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investor events

Clean Investor 2009

**Investing in sustainable
themed funds: the new
generation of returns?**

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The new generation of returns

Welcome to Clean Investor 2009, the second in a series of 'Responsible Investor Events', which aim to bring top-level speakers from asset owners, asset managers and advisers together for targeted, practical discussion on pertinent themes of sustainable and responsible investment.

We believe Clean Investor 2009 could not come at a more important juncture. Governments around the world are ramping up initiatives to introduce or develop fiscal stimulus packages – the so-called 'green new deals' – that will underpin attempts to usher in a new era of low-carbon energy in line with recommendations by the Intergovernmental Panel on Climate Change (IPCC).

The Copenhagen summit in December this year, which aims to find a successor to the Kyoto Protocol, will be another important step on this regulatory journey. These incentives are accompanying the growing numbers of companies developing products and modifying businesses around the nascent markets in clean technology, energy efficiency, renewable energy, recycling and natural resources depletion. The third vital leg in the promotion of a low-carbon economy is investment via venture and growth capital and listed markets; all sectors that have seen a dramatic rise in the numbers of funds being launched and targeted at investors.

If international targets for greenhouse gas reductions, renewables and efficiency increases are to be met, investment is expected to reach \$450 billion a year by 2012, rising to more than \$600 billion a year from 2020, according to the United Nations. Those targets necessarily imply much greater shared public/private investment in long duration themes – areas that appear to fit well with the time horizons of pension funds, insurance companies and foundations. Investors currently buffeted by the market crisis are also increasingly examining the potential for the 'next generation' of sustainable industry and energy production in the pursuit of returns.

This second Responsible Investor 'educate and debate' conference on sustainable themed funds will hear from institutional investors active in the field as well as investment practitioners from the inter-governmental, private equity and fund management fields. For the biggest global institutional investors, green or sustainable themed investing is now a viable strategy for investment returns. The avant-garde of the world's pension funds and foundations (USS, APG, CalPERS, ATP) have already allocated important levels of assets to the sector. But there is much for investors to learn and knowledge to share. Many of those funds are presenting here at Clean Investor 2009 and will explain and discuss their rationale for doing so. Large inter-governmental organisations such as the World Bank and International Finance Corporation (IFC), as well as bold initiatives such as the Prince of Wales-led P8 pension fund group, are talking about ways to structure joint investment products that could channel billions of dollars into the fight against climate change. We are delighted to have representatives of the IFC and the P8 here at Clean Investor to outline exactly how these initiatives could work.

Clean Investor 2009 will centre on the latest market propositions from investment managers, if and how investors should allocate to themed environmental funds and key questions such as risk, performance, regulation and government support. We believe that Clean Investor 2009 is part of a necessary and timely discussion for institutional investors.



Hugh Wheelan,
Editor and co-founder, Responsible Investor
(www.responsible-investor.com)

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Clean Investor 2009

Investing in sustainable themed funds: the new generation of returns?

Wednesday 6th May 2009, Four Seasons Canary Wharf, London

Conference format

Responsible Investor Events start with the premise that the more time available for audience participation the better! Most sessions will last for 45 minutes and will include a moderator and two speakers. Each speaker will be asked to present for 10–15 minutes allowing 15–25 minutes for comments, debate, questions and answers.

The programme is subject to change. Topics may be added or amended.

8.15–9.00

Registration and breakfast

9.00–9.15

Chairman: Tom Whitehouse, CEO, Carbon International

What do the credit crisis and mooted 'green' fiscal stimulus programmes by global governments mean for environmental investing and where do institutional investors fit in?

9.15–9.45

Keynote address

What is the latest thinking on public/private partnership for environmental investment?

Why is it crucial to the financing of climate change and why is investment in developing countries key to the fight against global warming?

Greg Radford, director, environment and social development, International Finance Corporation (IFC), part of the World Bank Group

9.45–10.30

Environmental investing and the institutional investment arena

How sensitised are pension funds and their trustee boards/management to environmental issues and where are they looking to invest?

Mike Taylor, chief executive, London Pension Fund Authority

What are the emerging environmental technology (or clean tech) market definitions, standards and benchmarks? How should institutional investors define, measure and approach this market?

