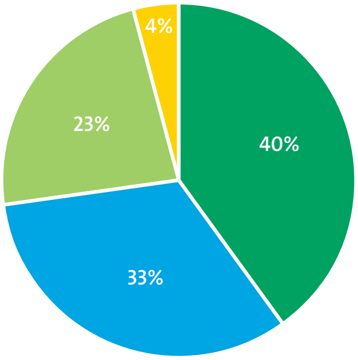
2011 ANNUAL REPORT

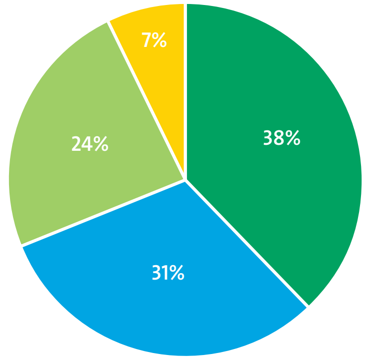
20|15 by 2015

Financial highlights



Consolidated sales by business segment

- Merchant Gases
- Tonnage Gases
- Electronics and Performance Materials
- Equipment and Energy



Consolidated sales by destination

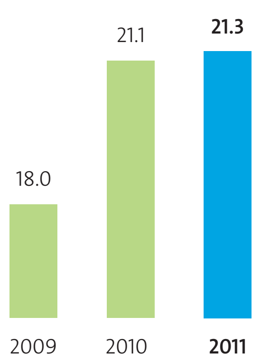
- United States
- Europe
- Asia
- Canada/Latin America

Millions of dollars, except per share	2011	2010	Change
FOR THE YEAR			
Sales	**$10,082**	$9,026	12%
Operating income (A)	**1,671**	1,485	13%
Net income from continuing operations attributable to Air Products (A)	**1,247**	1,089	14%
Capital expenditures (A)	**1,582**	1,298	22%
Return on capital employed (A)	**13.3%**	12.5%	
Return on average Air Products shareholders' equity (A) (B)	**21.3%**	21.1%	
Operating margin (A)	**16.6%**	16.5%	
PER SHARE DOLLARS			
Diluted earnings (A)	**5.73**	5.02	14%
Dividends	**2.23**	1.92	16%
Book value	**27.57**	25.94	6%
AT YEAR END			
Air Products shareholders' equity	**$5,796**	$5,547	
Shares outstanding (in millions)	**210**	214	
Shareholders	**7,900**	8,300	
Employees (C)	**18,900**	18,300	

(A) Amounts are non-GAAP measures. See pages V and VI for reconciliation to GAAP results.
(B) Calculated using income from continuing operations attributable to Air Products and five-quarter average Air Products shareholders' equity.
(C) Includes full- and part-time employees from continuing and discontinued operations.

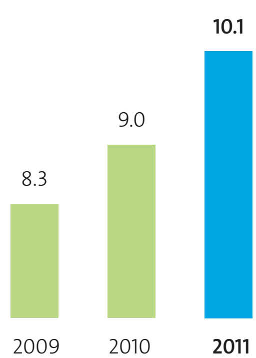
Return on Air Products shareholders' equity (A)

Percentage using income from continuing operations and Air Products shareholders' equity



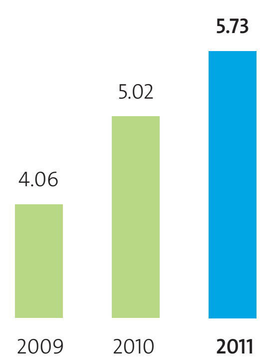
Sales

Billions of dollars



Earnings per share (A)

Dollars—diluted basis using income from continuing operations



Our businesses

Merchant Gases

Industrial and medical customers depend on our oxygen, nitrogen, argon, helium, hydrogen, and medical and specialty gases for a wide range 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. Our proprietary on-site gas generation devices (cryogenic and noncryogenic) meet customers' varying purity, pressure and flow rate requirements economically.

2011 consolidated sales: $4.1 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

Our drivers drove more than 55 million miles last year to deliver our gases and materials to our customers.

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. In our Equipment and Energy segment, we design and manufacture cryogenic and gas processing equipment for air separation, hydrocarbon recovery and purification, and natural gas liquefaction (LNG); and equipment for helium distribution. We are pioneering technologies to serve the changing needs of future industrial and energy markets.

2011 consolidated sales: $3.7 billion

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

Our U.S. Gulf Coast Pipeline delivers more than 1 billion standard cubic feet per day of hydrogen to refineries in Texas and Louisiana.

