</td>
</tr>
<tr>
<td>South America – Valuable Long-Term Franchise</td>
<td>Domingos Bulus</td>
</tr>
<tr>
<td>Asia – Growing Profitably</td>
<td>Anne Roby</td>
</tr>
<tr>
<td>Technology Priorities</td>
<td>Ray Roberge</td>
</tr>
<tr>
<td>Project Selection Discipline</td>
<td>Ben Glazer</td>
</tr>
<tr>
<td>Project Execution</td>
<td>Murray Covello</td>
</tr>
<tr>
<td>Sustaining Growth &amp; Outperformance</td>
<td>Jim Sawyer</td>
</tr>
<tr>
<td>Q&amp;A</td>
<td></td>
</tr>
</tbody>
</table>
Welcome
Kelcey Hoyt
Director, Investor Relations since 2010

- East Region Finance Director, US Industrial Gases 2009
- On-site Project Analysis & Helium Controller, North America 2008
- Director, Corporate Accounting & SEC Reporting 2004
- Manager, Corporate Accounting 2002
- Prior employment with KPMG & Xerox 1992-2001

Pace University, BBA Accounting
Certified Public Accountant
Forward Looking Statement

This document contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are based on management’s reasonable expectations and assumptions as of the date the statements are made but involve risks and uncertainties. These risks and uncertainties include, without limitation: the performance of stock markets generally; developments in worldwide and national economies and other international events and circumstances; changes in foreign currencies and in interest rates; the cost and availability of electric power, natural gas and other raw materials; the ability to achieve price increases to offset cost increases; catastrophic events including natural disasters, epidemics and acts of war and terrorism; the ability to attract, hire, and retain qualified personnel; the impact of changes in financial accounting standards; the impact of changes in pension plan liabilities; the impact of tax, environmental, healthcare and other legislation and government regulation in jurisdictions in which the company operates; the cost and outcomes of investigations, litigation and regulatory proceedings; continued timely development and market acceptance of new products and applications; the impact of competitive products and pricing; future financial and operating performance of major customers and industries served; the impact of information technology system failures, network disruptions and breaches in data security; and the effectiveness and speed of integrating new acquisitions into the business. These risks and uncertainties may cause actual future results or circumstances to differ materially from the projections or estimates contained in the forward-looking statements. Additionally, financial projections or estimates exclude the impact of special items which the company believes are not indicative of ongoing business performance. The company assumes no obligation to update or provide revisions to any forward-looking statement in response to changing circumstances. The above listed risks and uncertainties are further described in Item 1A (Risk Factors) in the company’s Form 10-K and 10-Q reports filed with the SEC which should be reviewed carefully. Please consider the company’s forward-looking statements in light of those risks.
Why Praxair?

Steve Angel
Chairman, President & CEO since 2007

- President & Chief Operating Officer
- EVP, North America, Europe and Asia
- Prior experience General Electric

North Carolina State University, BS Civil Engineering
Loyola University Maryland, MBA
Industry-leading Results

**Short-Term (2012)**

- **OP %**
  - Praxair: 22%
  - Comp. A: 14%
  - Comp. B: 14%
  - Comp. C: 9%

- **ROC**
  - Praxair: 22%
  - Comp. A: 15%
  - Comp. B: 9%
  - Comp. C: 9%

**Operating Cash Flow**

- 1992: $2.8B
- 2012: $2.8B

**Long-Term**

- **Operating Margin** (% of sales)
  - Praxair: 22%
  - Industry Average: 15%
  - Comp. A: 14%
  - Comp. B: 9%
  - Comp. C: 9%

- **Operating Cash Flow**
  - 1992: $2.8B
  - 2012: $2.8B

**Vision:** best performing industrial gases company

Source: Factset

*Praxair 2012 non-GAAP measure; refer to Annual Report for reconciliation
Sustaining a Competitive Advantage

**Strategic Focus**
- Select geographies – best footprint
- Core industrial gas
- Sale of gas model
- Integrated supply
- Build density

**Technology**
- Product line advantage
- Total cost of ownership
- Customer applications

**Execution**
- Operational discipline
- Capital investment
- Safety
- Productivity
- Contract management
- Project execution
- Integrity and compliance

**People**
- High performers
- Disciplined operators
- Detail-oriented
- Nimble & adaptable
- Excellent leaders
- Non-hierarchical