Will Oulton, director, responsible investment, FTSE Group

10.30–11.00

Coffee break

11.00–11.45

Clean technology – Renewable energy

What are the risk/return and political/environmental factors that make clean tech/renewables funds viable long-term investments. How have USS's investments performed to date and what are the long-term expectations?

David Russell, co-head, responsible investment, Universities Superannuation Scheme

Steve Falci, vice president sustainable investment, KBC Asset Management Ltd

Comments from delegates at Responsible Investor's first conference in Amsterdam, November 2009

"The short one-day format was very effective. Presentation topics were clear and presenters efficiently addressed the issues assigned to them"
Toni Symonds, chief consultant, California State Assembly Committee on Jobs, Economic Development, and the Economy



- 11.45–12.30 Strategy: allocating assets to environmental themed funds**
Should institutional investors look at public or private equity markets for environmental themed investments? How can investors best choose managers, and benchmark them?
Howard Pearce, head of environmental finance and pension fund, Environment Agency Pension Fund
Andrew Musters, managing partner, Robeco Private Equity
- 12.30–13.30 Lunch**
- 13.30–13.45 Guest Speaker: Dr Aled Jones**, deputy director, University of Cambridge Programme for Sustainability Leadership, and co-director, HRH Prince of Wales's Corporate Leaders Group on Climate Change
- 13:45–14.30 Cutting edge environmental fund investing**
The cutting edge of themed environment funds, hedge fund and emerging markets strategies such as agribusiness. Where would investors like to see new environmental funds/ideas and why?
Rob Lake, head of sustainability, APG Investments, Netherlands
Brooks Preston, principal, Wolfensohn & Company
- 14.30–15.15 Investing against natural resources depletion (water and waste funds)**
Why should water/waste themed funds be on the institutional radar? What are their characteristics and how can investors differentiate between them?
Jean Ryan, investment specialist, environmental investment, KBC Asset Management Ltd
Jvan Gaffuri, senior equity analyst, Sustainable Asset Management
- 15.15–15.45 Coffee break**
- 15.45–16.30 Measuring the carbon footprints of portfolios – carbon optimised funds and indices**
David Blitzler, managing director and chairman of the Index Committee, Standard & Poor's
Neil McIndoe, head of environmental finance, Trucost
- 16.30–17.15 Structuring forestry and green investments within portfolios**
How ATP structures climate change and forestry investment into its inflation protection programme
Finn Søndergaard Petersen, beta portfolio manager, ATP
Why should investors target sustainable forestry investment, what are the latest initiatives in the space and how does it differ from ecosystems investment?
Mark Campanale, Four Elements Capital
- 17.15–17.30 Chairman's closing remarks**
- 17.30–19.00 Post-conference drinks reception for speakers and delegates**

"I was very impressed with the content, which was both thought-provoking and forward-thinking. Responsible Investor clearly has an excellent grasp on where the market for ESG investing is heading and what are the major challenges and opportunities ahead of us. I would highly recommend attending this event to colleagues"

Darragh Gallant, head of client services,
KLD Research & Analytics

"The conference was distinctive in being very practically oriented. Good range of speakers"

Helena Mahoney, client relationship manager,
Hermes Equity Ownership Services

From green New Deal to new green investment

Despite the slump, the content of economic stimulus programmes and the imperatives of climate change mitigation mean clean technology remains a rewarding sector for investors
By Hugh Wheelan



According to a report published by HSBC in February this year, *A Climate for Recovery*, from 20 economic recovery plans published by then to combat the credit crisis, 15% of the assets (or \$432bn) of a total \$2.8trn in fiscal measures could be associated with investments consistent with stabilising and subsequently cutting global emissions of greenhouse gases.

US President Barack Obama's landmark election pledge to create 5m jobs by investing in clean tech as one of the centrepieces of his planned economic stimulus, has notably made the lion's share of headlines globally. The Obama administration has committed to bringing greenhouse gas emissions back to 1990 levels by 2020, en route to an 80% cut by 2050. In addition, it has pledged to debate the introduction of a 'cap-and-trade' system similar to the EU Emissions Trading System (ETS). In October 2008, the US Congress approved the Emergency Economic Stabilisation Act, the centrepiece of which was the \$700bn rescue package for the financial sector. Alongside the Troubled Assets Relief Program (TARP), the act contained \$185bn of tax cuts and credits, including \$18.2bn for clean energy. In addition, an estimated \$94bn has been set aside within spending plans for renewables, building efficiency, low-carbon vehicles, mass transit, grids and water.

