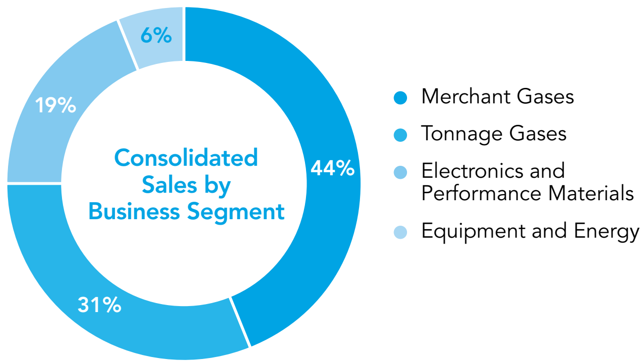
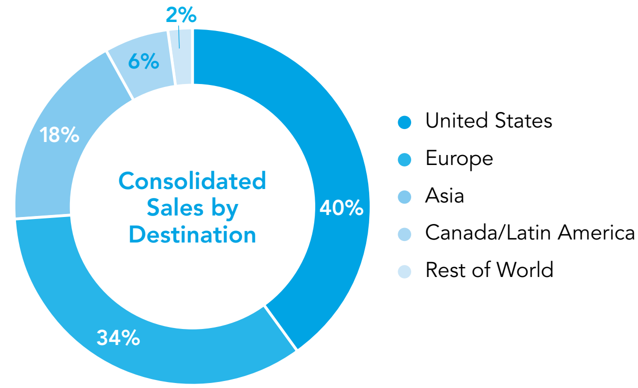
2009 ANNUAL REPORT

Financial Highlights





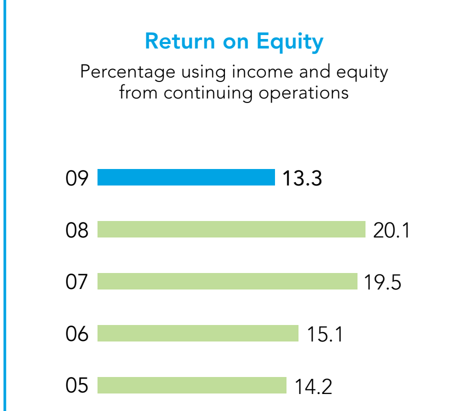
Millions of dollars, except per share	**2009**	2008	Change
FOR THE YEAR			
Sales	**$8,256**	$10,415	(21%)
Operating income	**846**	1,496	(43%)
Income from continuing operations	**640**	1,091	(41%)
Net income	**631**	910	(31%)
Capital expenditures on a non-GAAP basis (A)	**1,475**	1,355	9%
Return on capital employed on a non-GAAP basis (B)	**10.6%**	13.0%	
Return on average shareholders' equity (C)	**13.3%**	20.1%	
Operating margin	**10.3%**	14.4%	
PER SHARE DOLLARS			
Basic earnings	**3.01**	4.29	(30%)
Diluted earnings	**2.96**	4.15	(29%)
Dividends	**1.79**	1.70	5%
Book value	**22.68**	24.03	(6%)
AT YEAR END			
Shareholders' equity	**$4,792**	$5,031	
Shares outstanding (in millions)	**211**	209	
Shareholders	**8,600**	8,900	
Employees (D)	**18,900**	21,100	

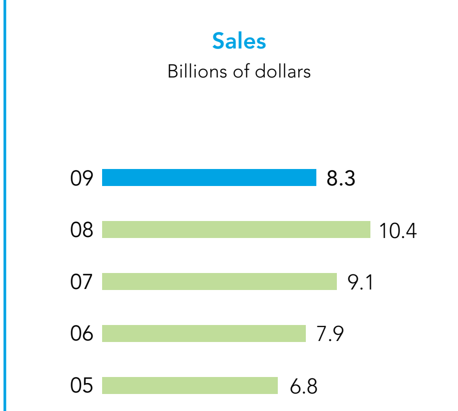
(A) Includes additions to plant and equipment, investments in and advances to unconsolidated affiliates, acquisitions, and spending associated with facilities accounted for as capital leases. See page IV for reconciliation to GAAP results.