High performance culture… takes years to build… tough to emulate
Praxair Five Year Outlook

Sales  High single-digit growth
OP    > Sales growth
EPS   Double-digit growth
ROC   14 – 15%

2017F Sales

Segment
- North America 49%
- Europe 11%
- South America 18%
- Asia 17%
- PST 5%

End-Market
- Mfg. 25%
- Metals 17%
- Energy 14%
- Chem. 11%
- Aerospace 2%
- Electronics 8%
- Food & Bev. 8%
- Other 9%
- Healthcare 6%

Supply Mode
- Merchant 32%
- Packaged 29%
- On-site 29%
- Other 10%

Solid next 5 years

Sales growth
- High single-digit growth
- Double-digit growth

OP
- > Sales growth

EPS
- Double-digit growth

ROC
- 14 – 15%

2012 Sales
- $11B

2017F Sales
- ~$16B

Base Volume
- 2-3%

Price
- 1-2%

Projects
- 3-4%

Acquisitions
- ~1%

2017F Sales
- Solid next 5 years

Excludes foreign currency and divestitures
Managing the Business

Eduardo Menezes
EVP & President, North America since 2010

- President, Praxair Europe 2007
- President, Praxair Mexico 2004
- VP & GM, Praxair Distribution, Inc. 2003
- VP, West Region, US Industrial Gases 2000
- Prior Praxair experience US and Brazil 1986-1999

Federal University of Rio de Janeiro, BS Chemical Engineering
State University of New York at Buffalo, MBA
### Organizational Considerations

#### Product
- Oxygen (O2): 95.9964%
- Nitrogen (N2): 14.0036%
- Argon (Ar): 39.948%
- Hydrogen (H2): 1.00794%

#### Supply Mode
- On-Site
- Bulk
- Packaged

#### End User
- Energy
- Healthcare
- Electronics
- Food & Beverage

#### Geography
- Global
- Regional
- Local

#### Sales
- Operations
- Marketing
- Engineering
- Technology

---

**How do we organize / run our business at Praxair?**
Geographically Prioritized Organization

1. Regional business model
   - Focused P&L
   - Management accountability
   - Asset optimization

2. Organize countries using other dimensions, as appropriate

Advantages of Praxair's model:

- Laser focus on results
- Fast response
- Avoid conflicts of “matrix” organizations
- Flexibility - systems, acquisition integration, etc…

P&L accountability key to Praxair’s superior financial performance
Advantages of Praxair’s US Integrated Model

- Sourcing security
- Greater wallet share %
- Ability to serve national / international customers

**Competitive Advantages**

**versus Major IG without packaged**
- Maximum co-product economics
- Larger sales force
- Ability to grow with customers (pkg ⇒ dewars ⇒ microbulk ⇒ bulk)

**versus Packaged focused**
- Sourcing security
- Greater wallet share %
- Ability to serve national / international customers

Best performing industrial gas company in the US
US Industrial Gases - World-Class Product & Energy Management

Scott Kaltrider
Vice President Business Management, USIG since 2010
Product & Energy Management, Helium & Rare Gas and Oil & Gas

- President, Praxair Healthcare Services 2007
- VP, West Region, US Industrial Gases 2003
- National Product Manager 2001
- West Region Sales Director 2000
- Prior Praxair experience in Sales & Operations 1982-1999

University of Tennessee, BS Chemical Engineering
US Industrial Gases Product Lines

<table>
<thead>
<tr>
<th>Products</th>
<th>Sources</th>
<th>Feedstocks</th>
<th>Distribution Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen Nitrogen</td>
<td>Air Separation</td>
<td>Air + Power</td>
<td>✔</td>
</tr>
<tr>
<td>Argon</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Steam-Methane Reforming</td>
<td>NR Natural Gas or Crude Hydrogen</td>
<td>✔</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>By-product</td>
<td>Crude Carbon Dioxide</td>
<td>✔</td>
</tr>
<tr>
<td>Helium</td>
<td>US Government Helium Reserve</td>
<td>Natural Gas Fields</td>
<td>✔</td>
</tr>
<tr>
<td>Rare Gases</td>
<td>Air Separation</td>
<td>Air + Power</td>
<td>✔</td>
</tr>
</tbody>
</table>

Process for management of diverse and complex set of products
US Contract Management by Supply Mode