However, China, estimated to be the world's biggest producer of carbon dioxide emissions today, is not far behind in the green stimulus stakes. In 2008, it launched a RMB4,000bn (\$584bn) package, of which almost 40% is scheduled to be allocated to 'green' themes, ac-

ording to reports, most notably in infrastructure spend such as improved rail transport, electricity grids and water, along with dedicated spending on environmental improvement.

Elsewhere in Asia, South Korea has taken bold steps with a dedicated \$38bn Green New Deal announced by prime minister Han Seung-soo that allocates more than 80% of the money to environmental themes. Japan has also pledged to create 1m new jobs through green infrastructure initiatives and has set a 2020 target to create a green business sector worth \$1 trillion employing 2.2m people.

In Europe, the EU's 27 member states have agreed to targets of a 20% boost in renewable fuel use by 2020, while the UK has pledged to cut its CO₂ emissions by 80% by 2050.

To give an idea of how much these various tax stimuli and spending plans have fed into actual policy, research earlier this year by DB Advisors said it had counted 250 new climate change-related policy developments globally since July 2008. These, it said included 54 new policies in the US, 106 in the EU and 24 in China. Investing in climate change-related themes is an area where thorough knowledge of changing regulation and fiscal support is key. The report said the largest recipients of green economic stimuli in the US were investment in mass transit (\$17.7bn), energy efficiency (\$16.4bn) and water (\$13bn) and, in the EU, clean autos (\$18.9bn), energy efficiency (\$17.2bn) and mass transit (\$13.6). In China, the main recipients had been smart grid technology (\$70bn estimated), renewables (\$29bn estimated) for power generation, and water (\$2.9bn estimated). DB Advi-

sors said the largest barrier to investment in new technologies would be constraints in the credit markets and called on governments to develop loan guarantee programmes to scale up proven technologies.

HSBC estimates that at least half of the \$432bn it sees outlined for green economic recovery plans could be available to companies in 2009. It said the core element of most of the stimulus plans would be allocated to a suite of green infrastructure options, notably buildings, grids, rail and water. As a result, it said the construction and capital goods sectors would likely be the major beneficiaries, along with an indirect effect for power, rail and water utilities.

In terms of related opportunities, themes such as water and sanitation also look likely to continue to attract investors based on tangible public policy pushes. The United Nations aims to halve the 1bn people it estimates live worldwide without access to safe drinking water by 2015 as part of its Millennium Development Goals. In addition, the European Water Quality Directive provides for drinking water to reach a certain standard by 2015. Energy efficiency and waste management are also big themes on the back of similar legislation drivers. Companies linked to the production, advisory or sales processes in these areas look like good, durable investment bets.

What does all this mean for institutional investors? A McKinsey Global Institute report, released at an Investor Summit on Climate Risk, hosted by the United Nations Foundation in March 2008, claimed that major investments over the next decade in energy productivity could earn double-digit rates of return for investors, cut global energy demand growth by 50% and achieve up to half of the reductions of greenhouse gas emissions the Intergovernmental Panel on Climate Change says is required to prevent the world's mean temperature from increasing by more than 2°C.

Additionally, a recent survey by New Energy Finance, the renewables research group, found that just under half (49%) of 106 institutional investors surveyed said they planned to increase their funding of clean energy compared with 12 months ago. Nonetheless, it said global investment in clean energy fell in the second half of 2008 and first three months of 2009, while total investment in 2008 was about \$150bn.

The world's largest pension funds, including ABP in the Netherlands, CalPERS in the US and ATP in Denmark, are already convinced that climate change-related themes will be a significant part of future allocations and have made sizeable initial investments (see over page)

However, in its report, HSBC said one key question on the prospects of success for government stimuli worldwide would be their effectiveness in mobilising large amounts of private investment. Responsible Investor has reported on initiatives within the International Finance Corporation and the P8 group of pension funds led by Prince Charles to create viable, jointly structured investment vehicles that could be used to simultaneously combat climate change and promote sustainable growth in developing countries. Other investor initiatives such as the Institutional Investors Group on Climate Change (IIGCC), aim to feed into the political process ahead of inter-governmental talks in Copenhagen in December this year, where a global successor treaty to the Kyoto Protocol, which runs out in December 2012, could be signed. Its 'Investor Statement on the Global Agreement on Climate Change', co-ordinated with the US-based Investor Network on Climate Risk and the Australia/New Zealand Investor Group on Climate Change and signed by some 150 investors with over \$9trn in assets, outlines how a new international treaty could support investment into a low-carbon economy.