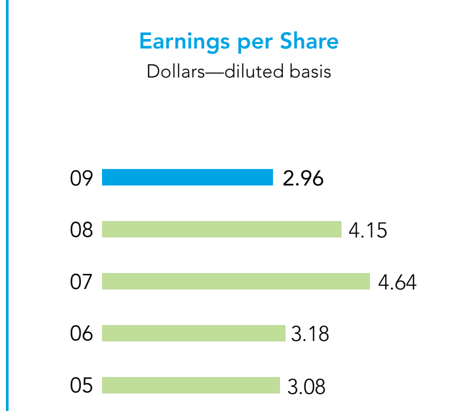
(B) Calculated as earnings after tax divided by five-quarter average total capital. See page IV for reconciliation to GAAP results.

(C) Calculated using income and five-quarter average equity from continuing operations.

(D) Includes full- and part-time employees from continuing and discontinued operations.







Our Businesses

Merchant Gases

Industrial and medical customers throughout the world depend on our oxygen, nitrogen, argon, helium, hydrogen, and medical and specialty gases for a wide array of applications. We supply most merchant gas in liquid form to small and larger customers—delivered by the Air Products tankers you see on the road. We provide smaller quantities of our "packaged" gases in cylinders and dewars for customers who require more exacting quantities for their processes. And we make available proprietary on-site gas generation devices (cryogenic and noncryogenic) to meet customers' varying purity, pressure and flow rate requirements economically.

2009 consolidated sales: $3.6 billion

Major end markets: glassmaking, steel, nonferrous, oil field services, pulp and paper, water systems, metal manufacturing, chemical processing, rubber and plastics, packaging, food and beverage, healthcare, medical, research and analytical, aerospace, and electronics

2011 segment operating margin goal: 20%

Tonnage Gases, Equipment and Energy

Through our Tonnage Gases segment, we supply hydrogen, carbon monoxide, synthesis gas, nitrogen and oxygen via large on-site facilities or pipeline systems to meet the needs of large-volume, or "tonnage," industrial gas users. We either construct a gas plant adjacent to or near the customer's facility or deliver product through a pipeline from a nearby location. We also design and manufacture cryogenic and gas processing equipment for air separation, hydrocarbon recovery and purification, natural gas liquefaction (LNG) and helium distribution equipment, and we are pioneering technologies to serve future energy markets through our Equipment and Energy segment.

2009 consolidated sales: $3.1 billion

Major end markets: petroleum refining, chemical and petrochemical manufacturing, oil and gas recovery and processing, steel and primary metals processing

Anticipated long-term H_2 and O_2 growth: 10%

Electronics and Performance Materials

Our electronic gases and materials and the related delivery equipment and services we provide enable the silicon and compound semiconductors and LCDs that power our digital world. And with demand for renewable energy and improved efficiency on the rise, we are leading the way supplying critical materials and turnkey services to photovoltaics manufacturers. In our performance materials end markets, our expertise in surface chemistry is being put to work to develop better-performing products and eco-friendly formulations.

2009 consolidated sales: $1.6 billion

Major end markets: silicon and compound semiconductors (ICs), thin-film transistor liquid crystal displays (TFT-LCDs), photovoltaic devices, coatings, inks, adhesives, civil engineering, personal care, institutional and industrial cleaning, mining, oil field and polyurethane production

2011 segment operating margin goal: 15%

To Our Shareholders

Dear Shareholder,

Last year as I wrote this letter, I spoke of great uncertainty and volatility as the world's financial markets and economies collapsed. A year later, as the global economy begins to recover, I reflect not on this difficult past year, but on the bright future we have because of the tough but necessary actions we took in response to the global recession. These actions helped offset some of the negative economic effects and improved our margins considerably in the second half of the year. They have positioned us to capitalize on the many growth opportunities we see in front of us and to deliver on our goals of double-digit earnings growth in 2010 and a 17 percent margin in 2011.

Difficult Year Accelerates Change

We ended the fiscal year at $8.3 billion in sales, down 21 percent from the prior year's $10.4 billion. Underlying sales declined 8 percent, with raw material and natural gas pass-through and currency accounting for 7 percent and 6 percent, respectively. Globally, our principal manufacturing markets declined by 11 percent year over year. As you look at the results, you can see the impact of the global recession on our performance. Despite these difficulties, Air Products maintained its positive cash flow and strong balance sheet, and we increased our dividend for the 27th straight year. This speaks to our financial strength and stability.

As the economy deteriorated in the past year, we accelerated cost reduction actions as part of our strategy to drive to a sustainable, low-cost structure. These actions included moving planned productivity actions forward, taking advantage of our global SAP system, rapidly replicating best practices, consolidating locations, and lowering our cost to manufacture and distribute our products. We shifted our technology spending to focus on applications that deliver growth and productivity for us and our customers. We also completed the divestiture of our U.S. Healthcare business and took significant actions to simplify our Electronics business, with the goal of improving its returns and reducing its cyclicality.