Contract strategy secures price attainment and cost recovery

- **O₂ / N₂ & H₂ On-Site**
  - Long-term: 15 – 20 years
  - Take-or-pay provisions ensure base return
  - Pass-through escalation formulas for energy and inflation preserve return throughout project life

- **Merchant**
  - Medium-term: 3 – 7 years
  - Requirements contracts with mix of open contracts, formula and other terms that anticipate changing market conditions
  - Low-cost energy purchase & efficient production drives profitability

- **Packaged**
  - Short-term: 1 – 3 years or purchase order contracts
  - Bundle gas, rent, services, equipment and technology to maximize customer value

Capital Intensity / Volume

- High
- Low

# of Transactions / Contract Flexibility

- High
- Low
Merchant Pricing Dynamics

**Pricing Dynamics**
- Low % of customer’s cost stack
- Essential to customer’s process
- Product reliability is key
- Local supply – product does not travel

**Praxair’s Disciplined Approach**
- System reliability
- Value creation
- Contract management
- Cost recovery
- Supply/demand dynamics

Discipline drives global Praxair price attainment ~2% annually

*Index 2007 = 100*
Best-in-class energy management enables merchant profitability
Operations Reliability & Productivity

Sean Durbin
Vice President Operations, USIG since 2010

- VP, Product Management & Helium, US Industrial Gases 2009
- Director, Global Supply Systems 2008
- Business Development, Oil Sands, Canada 2006
- Director, Global Capital Projects 2005
- Prior Praxair experience in Engineering 1992-2004

*University of Maryland, BS Mechanical Engineering*
*State University of New York at Buffalo, MBA*
Productivity & Reliability

**DAILY OPERATIONS**
- Production
- Distribution
- Customers
- Suppliers

**Operations Support (Variation Analysis)**
- vs. design
- vs. similar
- vs. state-of-the-art
- in demand
- in utility costs

**Dedicated Productivity Specialists**
- Value stream experts
- Data systems
- “Hunter” mentality

Robust analysis & execution = continuous productivity benefits
Distribution Productivity Analysis

Minimize Cost Per Mile

- Fuel: 40%
- Driver: 35%
- Maint.: 10%
- Other: 15%

Breakdown

Pounds Per Trip Indicators
- Trailer size
- Loading trailers to capacity
- Delivering full loads
- Delivering at optimal levels
- Residual volume decisions
- Tank sizing
- Forecasting accuracy

Miles Per Trip Indicators
- Number of deliveries
- Inter-customer miles
- Sequencing of deliveries

Maximize Pounds Per Mile

- (pounds per trip ÷ miles per trip)

Pounds Per Trip Indicators

- Optimum Deliveries
- Tank Reserve
- Run Out Risk
- Inefficient Delivery

Driver behavior
- Buying strategy
- Tire technology
- Miles actual versus planned
- Site opportunity time
- Driver utilization
- Road Calls / breakdowns
- Corrective / preventive ratio
- Accidents

Example
- Run Out Risk
- Tank Reserve

Daily business changes create continuous opportunities
Production Productivity Recent Examples

1. Turbine Upgrade Programs
   - New manufacturing technology
   - Higher efficiency (2-3%)
   - Replication across 19 sites
   - $1.3MM/yr

2. Recycle Compressor Upgrade Program
   - Upgraded piping, seals, compressor
   - In-house designed parts
   - Replicated across 7 sites
   - $1.8MM/yr

3. Nitrogen Product Compressor
   - In-house design with patented technology
   - Replaced 2 machines 2 / 1
   - Replication underway
   - $0.4MM/yr

Thousands of singles…few home runs
### Productivity Sources Over the Next Several Years

**Target a 5% Minimum Reduction in Cost Stack Annually**

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
<th>Costs</th>
</tr>
</thead>
</table>
| **Plant Efficiency**                        | - Turbomachinery upgrades  
- Cold box optimization  
- Advanced predictive control monitoring | $400-450 MM |
| **Distribution and Customer Service**       | - Dynamic tour scheduling  
- Tank optimization  
- Fuel efficiency; on-board computers | $100-150 MM |
| **Packaged Gases**                          | - Network optimization and improved facilities workflow  
- Mobile filling station / automation  
- Asset tracking                        | $150-200 MM |
| **Reliability**                             | - Migrate new reliability technologies  
- Global preventive and predictive maintenance program  
- Vibration monitoring platform          | $50-100 MM  |
| **Business Process and Procurement**        | - Sourcing contract management  
- Low-cost country sourcing  
- Global business process replication   | $500-600 MM |