Just how promising environmental and renewable energy investments could be, and in what time frame, depends heavily on how fast governments shift to greener policies and how financial incentives tap latent support amongst committed or interested large pools of long-term institutional capital. **RI**

Responsible Investor's recent coverage of institutional investment in the climate change space

24 March 2009: ATP seeds €400m sustainable forestry investment programme
ATP, the Dkr355bn (€48bn) Danish public pensions giant, is to invest Dkr3bn (€400m) in a strategic programme of sustainable forestry purchases as part of its first foray into the asset class and a broader focus on climate change investments.
www.responsible-investor.com/home/article/atp_forests/

20 March 2009: Danish pensions giant ATP invests \$400m in clean energy and renewables
ATP has made one of the world's biggest commitments by an institutional investor to clean tech and renewable energy investment with a €292m (\$400m) investment in a global renewable energy fund run by Hudson Clean Energy Partners.
www.responsible-investor.com/home/article/danish_pensions_giant_atp_invests_400m_in_clean_energy_and_renewables/

26 February 2009: Could the crisis become a vintage era for clean tech private equity deals?
Attractively priced deals and long-term 'green' stimulus make market look attractive despite the doldrums.
www.responsible-investor.com/home/article/robeco_clean_tech_feature/

19 February 2009: Rachel Kyte, IFC: P8, Who cares wins and green investing in developing countries
IFC leads call for investor action to spur on Copenhagen agreement this year.
www.responsible-investor.com/home/article/ifc/

10 February 2009: Prince Charles lead 'P8' pensions powerhouse heads to Washington for sustainability push
Meeting aims to structure investment products for developing countries and start capital flows.
www.responsible-investor.com/home/article/news_p8/

2 February 2009: From Poznan to Copenhagen: policy-makers look to investors on climate change policy
Chance now for investors to feed into the negotiating process.
www.responsible-investor.com/home/article/from_poznan/

16 December 2008: Europe's green funds haemorrhage a billion dollars in a month
SRI funds also suffer heavy redemptions during apex of the credit crisis.
www.responsible-investor.com/home/article/feri3/

Green new deals: climate change investment themes in 2008 stimulus packages, \$bn

Country	Stimulus package	Total	Low-carbon power	Energy efficiency, R&D, modal shift	Waste, water treatment, pollution control	Green investments %	Other infrastructure	Period	Status	Total green spend
Chile	Anti-crisis stimulus package	4.0	-	-	-	-	0.7	2009	Pending	-
China	NDRC stimulus package	581.2	-	147.6	50.9	34	238.9	2009-10	Passed	198.5
EU	Recovery plan	253.6	19.0	15.5	-	14	8.0	2009-10	Passed	34.5
France	Revival plan	32.9	0.8	2.0	-	8	18.7	2009-10	Pending	2.8
Germany	Stimulus plan	63.4	-	11.8	-	19	-	2009-10	Pending	11.8
India	Stimulus package	6.8	-	-	-	-	2.0	2009	Passed	-
Israel	Stimulus plan	5.0	-	0.1	-	2	2.3	2010 on	Passed	0.1
Italy	Emergency package	101.4	-	1.2	-	1	-	2009 on	Passed	1.2
Japan	Stimulus package	476.0	-	11.0	-	2	2.2	2009 on	Pending	11.0
Poland	Stimulus package	30.0	-	-	-	-	-	2009 on	Pending	-
S Korea	Green new deal	38.1	-	8.5	17.8	69	-	2009-12	Passed	26.3
Spain	Stimulus package	13.9	0.8	0.6	-	10	11.2	2009	Passed	1.4
Thailand	Stimulus package	8.7	-	-	-	-	-	2009	Pending	-
UK	Pre-budget report 2008	29.7	0.6	1.4	-	7	26.5	2009	Pending	2.0
US	Emergency Economic Stabilisation Act	700.0	12.0	1.7	-	2	0.9	Next 10 yrs	Passed	-
	Economic stimulus package	825.0	10.4	85.9	32.3	16	9.2	2009-10	Pending	142.3
Total		3,170.0	43.5	287.4	101.0	14	321.5	2-10 yrs		431.9

Source: HSBC. As of 19 January 2009

Measuring and investing in environmental markets

As efforts to mitigate the effects of climate change are stepped up, investment capital will be required to develop key environmental technologies. These investors will need the guidance of specialised indices.