Electronics and Performance Materials

Our electronics gases, materials, services and related equipment enable silicon and compound semiconductors and LCDs to power our digital world. We also supply critical materials and services to light-emitting diode (LED) and 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.

2011 consolidated sales: $2.3 billion

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

Materials produced at our new electronic materials facility in Banwol, Korea are enabling cutting-edge portable devices, such as smart-phones and tablet computers.

To our shareholders

Dear Shareholder,

A winning strategy takes time, thought and much consideration. It must be straightforward and easily understood. Our strategy is: **winning** in the energy, environmental and emerging markets; **executing** on innovation, integration and improvement; **delivering** on revenue, margin and return goals.

Our leading positions in hydrogen, electronics and key Asian markets will drive our growth. Our focus on innovation, integration and improvement will deliver our margin and return improvement. Together, they position us to meet our 2015 financial goals, which I announced at our Investor Conference earlier this year.

Many of our customers in the industries and geographies that are important to our growth made record investments in the past year, awarding us industrial gas supply contracts critical to their projects' success. These position us well to grow in 2012 and beyond with a strong and expanding project backlog.

I believe having challenging but achievable goals and a strategy to reach them provides our team with focus and purpose for this year and the future. I remain very confident in our long-term outlook, and I expect us to deliver on our 2015 goals.

John McGlade and CEC members discuss our strategy at an employee talk.

Fiscal 2011 results

The global Air Products team again delivered a good year, with double-digit sales and earnings growth and a number of key project wins, despite slowing global economic growth in the second half of our fiscal year. Sales of $10.1 billion increased 12 percent as we delivered volume growth across our Merchant Gases, Tonnage Gases, and Electronics and Performance Materials businesses.

Operating income of $1.7 billion rose 13 percent on volume with improved performance from Electronics and Performance Materials and Tonnage Gases. Earnings per share increased 14 percent to $5.73.

We saw strong gains in operating cash flow and improved our most important measure, return on capital employed (ROCE), by 80 basis points to 13.3 percent for the year.

Capital expenditures were $1.6 billion, up 22 percent from 2010. Our strong operating cash flow allowed us to increase our dividend for the 29th straight year, complete $650 million of share repurchases and authorize an additional $1 billion for future share repurchases.

Certain amounts and comparisons to the prior year in this letter are considered non-GAAP measures. Please see pages V and VI for the comparable GAAP amounts and reconciliations.

20|15 by 2015

A Strategy for Success

Winning in energy, environmental and emerging **Markets**

Executing on innovation, integration and improvement **Actions**

Delivering on revenue, margin and return **Goals**

Generating Shareholder Value

Winning in energy, environmental and emerging markets

The global energy, environmental and emerging market trends will accelerate the growth of our business. We continue to build on our strong market positions, helping our customers improve the productivity, efficiency and sustainability of their businesses.

We announced plans to construct a new 180-mile-long pipeline connecting our existing Louisiana and Texas hydrogen systems, creating the world's largest hydrogen production and pipeline supply network. During the year we signed several large refinery contracts on the pipeline network, including supply for Valero in Port Arthur, Texas and St. Charles, Louisiana; Shell in Deer Park, Texas; Motiva in Convent, Louisiana; and Marathon in Garyville, Louisiana.

China remains one of our largest growth opportunities. To capture this growth, we are pursuing an integrated gases and materials strategy. We are increasing our resources and have relocated a member of our Corporate Executive Committee, Steve Jones, to China to drive our strategy for profitable growth. We won a new contract in the year to supply tonnage oxygen and nitrogen to Wison Clean Energy Ltd., Inc.'s coal to syngas gasification facility in Nanjing. This is our third supply contract with Wison in Nanjing. We also brought on-stream a new tonnage oxygen plant and an associated "piggy-back" merchant facility at Xingtai Steel in Hebei province.

Growth in our Electronics business continued to present great opportunities for us, as we expanded nitrogen capacity for many of the leading semiconductor and flat-panel customers in the three leading markets of Korea, Taiwan and the United States. Our cost leadership in this area has enabled us to increase the on-site portion of our electronics portfolio to approximately 25 percent, up from 12 percent in 2005. We also started up our new electronics materials facility in Banwol, Korea, announced an expansion of our NF_3 plant in Ulsan, Korea and are building the world's first on-site, large scale specialty gases plant, supplying ammonia to Anhui Sanan OptoElectronics in China.