**Productivity is sustainable**
US Packaged Gases – Growth & Profitability

John Panikar
President, Praxair Distribution since 2010

- VP, South Region, US Industrial Gases  2009
- VP, Product Management & Helium, US Industrial Gases  2008
- Managing Director, India  2004
- Business Development, Asia  2002
- Prior Praxair experience in Sales & Marketing  1991-2001

University of Rochester, BS Chemical Engineering
Harvard University, Advanced Management Program
Gas & Rent
65% of sales

Gov’t
Manufacturing & Met-fab

End Markets
- Competitive manufacturing
- Energy & chemical expansion
- Environmental
- Labs & universities
- Infrastructure

$1.5B in sales…strong national footprint
US Packaged Gases Growth Drivers

**Metal Fabrication**
- Customer process audits
- Dedicated welding expertise
- Enabling customer productivity

**Specialty Gases**

**Typical uses in Refinery**
- Improved packaging
- Calibration mixtures
  - Environmental hygiene
  - Personnel safety

**PortaGas acquisition**
- Differentiated offerings
- Process control & calibration
- Environmental benefits

$250+ million organic sales growth over the next five years
Improving Quality of Our US Packaged Gases Business

Praxair Accomplishments
- Acquired $0.7B sales
- Increased density
- Extended geographic footprint

Density Benefits
- Lower cost to serve
- Higher efficiency
- Productivity & margin improvement

US Pkg Gases Market
- 2001: Independents 67%
- 2012: 50%

Texas Leadership
- Sales +7x
- OP +26x
- Fragmentation: High to Low

Praxair Profitability
- Operating margin %*
- 2001 vs 2012

Consolidate... build density... and grow operating margin

* Based on internal allocations and estimates
Petchem & Refinery – Pursuing New Opportunities

Dan Yankowski
President, Global Hydrogen since 2009

- VP, Global Supply Systems 2005
- VP, Global Operations Excellence 2004
- VP, South Region, US Industrial Gases 2000
- Global VP, Chemical and Refining Markets 1998
- Prior Praxair experience in Engineering 1979-1997

Pennsylvania State University, BS Mechanical Engineering
Updated Hydrogen Demand Outlook

- Diesel demand growing globally
- Strengthening low-sulfur regulations
  - Latin America projects slow to materialize
  - China coal gasification versus SMR
    + Creating oxygen opportunities
- US Shale Oil & Gas supply growth driving US refining / chemicals competitiveness
  - Light crude will moderate current hydrogen usage
  + Improved competitiveness driving exports
  + Revitalization of petchem industry will create robust industrial gas demand

Source: EIA

**US Refined Products Balance (MM BPD)**

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td>Exports</td>
<td>0.9</td>
<td>0.9</td>
<td>1.8</td>
<td>0.9</td>
<td>0.9</td>
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<tr>
<td>Imports</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

**Praxair Hydrogen Sales Growth**

- Projects
  - IOCL
  - Valero (2)
  - Motiva
  - Chevron

- Potential
  - Global refinery
  - US Petchem

- Double sales with existing projects...upside from new opportunities

Source: EIA
Praxair Hydrogen Projects Update

Valero – Port Arthur
- Start-up: June 2013
- 135MM scfd
- Expands capabilities in Port Arthur, Texas
- Tied into pipeline and storage cavern

Valero – St. Charles
- Start-up: August 2013
- 135MM scfd
- Expands presence in South Louisiana
- Ties into existing Geismar SMR via new 50 mile pipeline

IOCL – Paradip, India
- Plant complete: April 2013
- 85MM scfd
- First major over-the-fence hydrogen plant in India

Significantly expanding our hydrogen capacity
IG Opportunities in US Petchem Industry

Natural Gas/Liquids

- **POX or ATR**
- **SMR**
- **Ethane Cracking**
- **PSA**

Chemical Products

- **Fuels** (via GTL)
- **Methanol**
- **Ammonia**
- **Acetic Acid**
- **Ethylene Oxide/Glycol**
- **Ethylene** (Source)

IG Sales Intensity

- **Fuels**
- **Methanol**
- **Ammonia**
- **Acetic Acid**
- **Ethylene Oxide/Glycol**

Potential for $1B to $2B in IG industry capex going forward
Canada – Growth through Natural Resources