By Will Oulton



The effects of climate change are expected to transform the global economy over the next two decades and with this there is an increasing expectation that environmental markets, which include environmental technologies, will provide attractive and sustainable investment opportunities for global investors.

This growth will in part be dependent on access to capital by the companies emerging in the areas of renewable energy and energy services, water technologies and infrastructure, pollution control and waste management. In many of the economic stimulus packages being created by government's allocations of capital to renewable energy, energy efficiency and infrastructure form key parts. China for example, is devoting a third of its stimulus package to green measures. In addition, in his report on the economic impacts of climate change, Sir Nicholas Stern, the former chief economist of the World Bank, argued that radical and rapid cuts in emissions were needed. Following his report, the G8 recently stated its call for a reduction in global emissions of 50% by 2050, which will

require an 80% cut by developed countries.

To achieve this reduction, investment capital will be required to develop, scale up and bring down the cost of the key environmental technologies. In addition, public policy-derived market mechanisms such as carbon trading are likely to play an increasing role. All of this results in exciting opportunities for long-term superior and sustainable returns for investors.

Investor initiatives and collaboration

There have been a number of initiatives, trade organisations and alliances formed in recent years to develop thinking in this important area. These include the Carbon Disclosure Project, Institutional Investor Group on Climate Change and the UN Principles for Responsible Investment (UN PRI). All of these initiatives have been steadily increasing their influence within the global investment community.

More importantly, running parallel to such initiatives is the increasing attention from several niche funds, mainstream index providers

and asset management companies looking to provide financial products, such as indices and exchange-traded funds. Such innovation not only ensures accessibility to the environmental technology market but also provides transparent benchmarks and a framework of reference for the investors.

Benchmarking environmental technology performance

Indices provide an important tool for investors, providing much needed visibility to the performance of environmental markets. Index funds and ETFs based on environmental technology indices provide investors with low-cost exposure to this exciting sector, whilst also providing transparency of performance. In addition, such indices also play an important role in defining and classifying the environmental technology opportunity set.

Today there are a number of environmental technology indices available, of varying sophistication, taking a variety of approaches in defining environmental technology, covering different regions and with different investability requirements and methodologies. These indices were initially created by specialist environmental fund managers, brokers and research organisations; however, more recently investor interest has caused the main index providers also to enter this market.

The first global environmental technology index was the ET50 index (Environmental Technology 50 Index) launched by Impax Asset Management in 1999. It included the largest 50 companies globally that had over half their business in the development and deployment of environmental technologies. Impax defined these as falling into three areas: alternative energy and energy efficiency; water technologies and pollution control, and waste technologies and resource management. Definitions for environmental technology are now almost invariably based on these categories.

In December 2007, FTSE Group took over the calculation and management of the ET50 Index, with Impax continuing to provide detailed company research. The investability of the index was improved by adding liquidity screens and introducing free-float adjustments to constituent weights, to bring the index up to international standards of calculation. There is now also an independent committee to oversee the ongoing management of the index, chaired by Winston Hickox, the architect of CalPERS' 'Green-Wave' investment strategy.

'Investment capital will be required to develop, scale up and bring down the cost of the key environmental technologies. In addition, public policy-derived market mechanisms such as carbon trading are likely to play an increasing role'

The index is used both as a performance benchmark for this sector and as a basis for financial products such as ETFs. AP7, the seventh Swedish state pension fund committed \$500 million to environmental technology investments and selected the FTSE ET50 index as a benchmark for that investment. More recently, FTSE has licensed EasyETF to launch the FTSE ET50 Environment ETF.