In our Performance Materials business, we continue to bring innovative and sustainable solutions that our customers need to solve challenges in the civil engineering, personal care, coatings, inks and adhesives markets.

Executing on innovation, integration and improvement

Growth is but one of our 2015 goals. To reach our return targets, we must continue to develop a culture of improvement that delivers productivity and margin expansion. To drive cost leadership and increase market competitiveness, we will focus on actions that drive innovation, continuous improvement and the integration of our businesses.

Innovation has been a cornerstone of Air Products for over seventy years. We continue to find new ways to reduce the cost of air separation and hydrogen plants. We are also introducing new applications that make our customers more productive and successful, as well as developing new products in our Electronics and Performance Materials businesses.

Integration creates efficiency and is key to success in the industrial gas business. Our new projects in LaPorte, Texas; Chengdu, China; and Gent, Belgium are just a few examples of fully integrated on-site and merchant plants. Connecting the nearly 600 miles of the Texas and Louisiana hydrogen pipeline systems will improve supply reliability for our customers and improve returns for Air Products. And we run our business on a globally integrated model, allowing us to rapidly transfer best practices while positioning ourselves to meet our customers' needs.

We have been using Continuous Improvement (CI) tools to enable productivity for many years, and CI has contributed to our return and margin improvements. It is how we operate our business. CI is a management accountability and an individual responsibility of all employees. It is how we will deliver higher growth, improve our pricing and deliver greater cost productivity. In short, it is an important enabler to achieving our 2015 goals.

Delivering revenue, margin, and returns

While we currently see some economic uncertainty, we believe we have the momentum necessary to meet our 2015 goals. This belief is based on our strong project backlog, our continued actions to improve our business operations and market positions, and our cost management and productivity focus.

For 2012, we expect our capital spending will be in the range of $1.9 to $2.2 billion, an increase of 20 to 40 percent over 2011. The majority of this investment will be in projects underpinned by our on-site business model. We will continue to look for opportunities that complement our existing positions and build toward leadership in high growth and emerging markets. Our most recent equity affiliate investment in Saudi Arabia is one such example.

As always, I am able to look forward with confidence by looking back at the efforts of our 18,900 employees worldwide. They really are a differentiator for Air Products. They are the Air Products Advantage. My thanks to all of them for their dedication and passion in serving our customers while delivering on the expectations of our shareholders.

Very truly yours,

John E. McGlade
Chairman, President and Chief Executive Officer

Non-GAAP measures

(Millions of dollars, except per share)

The Financial Highlights and Letter to Shareholders contains 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 our management uses internally to evaluate our baseline performance on a comparable basis. Presented below are reconciliations of the reported GAAP results to non-GAAP measures.

Consolidated results	Continuing Operations			
	Operating Income	Operating Margin	Income Attributable to Air Products	Diluted EPS Attributable to Air Products
2011 GAAP	**$1,622.2**	**16.1%**	**$ 1,215.3**	**$ 5.59**
2010 GAAP	1,389.0	15.4%	1,029.1	4.74
Change GAAP	17%	70 bp	18%	18%
2011 GAAP	**$1,622.2**	**16.1%**	**$ 1,215.3**	**$ 5.59**
Net loss on Airgas transaction	48.5	.5%	31.6	.14
2011 Non-GAAP Measure	**$1,670.7**	**16.6%**	**$1,246.9**	**$ 5.73**
2010 GAAP	$1,389.0	15.4%	$ 1,029.1	$ 4.74
Net loss on Airgas transaction	96.0	1.1%	60.1	.28
2010 Non-GAAP measure	$1,485.0	16.5%	$1,089.2	$ 5.02
Change Non-GAAP	13%	10 bp	14%	14%
2009 GAAP				$3.00
Global cost reduction plan				.94
Customer bankruptcy and asset actions				.10
Pension settlement				.02
2009 Non-GAAP Measure				$4.06

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 our quarterly effective tax rate. On a non-GAAP basis, operating income and taxes have been adjusted for the impact of the net loss on Airgas transaction. Total capital consists of total debt and total equity.