Matt White
President, Praxair Canada since 2011

- VP & Treasurer 2010
- VP & Controller 2008
- Finance Director, North America Industrial Gases 2004

Pennsylvania State University, BS Industrial Engineering
University of Delaware, MBA Finance
Chartered Financial Analyst
Certified Public Accountant
$1B sales in 2012

Leading Position

Integrated Supply

Diversified End Markets

Valuable franchise
Natural Resources Driving Canadian Growth

**Growth Drivers**

**Metals & Mining**
- $170B investments
- Iron, Copper, Nickel, Gold

**Praxair Opportunities**
- $300+ million in sales growth over the next 5 years

**Oil & Gas**
- Oil sands production
- Exploration & fracking
- LNG terminals & pipelines
- Liquid N\(_2\) & CO\(_2\) for EOR
- Packaged gases & hardgoods
- O\(_2\)/H\(_2\) for bitumen upgrading

Source: Industrial Info Resources
North West Redwater Partnership (NWR)

- **NWR 50:50 JV - North West Upgrading & Canadian Natural Resources**
  - $6B project, start-up in 2016
  - Government secured 30-year feedstock supply & processing agreement
- **Praxair building 2,000 TPD ASU**
- **20-year take-or-pay contract**

Large project...further opportunities in the energy sector
Mexico – Well-Positioned for Growth

Antonio Cesar
President, Praxair Mexico since 2012

- VP, Merchant Business, South America (SA) 2004
- Business Development, SA 2003
- Executive Director & General Manager Gases, SA 2001
- Marketing Director, SA 1997
- Prior Praxair experience Sales & Marketing 1986-1996

Gama Filho University in Rio de Janeiro, Mechanical Engineering
Wharton School at the University of Pennsylvania, Strategic Planning and Industrial Marketing Program
Stanford University, Strategy & Organization Executive Program
Why Do We Like Mexico?

Very Open Economy

# International Trade Agreements

<table>
<thead>
<tr>
<th>Country</th>
<th>Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>44</td>
</tr>
<tr>
<td>China</td>
<td>~20</td>
</tr>
<tr>
<td>Brazil</td>
<td>~15</td>
</tr>
</tbody>
</table>

Source: FT, U.S. Census Bureau, Foreign Trade

Low-cost and Skilled Labor Force

Manufacturing Wage ($/hr)

- China: $2.2
- Mexico: $2.4

Source: INEGI, National Bureau of Statistics of China

$100B+ in Foreign Direct Investment

2009-2012 – by Sector

- Manufacturing: 46%
- Financial: 14%
- Constr./Mining/Util.: 10%
- Other: 31%

Source: Global Insight, Mexican Economic Secretary

Large Energy Sector, Good Growth Potential

- Top 10 global oil producer
- World’s 6th largest estimated shale gas reserves
- Large amounts of proven oil and gas in conventional reserves

Source: EIA

Well-positioned to compete globally
Praxair in Mexico

- Leading position in attractive market
- Preferred supplier with Tier-1 customers
- Fully-integrated player

- Complete product portfolio
  - Atmospheric, process and specialty gases
  - Hardgoods and safety equipment
  - Oil field services

- Applications and technical support

Praxair Sales $0.7B in 2012

Valuable franchise in 2nd largest economy in Latin America
Praxair Mexico Packaged Gases Business

Packaged Gases Sales Trend

- Applications technology in metal fab
  - Welding mixtures, new processes, laser OEM’s
- Specialty gases
  - Energy, environmental, food & beverage
- Retail segment
  - 16 new retail stores in next two years

Micro-bulk Conversion

- Value for customer: Higher
- Cost to serve: Lower
- Multi-year contracts
  - Price escalation formulas
  - Rental fee for equipment

Double-digit growth in key business segment
Energy Sector in Mexico

**Sector Trends**

- Declining oil production, net importer of natural gas
- Existing wells requiring stimulation
- Know-how / investments needed
- Energy reform

**Opportunities for Praxair**

- Further market penetration of existing products / services
  - Enhanced oil recovery (Samaria)
  - Nitrogen injection (Nitropet)
- Oil and gas services and wells maintenance

**Praxair Mexico Energy End Market Sales**

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>35</td>
</tr>
<tr>
<td>2012</td>
<td>340</td>
</tr>
<tr>
<td>2017F</td>
<td></td>
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</table>

~20% growth annually