The environmental 'opportunity'

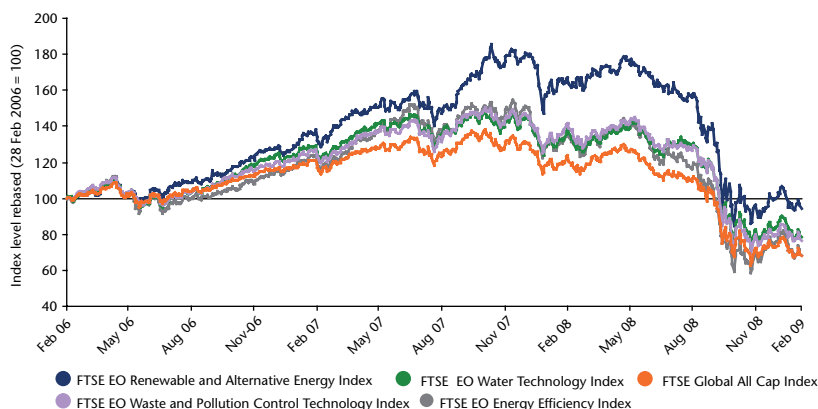
Interest in this area is not limited to 'pure play' environmental technology companies, as many larger companies are growing the environmental technology parts of their business. In discussions with global asset owners and managers it became clear that there was an interest in identifying those companies that are

'There is an interest in identifying companies that are transforming their business models to exploit the increasing opportunities provided from environmental markets'

'transforming' their business models to exploit the increasing opportunities provided from environmental markets.

In response, FTSE designed a suite of in-

Figure 1. Three-year performance of FTSE Environmental Opportunities Index series vs FTSE Global All Cap Index



Source: FTSE Group, data as at 27 February 2009

indices, the Environmental Markets Index Series, to capture this fast-moving investment segment. This new and unique opportunity provides investors with the tools to access not only pure-play companies, the FTSE ET50 Index, but also those companies that are clearly on a 'business transformational' path towards this, the FTSE Environmental Opportunities (EO) Index Series. The latter consists of a headline index and a series of indices measuring the performance of global companies that have significant involvement in environmental business activities, including renewable and alternative energy, energy efficiency, water technology and waste and pollution control.

To be eligible for this index, a minimum of 20% of revenues must be directly sourced from environmental markets. The companies in the FTSE EO indices, such as the FTSE EO Renewable and Alternative Energy Index, tend to be larger than the pure-play compa-

nies, therefore the risk profile of this portfolio is significantly different to the FTSE ET50 index. Its success against the FTSE Global All Cap index is clearly visible with a 60% out performance over a five-year period (see figure 2). The headline FTSE EO All-Share index has also been chosen by Russell Investment as the basis for its co-ordinated multi fund.

As interest in environmental markets continues to develop, investors will continue to seek excess returns from these sectors. This means that further benchmark development is inevitable, challenging index providers to develop a range of indices to reflect this growth. FTSE believes that by offering a range of market-defining environmental technology indices, global investors will have a range of leading tools and benchmarks to suit their investment strategies.

RI

Will Oulton is director, responsible investment, at FTSE Group

Figure 2. \$ total return for FTSE Environmental Opportunities Index series vs FTSE Global All Cap Index

Index	3M (%)	6M (%)	YTD (%)	12M (%)	3YR (%)	5YR (%)	3YR (% pa)	5YR (% pa)
FTSE EO Renewable and Alternative Energy	-8.7	-44.8	-15.0	-46.6	-12.8	42.5	-4.5	7.3
FTSE EO Energy Efficiency	-9.6	-47.1	-19.5	-52.8	-36.9	-15.5	-14.2	-3.3
FTSE EO Water Technology	-12.1	-44.1	-16.9	-46.6	-27.5	17.5	-10.2	3.3
FTSE EO Waste and Pollution Control Technology	-9.5	-43.9	-13.0	-48.1	-27.8	1.2	-10.3	0.2
FTSE ET50	-8.9	-56.6	-17.1	-53.4	-27.5	5.7	-10.2	1.1
FTSE Global All Cap	-14.0	-44.2	-17.4	-48.2	-37.6	-17.4	-14.6	-3.8

Source: FTSE Group and Thomson Datastream, data as at 27 February 2009

Near-term challenges, long-term opportunities

Environmental investment strategies have not been immune to the decline in global stock markets. But the long-term trends will continue to encourage savvy investors to commit to these sectors.

