

## For Tomorrow®

# **Environmental Investing**

Simon Gottelier, Investment Manager – Listed Equities Impax Asset Management Ltd.







You should consider a fund's investment objectives, risks and charges and expenses carefully before investing. For this and other important information, please obtain a fund prospectus by calling 800.767.1729 or visiting www.paxworld.com. Please read it carefully before investing. Distributor: ALPS Distributors, Inc., Member: FINRA.

Equity investments are subject to market fluctuations, and the Fund's share price can fall because of weakness in the broad market, a particular industry, or specific holdings. Emerging market and international investments involve risk of capital loss from unfavorable fluctuations in currency values, differences in generally accepted accounting principles, economic or political instability in other nations or increased volatility and lower trading volume.

PAX002031 (12/12)



### **Potential Drivers Behind Environmental Markets**

- The trajectory of global economic growth is likely unsustainable
  - Rising population and standards of living
  - Pressure on scarce natural resources and weak infrastructure
  - Pollution curtailing growth
- Governments are increasingly focused on environmental issues
  - Target market sizes
  - Mandatory capital expenditure
  - Emissions limits
- Regulations may be facilitated by increasingly cost-effective technology
  - Technology advances
  - Economies of scale
  - New business models
  - Globalization

#### **Example:**

"Southern China's rain is close to the pH level of balsamic vinegar" 1

#### Example:

India targeting 10% of power from renewables by 2015<sup>2</sup>

#### **Example**:

Solar cell prices have declined >30% from \$1.2 per watt to below \$0.8 per watt in 2 years <sup>3</sup>

<sup>1</sup> CLSA <a href="https://www.clsa.com/assets/files/reports/CLSA Quarterly 080417.pdf">https://www.clsa.com/assets/files/reports/CLSA Quarterly 080417.pdf</a>, 3/31/08. (page 73)

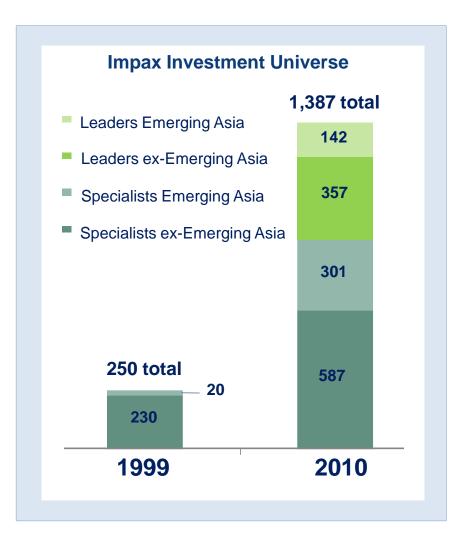
<sup>2</sup> India's National Action Plan on Climate Change <a href="http://cleantechnica.com/2010/07/25/indias-renewable-energy-generation-capacity-could-reach-48-gw-by-2015/">http://cleantechnica.com/2010/07/25/indias-renewable-energy-generation-capacity-could-reach-48-gw-by-2015/</a>, July 25, 2010

<sup>3</sup> PV Insights, BofA Merrill Lynch Global Research - P.7 of 'July electronic material sales: Overall slump deepening - August 8th, 2011 – Takashi Enamoto ' (data between July 1st 2009 and July 1st 2011)



## **Environmental Markets Sector Overview**

- Approximately \$500 billion in annual revenues\*
- Approximately 1,400 companies in the sector\*
- New market entrants (54 Initial Public Offerings (IPOs) and 34 Merger and Acquisition (M&A) transactions in 2010)\*
- Most standard economic sectors represented (bias towards Industrials, Utilities, Energy)\*
- Full range of early cyclical, late cyclical and defensive stocks represented



<sup>\*</sup> Based on Impax's proprietary environmental markets database which tracks companies, sales, new market entrants and Merger and Acquisition (M&A), earnings and sectors based on Bloomberg data, December 2010.