Our global cost reduction plan brought savings of $50 million in fiscal 2009, and we expect to achieve more than $150 million in 2010, with annualized savings of approximately $180 million in future years. This was a difficult undertaking, and I commend the employees of Air Products who drove these results. Without their extraordinary efforts in very challenging circumstances, we would not have been able to achieve what we delivered.

Capital expenditures were $1.5 billion in 2009, up slightly from 2008, as we continued to see good opportunities for profitable investment.

On the Horizon

As we look forward to this year, we expect to bring on more than $1 billion in new projects, principally in our Tonnage business, and we anticipate capital expenditures to be in line with 2009. While we expect modest global manufacturing growth this year, we foresee improved loading and earnings growth in our Merchant and Electronics and Performance Materials businesses. The Electronics industry should rebound from the severe downturn it experienced this past year. Our Performance Materials business should see a boost due to the various economic stimulus packages that have been initiated around the globe.

Since our founding in 1940, customers have sought out Air Products to provide productivity and efficiency benefits, quality improvements, and environmental benefits to their manufacturing operations and products. We expect these ongoing demand drivers to enable us to grow our businesses at levels greater than most underlying industrial production measures.

We see additional significant opportunities for Air Products in the energy, environment and emerging market sectors, driven by societal and regulatory trends around sustainability. For us, this results in opportunities that include hydrogen for cleaner-burning transportation fuels; oxygen for clean and efficient combustion, gasification and capture of carbon emissions; and electronic gases for thin-film photovoltaic manufacture.

For example, the global increase in demand for transportation fuels has led refiners to invest in converting their refineries to make more gasoline, diesel fuel, and jet fuel and to use heavier, more sour crude sources. Both of these factors have driven higher demand for our hydrogen, as refiners strive to meet clean air regulations and market demand. We are not stopping there. We are focused on advancing the development of hydrogen as a transportation fuel of the future with over 110 fueling stations in 16 countries worldwide. We are the leader in demonstrating its capabilities as a solution to environmental concerns.

The demand for clean energy does not end with transportation fuels. Energy providers are continuing to look for new technologies that meet consumer demands without a significant impact on the environment. Here again, we are focused on solutions that can enable cleaner-burning coal or other distressed fuels. Our work on developing carbon capture and purification technologies, coupled with our role as a leading supplier of large-scale oxygen facilities, means we are equally well positioned to participate in the growth in energy demand that will occur as the economy recovers.

Clean energy is not limited to fossil fuels; it can also come from sources such as the sun. This is another area where Air Products is a leader. In the last year, through our SunSource™ offering, we have signed more than 20 solar (or photovoltaic) accounts, bringing our total number of customers to over 60 in this new and promising market sector.

Air Products' global reach not only enables us to better serve these new markets, it also positions us well to enter new geographies. In fiscal 2009, we were successful in securing an order for the largest cold box ever designed and built by Air Products, which will be delivered to a customer in the Middle East. We also began production on one of the first "over the fence" gas supply systems in the region. This past year, we also saw the completion and start-up of our new specialty amines plant in Nanjing, China, to support our customers in the polyurethane additives and epoxy markets. Finally, we purchased German epoxy additives maker S.I.Q. to broaden our offerings to the construction and coatings market and improve the business's geographic reach into Eastern Europe, another important growth market for Air Products.

Our Goals Are in Reach

Our journey to transform Air Products to a sustainable, low-cost structure is not about abandoning our values. It is about using speed, simplicity and agility to deliver quality and innovation to our customers. We believe that the low-cost position we are building is a competitive advantage that will result in rewards for our customers, employees and shareholders through increased value and growth. By leveraging our global businesses, shared service centers, global IT systems, work processes, and continuous improvement tools such as Six Sigma, we believe we are poised to deliver higher margins and returns.

As an Air Products team, we have weathered a challenging business and economic climate in 2009. We firmly believe we have taken the steps to ensure our success as the global economy recovers and well into the future. While our outlook for economic growth in 2010 is not robust, we see the actions we have put in place, the new plants coming onstream, and the continued benefits from our cost reductions as key to achieving our goals of double-digit EPS growth and improving margins. I am confident that the employees of Air Products are up to the challenge of meeting these expectations. Thank you for your continued support and investment in Air Products.