By Steve Falci



The worst financial crisis in 75 years has significantly impacted economies and stock markets worldwide. Governments are still struggling to mitigate the systemic risks arising from the crisis as well as the related cyclical downturn in the global economy that has created a deep recession.

We also remain in unprecedented times for our global environment. A number of significant trends pose a threat to the sustainability of our environment as never before. The growth in world population continues to test the limits of our ecosystems. Demand for natural resources – water, food and energy – is placing an impossible strain on the earth's ability to supply the resources that are required globally. Emissions resulting from a reliance on carbon-based fuels threaten to cause irreversible damage to the earth's climate if mitigation efforts are not implemented on a significant scale.

As awareness of these trends has grown in recent years, so too have the opportunities for savvy investors who are early movers into these strategies – investing in companies involved in water, renewable energy and climate change solutions. And they have been handsomely rewarded with significant outperformance versus the broader global equity indices. However, environmental investment strategies were not immune to the decline in global stock markets last year as the credit crisis and recessionary fears took hold. This was especially true of some of the renewables sectors that are regarded as being heavily reliant on project financing to sustain growth.

While long-term secular drivers of return to environmental strategies continue to gain strength and the steep price declines of many environmental stocks have created extraordinary valuations, near-term cyclical challenges remain and need to be navigated. Experience, expertise and detailed knowledge of sectors, companies, technologies and fundamentals are all essential elements for successfully navigating the current environment and positioning portfolios to benefit from these long-term trends as the global economy emerges from recession.

These trends are strong, continue to gain support globally and are currently reflected in regulatory trends and fiscal stimulus efforts that include explicit green components that are designed to combat the recession while providing necessary infrastructure for long-term sustainability.

Support for long-term investment in global environmental themes

Amid the turmoil in markets, long-term investment in environmental sustainability retains strong support:

- Long-term global trends support investment to address sustainability challenges.
- Regulatory and policy support continues to support increasing investment.
- Global green fiscal stimulus efforts are addressing the recession and long-term sustainability challenges.
- Many stocks providing environmental solu-

tions are trading at valuations that do not reflect their long-term prospects.

Long-term global trends

While the financial crisis garnered primary focus over the last year, global trends that continue to challenge the long-term sustainability of our global environment continue to accelerate.

■ **Population growth and demographics.** The UN predicts the world's population will increase from 6.8 billion today to 9.2 billion people by 2050. The combination of population growth, industrialisation, economic growth and urbanisation will continue to test the limits of our ecosystem and will require investment in innovation and infrastructure in the developed and developing world to meet the needs of a growing, more affluent global population.

■ **Natural resource shortages.** A growing, more affluent global population has and will continue to put increasing pressure on the supply of natural resources. Meeting the growing needs for energy, food and water is a major challenge facing our global society in the 21st century and will require investments in renewable energy, energy efficiency, water infrastructure, water technology and more efficient food production.

■ **Climate change.** Sustained pressure for lower-carbon economies continues to gain momentum through efforts by governments and business to mitigate and adapt to the effects of climate change. The growing demand for energy will need to be met through less reliance on the historically dominant carbon-emitting sources of oil and coal and with more reliance on alternative energy and energy efficiency. The potential human, environmental and economic costs from inadequate action on climate change are significant. Inaction quite simply is not an option. Reducing carbon emissions is a global imperative, and will require increased investment in renewable energy and energy efficiency.

Regulatory and policy initiatives

The scientific consensus surrounding climate change has paved the way for a growing global political consensus that has resulted in regulatory and policy initiatives designed to reduce carbon emissions and increase the use of renewable energy. Meeting the objectives to reduce carbon emissions and increase the

percentage of renewables in the energy mix will require significant investment across clean technologies.

The consensus got a huge boost with the election of Barack Obama as US president. His aspirations include doubling electricity generation from renewable sources over the next three years and achieving a 25% renewable target by 2025, a reduction in GHG emissions of 80% by 2050 and the introduction of an emissions cap-and-trade programme.

The EU continues to provide leadership, affirming the targets of 20% renewables and 20% reduction in carbon emissions by 2020. The UK was the first country to introduce a climate change law in the fourth quarter. It targets emissions reductions of 26% by 2020 and 80% by 2050.