## FTSE Environmental Markets Classification: 21 Sub-Sectors

Water



#### **Water Infrastructure & Technologies**

- Water Infrastructure
- Water Treatment Equipment
- Water Utilities

#### **Pollution Control**

- Pollution Control Solutions
- Environmental Testing & Gas Sensing

#### **Energy**



#### **Renewable & Alternative Energy**

- Renewable Energy Developers
- Solar Energy Generation Equipment
- Wind Power Generation Equipment
- Biofuels
- Other Renewables Equipment

#### **Energy Efficiency**

- Power Network Efficiency
- Industrials Energy Efficiency
- Buildings Energy Efficiency
- Transport Energy Efficiency

#### Waste



#### **Waste Management & Technologies**

- Waste Technology Equipment
- Value added Waste Processing
- Hazardous Waste Management
- General Waste Management

#### **Environmental Support Services**

- Environmental Consultancies
- Carbon & Other Environmental Assets Trading
- General Environmental



## **Environmental Markets Characteristics**

Beta: 1.2<sup>1</sup>

Tracking error: 6.5%<sup>2</sup>

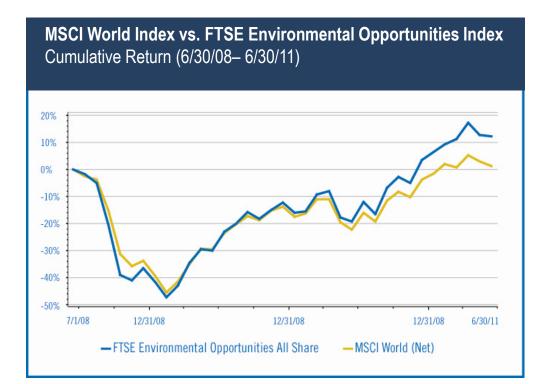
Information ratio: 0.5<sup>3</sup>

- 2011 valuations appear attractive
  - Price Earnings (PE) ratio 12.9x (forward 12 months)
  - Expected Earnings Per Share (EPS) growth 15.5% on an annualized basis based on Impax's proprietary universe

Source: FactSet, WM Reuters

**Price Earnings Ratio:** A valuation ratio of a company's current share price compared to its per-share earnings.

**Expected Earnings Ratio:** The portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of a company's profitability. **Beta:** A measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. Beta is used in the capital asset pricing model (CAPM), a model that calculates the expected return of an asset based on its beta and expected market returns



FTSE Environmental Opportunities All Share, 3 year data in USD as at 6/30/11. MSCI index is total net return, FTSE index is total return (source: FactSet).

Risk statistics versus MSCI World Index over 3 years in USD as at 6/30/11.

Performance data quoted represent past performance, which does not guarantee future results. Investors cannot invest directly in an Index.

<sup>&</sup>lt;sup>1</sup> Beta coefficient measures an investment's relative volatility or impact of a perunit change in the independent variable (market) on the dependent variable (portfolio), holding all else constant.

<sup>&</sup>lt;sup>2</sup> A measure of how closely a portfolio follows the index to which it is benchmarked.

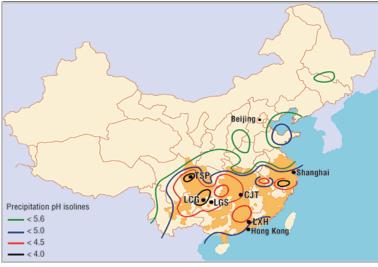
<sup>&</sup>lt;sup>3</sup> A measure of the risk-adjusted return of a financial security (or asset or portfolio).



# **No Respite for the Planet**











## **Energy: Renewable & Alternative Energy**

- Fossil fuel supplies have fallen short of demand, which has led to price pressures and volatility
- Costs of renewable energy technologies are projected to fall<sup>1</sup>
- Withdrawal of nuclear capacity
- Low carbon technologies have potential to provide 70% of global electricity supply by 2030 (30% in 2005)<sup>2</sup>