	2011	2010
Earnings before-tax GAAP	**$ 1,776.5**	$1,515.9
Net loss on Airgas transaction	**48.5**	96.0
Earnings Before-Tax Non-GAAP	**$ 1,825.0**	$1,611.9

	2011	2010	Basis Point Change
Earnings after-tax GAAP	**$ 1,340.0**	$1,146.8	
Five-quarter average total capital	**10,317.2**	9,636.4	
ROCE GAAP	**13.0%**	11.9%	110

	2011	2010	Basis Point Change
Earnings after-tax non-GAAP	**$ 1,370.9**	$1,205.6	
Five-quarter average total capital	**10,317.2**	9,636.4	
ROCE Non-GAAP	**13.3%**	12.5%	80

Return on Air Products shareholders' equity

Return on Air Products shareholders' equity is calculated as net income divided by five-quarter average Air Products shareholders' equity. On a non-GAAP basis, net income has been adjusted for the impact of the disclosed items detailed below.

	2011	2010	2009
Five-quarter average Air Products shareholders' equity	**$5,842.0**	$5,173.9	$4,823.0
Income from continuing operations – GAAP	**$ 1,215.3**	$1,029.1	$ 639.9
Net loss on Airgas transaction	31.6	60.1	—
Global cost reduction plan	—	—	200.3
Customer bankruptcy and asset actions	—	—	21.0
Pension settlement	—	—	5.0
Income from Continuing Operations – Non-GAAP	**$ 1,246.9**	$1,089.2	$ 866.2
Return on Air Products Shareholders' Equity – GAAP	**20.8%**	19.9%	13.3%
Return on Air Products Shareholders' Equity – Non-GAAP	**21.3%**	21.1%	18.0%

Capital expenditures

We utilize a non-GAAP measure in the computation of capital expenditures and include spending associated with facilities accounted for as capital leases and purchases of noncontrolling interests. Certain contracts associated with facilities that are built to provide product to a specific customer are required to be accounted for as leases, and such spending is reflected as a use of cash within cash provided by operating activities. Additionally, the purchase of noncontrolling interests in a subsidiary is accounted for as an equity transaction and will be reflected as a financing activity in the consolidated statement of cash flows.

	2011	2010	Change
Capital expenditures – GAAP measure	**$1,408.3**	$1,133.8	24%
Capital lease expenditures	**173.5**	122.6	
Noncurrent liability related to purchase of shares from noncontrolling interests	**—**	42.0	
Capital Expenditures – Non-GAAP Measure	**$1,581.8**	$1,298.4	22%

	2012 Forecast
Capital expenditures – GAAP measure	$1,600 to $1,800
Capital lease expenditures	300 to 400
Capital Expenditures – Non-GAAP Measure	$1,900 to $2,200
Change GAAP	14%–28%
Change Non-GAAP	20%–39%

Shareholders' information

Common stock information

Ticker Symbol: APD
Exchange Listing: New York Stock Exchange

Transfer Agent and Registrar:
American Stock Transfer and Trust Company
6201 15th Ave., Brooklyn, NY 11219
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, 2011, 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 website at www.airproducts.com/investors/shareholder-services/annual-meeting-materials.

Earnings information—shareholders and investors can obtain copies of earnings releases, Annual Reports, 10-Ks and news releases by visiting www.airproducts.com/investors/overview. Shareholders and investors can also register for e-mail updates at that website.

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 website, www.investpower.com. New investors can obtain information on the website or by calling 877-322-4941 or 718-921-8200.

Annual meeting

The annual meeting of shareholders will be held on Thursday, January 26, 2012.

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 42 of the Form 10-K section.

Board of Directors

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

Chadwick C. Deaton
Chairman and Chief Executive Officer, Baker Hughes Inc.
Director since 2010.

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

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

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

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

Susan K. Carter
Executive Vice President and Chief Financial Officer of KBR, Inc.
Director since 2011.

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

Margaret G. McGlynn
President and Chief Executive Officer of International AIDS Vaccine Initiative.
Director since 2005.

William L. Davis, III (Presiding Director)
Former Chairman, President and Chief Executive Officer of RR Donnelley & Sons Company.
Director since 2005.

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

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

Corporate Executive Committee

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

John Marsland
Senior Vice President and General Manager—Merchant Gases.

John D. Stanley
Senior Vice President and General Counsel.

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

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

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

Corning Painter
Senior Vice President—Corporate Strategy, Technology and Supply Chain.

For more information about corporate governance practices at Air Products, visit our Corporate Responsibility website at www.airproducts.com/responsibility.

For more information, please contact us at:

Corporate Headquarters
Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
T 610-481-4911
F 610-481-5900

Corporate Secretary's Office
T 610-481-7067

Investor Relations Office
Simon Moore, Director
T 610-481-5775

tell me more
www.airproducts.com