Very truly yours,

John E. McGlade
Chairman, President and Chief Executive Officer

The amount and comparison to the prior year related to capital expenditures is considered a non-GAAP measure. Please see page IV for the comparable GAAP amount and reconciliation.

Non-GAAP Measures

(Millions of dollars, except for share data)

The Financial Highlights and Letter to Shareholders contain non-GAAP measures. These measures adjust results to exclude the effect of several items that are detailed in the Notes to the Consolidated Financial Statements. The presentation of non-GAAP measures is intended to enhance the usefulness of financial information by providing measures which the Company's management uses internally to evaluate the Company's baseline performance. Presented below is a reconciliation of reported GAAP results to non-GAAP measures.

Return on Capital Employed (ROCE)

ROCE is calculated as earnings after-tax divided by five-quarter average total capital. Earnings after-tax is defined as operating income and equity affiliates' income, after-tax, at the Company's quarterly effective tax rate. On a non-GAAP basis, operating income and taxes have been adjusted for the disclosed items detailed below. Total capital consists of total debt, shareholders' equity, and minority interest.

	2009	2008
Earnings before-tax GAAP	**$958.5**	$1,640.8
Global cost reduction plan	**298.2**	—
Customer bankruptcy and asset actions	**32.1**	—
Pension settlement	**8.0**	26.3
Earnings Before-Tax Non-GAAP	**$1,296.8**	$1,667.1

	2009	2008
Earnings after-tax GAAP	**$748.8**	$1,228.7
Five-quarter average total capital	**9,134.7**	9,560.4
ROCE GAAP	**8.2%**	12.9%

	2009	2008
Earnings after-tax non-GAAP	**$965.5**	$1,245.0
Five-quarter average total capital	**9,134.7**	9,560.4
ROCE Non-GAAP	**10.6%**	13.0%

Capital Expenditures

The Company utilizes a non-GAAP measure in the computation of capital expenditures and includes spending associated with facilities accounted for as capital leases. Certain facilities that are built to provide product to a specific customer are required to be accounted for as capital leases, and such spending is reflected as a use of cash within cash provided by operating activities.

Capital Expenditures	**2009**	2008	Change
GAAP	**$1,236**	$1,159	7%
Capital lease expenditures	**239**	196	
Non-GAAP	**$1,475**	$1,355	9%

Capital Expenditures	**2009**	2010 Forecast
GAAP	**$1,236**	$1,000 to $1,200
Capital lease expenditures	**239**	300
Non-GAAP	**$1,475**	$1,300 to $1,500

Shareholders' Information

Common Stock Information

Ticker Symbol: APD
Exchange Listing: New York Stock Exchange

Transfer Agent and Registrar:
American Stock Transfer and Trust Company
59 Maiden Lane, New York, NY 10038
Telephone: 800-937-5449
Internet: www.amstock.com
E-mail: info@amstock.com

Publications for Shareholders

In addition to this Annual Report on Form 10-K for the fiscal year ended September 30, 2009, Air Products informs shareholders about Company news through:

Notice of Annual Meeting and Proxy Statement – made available to shareholders in mid-December and posted to the Company's Web site at www.airproducts.com/invest/.

Earnings Information – shareholders and investors can obtain copies of earnings releases, Annual Reports, 10-Ks and news releases by dialing 800-AIR-6525. Shareholders and investors can also register for e-mail updates on our Web site.

Dividend Policy

Dividends on Air Products' common stock are declared by the board of directors and, when declared, usually will be paid during the sixth week after the close of the fiscal quarter. It is the Company's objective to pay dividends consistent with the reinvestment of earnings necessary for long-term growth.

Direct Investment Program

Current shareholders and new investors can conveniently and economically purchase shares of Air Products' common stock and reinvest cash dividends through American Stock Transfer and Trust Company. Registered shareholders can purchase shares on American Stock Transfer and Trust's Web site, www.investpower.com. New investors can obtain information on the Web site or by calling 877-322-4941 or 718-921-8200.

Annual Meeting

The annual meeting of shareholders will be held on Thursday, January 28, 2010.