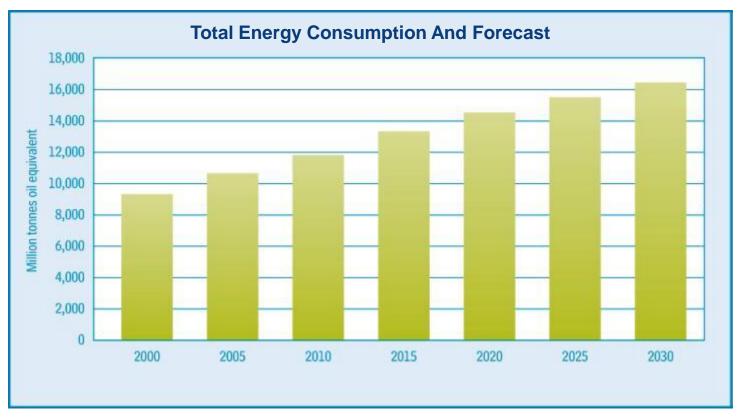
Example: Solar cell prices have declined >30% from US\$1.2 per watt to below US\$0.8 per watt in 2 years (between July 1<sup>st</sup> 2009 and July 1<sup>st</sup> 2011)

Source: PV Insights, BofA Merrill Lynch Global Research – P.7 of 'July electronic material sales: Overall slump deepening – August 8<sup>th</sup>, 2011 – Takashi Enamoto'

<sup>2</sup> McKinsey Global Institute. Pathways to a Low-Carbon Economy: Version 2 of the Global Greenhouse Gas Abatement Cost Curve, page 12, January 2009.



## **Energy: Renewable & Alternative Energy\***



<sup>\*</sup> Source: BP Energy Outlook, 2030, January 19, 2011

Energy consumption comprises commercially traded fuels only. Excluded, therefore, are fuels such as wood, peat and animal waste, which though important in many countries, are unreliably documented in terms of consumption statistics. Includes oil, biofuels, gasto-liquids and coal-to-liquids. Includes wind power, solar electricity and other renewables.

Projections cannot guarantee future results.



## **Energy: Energy Efficiency**

- Historically performed well during periods of economic recovery
- Cost effective: often characterized by short payback periods and/or negative abatement costs
- Potential to reduce annual growth in global electricity demand from 2.7% in 2005 to approximately 1.5% in 2030<sup>1</sup>
- Potential investment opportunity includes light emitting diodes (LEDs) 80% of total lighting market by 2020<sup>2</sup>

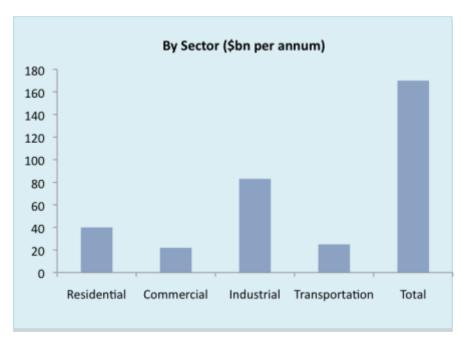
<sup>1</sup> McKinsey Global Institute. *Pathways to a Low-Carbon Economy: Version 2 of the Global Greenhouse Gas Abatement Cost Curve,* page 12, January 2009.

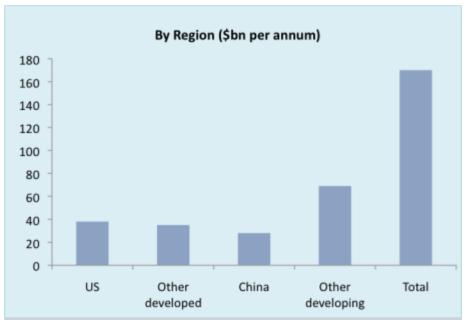
<sup>2</sup> Koninklijke Philips Electronics N.V. Impax conversation with Company IR, London, February 28, 2011



## **Energy: Energy Efficiency**

An additional \$170 billion per year is needed to capture the Global Energy Efficiency Opportunity – McKinsey & Company\*





As of February, 2008

As of February, 2008

<sup>\*</sup>SOURCE: McKinsey & Company – 'The Case for Investing in Energy Productivity, February 2008', & 'Pathways to a Low-Carbon Economy - Version 2 of the Global Greenhouse Gas Abatement Cost Curve, January 2009', International Energy Agency, Energy Technology Perspectives 'Scenarios and Strategies to 2050', January 2009.