Terminology

The term Air Products and Chemicals, Inc., as used in this Report, refers solely to the Delaware corporation of that name. The use of such terms as Air Products, Company, division, organization, we, us, our and its, when referring to either Air Products and Chemicals, Inc. and its consolidated subsidiaries or to its subsidiaries and affiliates, either individually or collectively, is only for convenience and is not intended to describe legal relationships. Significant subsidiaries are listed as an exhibit to the Form 10-K Report filed by Air Products and Chemicals, Inc. with the Securities and Exchange Commission. Groups, divisions or other business segments of Air Products and Chemicals, Inc. described in this Report are not corporate entities.

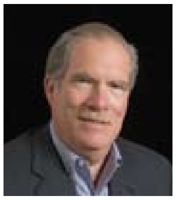
Annual Certifications

The most recent certifications by our Chief Executive Officer and Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 are filed as exhibits to our Form 10-K. We have also filed with the New York Stock Exchange the most recent Annual CEO Certification as required by Section 303A.12(a) of the New York Stock Exchange Listed Company Manual.

Additional Information

The forward-looking statements contained in this Report are qualified by reference to the section entitled "Forward-Looking Statements" on page 40 of the Form 10-K section.

Board of Directors

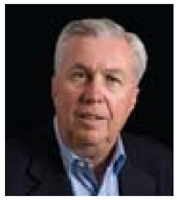


John E. McGlade
Chairman, President and Chief Executive Officer of Air Products.
Director since 2007.

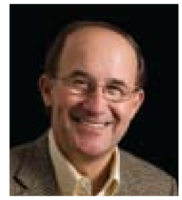
Ursula O. Fairbairn
President and Chief Executive Officer of Fairbairn Group, LLC.
Director since 1998.

Margaret G. McGlynn
Former President, Global Vaccine and Infectious Diseases Division of Merck & Co., Inc.
Director since 2005.

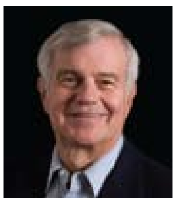
Mario L. Baeza
Founder and Controlling Shareholder of Baeza & Co. and Founder and Executive Chairman of V-Me Media, Inc.
Director since 1999.



W. Douglas Ford
Retired Chief Executive, Refining and Marketing, of BP Amoco plc.
Director since 2003.

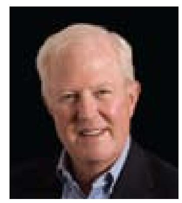


Charles H. Noski
Retired Vice Chairman of AT&T Corporation and former Corporate Vice President and Chief Financial Officer of Northrop Grumman.
Director since 2005.



William L. Davis, III
Retired Chairman, President and Chief Executive Officer of RR Donnelley.
Director since 2005.

Edward E. Hagenlocker (Presiding Director)
Former Vice Chairman of Ford Motor Company and former Chairman of Visteon Automotive Systems.
Director since 1997.

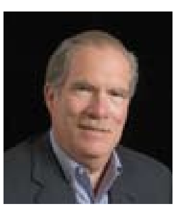


Lawrence S. Smith
Former Chief Financial Officer of Comcast Corporation.
Director since 2004.

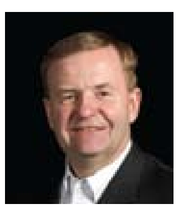
Michael J. Donahue
Former Group Executive Vice President and Chief Operating Officer of BearingPoint, Inc.
Director since 2001.

Evert Henkes
Retired Chief Executive Officer of Shell Chemicals Ltd.
Director since 2006.

Corporate Executive Committee



John E. McGlade
Chairman, President and Chief Executive Officer.



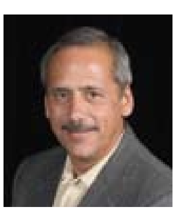
Paul E. Huck
Senior Vice President and Chief Financial Officer.

Scott A. Sherman
Senior Vice President and General Manager—Strategic Development and Execution.

Robert D. Dixon
Senior Vice President and General Manager—Merchant Gases.

Stephen J. Jones
Senior Vice President and General Manager—Tonnage Gases, Equipment and Energy.

John D. Stanley
Senior Vice President and General Counsel.



Michael F. Hilton
Senior Vice President and General Manager—Electronics and Performance Materials.

Lynn C. Minella
Senior Vice President—Human Resources and Communications.

For more information about Corporate Governance practices at Air Products, visit our Corporate Responsibility Web site at www.airproducts.com/responsibility.

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Fax 610-481-5900

Shareholder Information Service
Tel 800-AIR-6525

Corporate Secretary's Office
Tel 610-481-7067

Investor Relations Office
Nelson J. Squires, III, Director
Tel 610-481-5775

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