## Water: Water Infrastructure & Technologies and Pollution Control

- Only approximately 1% of water available for human consumption<sup>1</sup>
- 50% of world's population predicted to be living in areas of high water stress by 2030<sup>2</sup>
- World Bank estimates \$180 billion water infrastructure investment needed each year to 2030<sup>3</sup>
- Emerging markets need basic water infrastructure, developed markets have challenge of replacing ageing systems
- Not restricted to water: approximately 400,000 deaths in China every year from air pollution<sup>4</sup>

<sup>1</sup> World Water Development Report 2, 2006

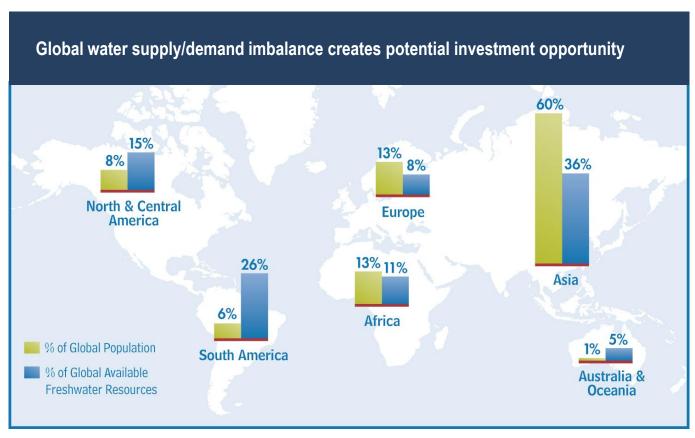
<sup>2</sup> U.S. Environmental Protection Agency presentation, page 4 - http://www.epa.gov/osw/rcc/web-academy/2011/pdfs/wijs1-11.pdf.

World Water Development Report 2, 2006. http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTWAT/0,,contentMDK:21633289~menuPK:4620510~pagePK: 210058~piPK:210062~theSitePK:4602123,00.html.

<sup>4</sup> Chinese Academy of Environmental Planning. The Updated Progress and Perspective of Environmental Economics in China, page 3, 56. August 9, 2007.



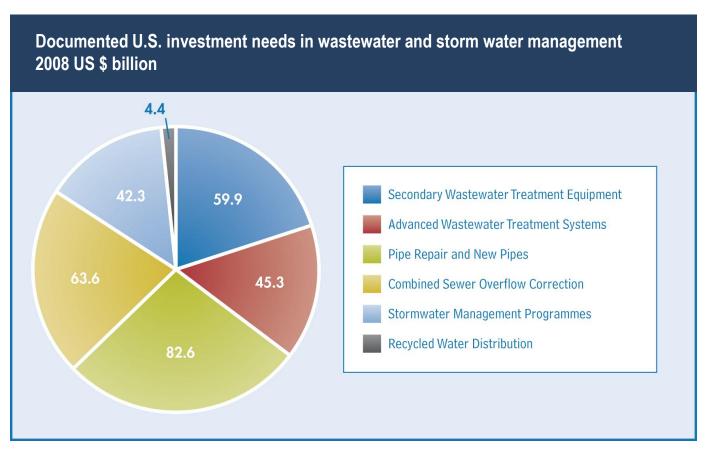
## Water: Water Infrastructure & Technologies and Pollution Control



Source: Water availability per capita, World Water Development Report 2, as of March 22, 2006



## Water: Water Infrastructure & Technologies and Pollution Control



Source: Environmental Protection Agency survey conducted 2/08 - 4/09, published May, 2010, covering the forward-looking 20-year period



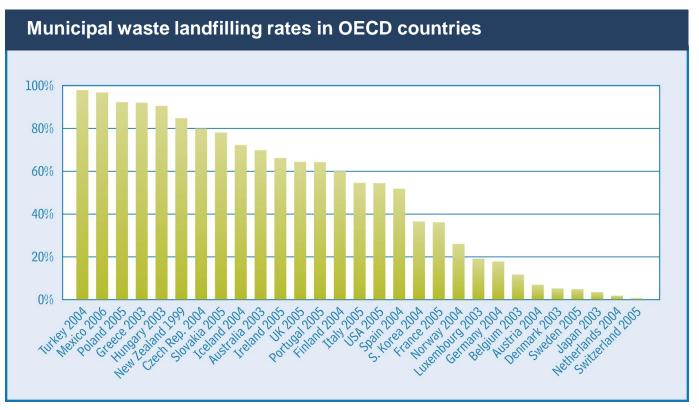
## Waste: Management & Technologies and Environmental Support Services

- Estimated 10 million tons of waste produced every day<sup>1</sup>
- Commodity price rises expected to drive additional rates of recycling
- Resurgence of Merger and Acquisition (M&A) activity should boost performance
- Consultancies are potential beneficiaries of secular trend towards more stringent environmental regulation

<sup>1</sup> Veolia Environmental Services synthesis, From Waste to Resource: An Abstract of World Waste Survey 2009, page 11, paragraph 2. http://www.scrap-ex.com/pdfs/ news/from\_waste\_to\_resource\_report\_veolia.pdf , November 13, 2009.



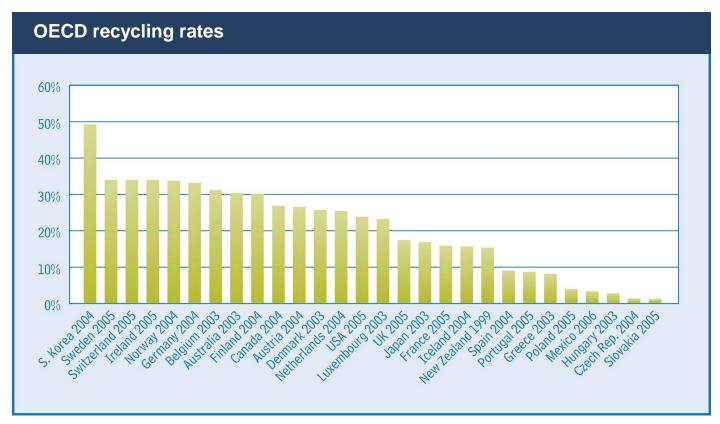
## **Waste: Management & Technologies and Environmental Support Services**



Source: OECD Environmental Data Copendium 2006.



## **Waste: Management & Technologies and Environmental Support Services**



Source: OECD Environmental Data Compendium 2006 and

http://stats.oecd.org/index.aspx?queryid=26646



## **Global Policy Developments:**



Possible bill on new energy vehicles

**United States** 



**European Union** 

energy and 20% improvement \$284 billion needed to update grids by 2020\*





Germany

**Energy Concept sets out 10**step plan for increasing offshore wind and grid development





**South Korea** 



China

- 12th 5 Year Plan to target the renewables energy, electric vehicle, industrial energy efficiency and light emitting diode ("LED") sectors
- Total investment of \$770 billion expected in low carbon energy up until 2020
- 2015 targets include:
  - 16% for reduction in energy intensity/GDP
  - 30% reduction in water use per unit of industrial value added
  - 10% reduction in ammonia nitrogen and nitrogen oxide emissions



India

National Urban Renewal Mission allocated 70% of spending for water supply/infrastructure



Focus on off-shore wind and buildings energy efficiency

<sup>\*20%</sup> energy efficiency savings in 2020 based on business as usual projections from 2007. FX rate calculated from Bloomberg on Sept 2, 2011.



## **Investing in Environmental Markets: An opportunity too timely to ignore?**

- Historically uncorrelated environmental sectors drivers in energy, water and waste
- Historical outperformance of traditional market indices
- Environmental markets comprise 21 sub-sectors\*
- We believe market complexity offers potential rewards but requires specialist expertise
- We believe current valuations are attractive and that earnings expectations are reasonable
- We believe there is potential for continued M&A activity in the sector



#### Pax World Global Green Fund

## **Objective**

Long-term growth of capital

## **Investment Strategy**

Seeks to invest in innovative companies whose businesses and technologies focus on three key areas: renewable and alternative energy and energy efficiency; water quality and pollution control; and waste management and environmental services.

# Portfolio Management Team – Sub-Adviser: Impax Asset Management Ian Simm, Co-Portfolio Manager (Since 2008) Bruce Jenkyn-Jones, Co-Portfolio Manager (Since 2008)

# **Inception Date** 3/27/08

An investment in the Fund involves risk, including loss of principal.



## **Pax World Investment Solutions**



## A family of no load mutual funds

Balanced Fund

Growth Fund

Small Cap Fund

High Yield Bond Fund

International Fund

Global Women's Equality Fund

Global Green Fund



#### Multi-manager asset allocation funds powered by Morningstar Associates

Aggressive Growth Portfolio

Growth Portfolio

Moderate Portfolio

Conservative Portfolio



# ETFs driven by a Sustainable Investing Approach

Pax MSCI North America ESG Index ETF (NASI)

Pax MSCI EAFE ESG Index ETF (EAPS)

- Pax World had \$2.7 billion assets under management as of 6/30/11
- Separately managed accounts are offered to institutional investors and high net worth investors

ESG Managers® Portfolios and ESG Shares® are new and have a limited operating history. ESG Managers® Portfolios are multi-manager funds, which are a mix of underlying Sleeve Subadviser portfolios. The Funds' allocations may change due to market fluctuations and other factors. The Morningstar name and logo are the property of Morningstar, Inc. Morningstar is not affiliated with Pax World Management LLC. ALPS Distributors, Inc. is not affiliated with Morningstar Associates, LLC.

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ALPS is the distributor for the Pax World Funds, ESG Managers® Portfolios and ESG Shares®



## **Biographies**



#### **Bruce Jenkyn-Jones, Co-Portfolio Manager**

Bruce is the Co-Portfolio Manager of the Global Green Fund. He has been responsible for the management of the Global Green Fund since its inception in 2008 and has been a Portfolio Manager with Impax since 1999. He holds a Master's of Business Administration from IESE (Barcelona), a Master's of Science in environmental technology from Imperial College and a degree in chemistry from Oxford.



### Ian Simm, Co-Portfolio Manager

Ian is the Co-Portfolio Manager of the Global Green Fund. He has been responsible for the management of the Global Green Fund since its inception in 2008, and is the Founder and Chief Executive of Impax Asset Management. He holds a first class honors degree in Physics from Cambridge University and a Masters in Public Administration from Harvard University.



## Simon Gottelier: Investment Manager – Listed Equities

Simon has worked at Impax since 2004, co-managing the Environmental Leaders and Water Strategies and has worked on the Global Green Fund portfolio since its inception in 2008. He has an honours degree in Modern Languages from the University of Bristol.



IMPAX)

Impax Asset Management Ltd. is the sub-adviser of the Global Green Fund, and is a wholly-owned subsidiary of Impax Asset Management Group plc, which is publicly traded on the London Stock Exchange. It has principal offices at Pegasus House, 37-43 Sackville Street, W1S 3EH, London (UK). Impax Asset Management Ltd. is the manager or sub-adviser of over twenty funds and accounts that invest globally in the stocks of companies that are active in "green markets," particularly in the renewable and alternative energy, energy efficiency, water infrastructure and technologies, pollution control, waste management and technologies and environmental support services sectors.



## Biography



## Julie Gorte, Ph.D., Senior Vice President for Sustainable Investing

Julie oversees environmental, social and governance-related research on prospective and current investments as well as Pax's shareholder advocacy and work on public policy advocacy. Dr. Gorte serves on the boards of CERES, the Center for a New American Dream and the Pinchot Institute. She has served as the co-chair of the Asset Management Working Group of the United Nations Environment Program Finance Initiative and is a member of the Forest Economics and Policy Program's advisory panel.

#### **Professional Experience**

- Pax World Management LLC Senior Vice President for Sustainable Investing
- Calvert Group Chief Social Investment Strategist
- Northeast-Midwest Institute Senior Policy Analyst
- Environmental Protection Agency Program Manager for Technology Analysis

## **Degrees and Designations**

- Master of Science and Doctorate in Resource Economics Michigan State University
- Bachelor of Science in Forest Management Northern Arizona University



# **THANK YOU**



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## **Learn More about Environmental Investing**

## Download our 4 white papers:

<u>www.paxworld.com</u> (Global Green Fund Product Page)