China signalled its commitment to engage in confronting climate change with the publication of its national climate change pro-

‘The main challenge in navigating the near term will be identifying which undervalued stocks are best positioned for long-term leadership and have strong fundamental underpinnings’

gramme, and in November 2008 it issued a white paper that provided an update on progress as well as a re-affirmation of its efforts to improve energy efficiency and expand the use of renewable energy.

2009 will be a critical test for the global political consensus as we approach the global climate summit in Copenhagen in December. The hope is that with the US finally providing positive support and leadership, an effective successor to the Kyoto Protocol can begin to be fashioned.

Political support for increased renewable sources of energy is also buttressed by the need for energy security. Much of the world's oil and gas reserves are in politically unstable regions such as the Middle East and Russia. Concerns over energy security are exemplified by the recent dispute between Russia and Ukraine that threatened to cut off natural gas supplies to Europe. Renewable energy provides local sources of energy and can help

minimise energy supply disruptions.

Water has also become a dominant public policy issue and governments have been designing new water standards to increase water quality as well as regulate consumption. China has enacted national standards for water quality. The EU has a Water Framework Directive to coordinate the water management among member countries. In the US, California has recently set a goal to reduce water consumption by 20% by 2020. Regulatory efforts will continue to gain momentum and support investment to ensure that there is adequate access to drinking water across the globe as demand continues to increase.

Global green fiscal stimulus

As governments around the world struggle to cope with the economic downturn, they are seeking to revive their economies through fiscal stimulus. While the recession presents many challenges, the political consensus on the need to address our most pressing environmental challenges has led to the inclusion of ‘green’ components in the stimulus plans. HSBC has estimated that more than \$430 billion or approximately 15% of the total global stimulus of nearly \$2.8 trillion relates to environmental issues, with China and the US being the dominant components of both these numbers.

China's stimulus package of RMB 4,000 billion (\$586 billion) has by far the largest green component, with almost 40% allocated to ‘green’ themes. Railways, water infrastructure and electricity grids are the primary beneficiary of these funds.

The American Recovery and Reinvestment Act of 2009 provides nearly \$800 billion in fiscal stimulus, with approximately 12% focused on new national strategies in renewable energy, smart grid, mass transit, energy efficiency and water.

In Europe, France and Germany have significant components of more modest fiscal stimulus plans focused on environmental themes, with energy efficiency being the primary beneficiary.

Attractive valuations

The decline in the equity markets has in many cases led to valuations of individual companies that are not reflective of their fundamentals and long-term prospects. This is particularly true of many environmental stocks that are trading at historically low valuations, yet

retain better earning expectations than the broad market.

While aggregate valuations may be very low, the main challenge in navigating the near term will be identifying which undervalued stocks are best positioned for long-term leadership and have strong fundamental underpinnings and near-term access to financing to weather the recession. An in-depth understanding of the companies in the environmental space and the short-term and long-term drivers of their performance are an essential grounding for analysis and facilitate the identification of companies that are positioned to benefit from long-term secular trends, but also have the financial wherewithal to weather current economic environment.

Lessons from the financial crisis

As investors have begun to reflect on the causes of the financial crisis, in many quarters discussion has moved to the broader failings in fundamental approaches to investing. Chief among these failings were the short-term attitudes that prevailed among many senior executives at financial institutions as well as investors, which led them to ignore significant risks in pursuit of the next quarter's profit or return.

Equity investing has always warranted a long-term view. As we return to a longer-term perspective, the longer-term drivers of solutions to our biggest global sustainability challenges will continue to gain focus. Forecasting the bottom of the market and short-term market moves are fraught with chance – but investing in undervalued, fundamentally sound, leading companies that are positioned to benefit from profitable long-term secular trends, is a tried and true recipe for long-term investment success. **RI**

Steve Falci is vice president, sustainable investment, at KBC Asset Management.

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Clean tech private equity and the crisis: analysis and outlook

With valuations of clean tech companies hit by the crisis, many offer buying opportunities for investors. Experience of past crises suggests that 2009 could yet prove a vintage year for clean tech investment returns. By Stefan den Doelder



The clean tech private equity sector has been hit by the financial crisis just as other sectors have been. The financial crisis is mainly a liquidity crisis, whereby much less or no capital is available to finance operations or future growth. Because of the lack of liquidity, the crisis has rapidly turned into an economic crisis, with many economies having fallen into recession at the end of 2008. To examine the impacts on the clean tech private equity sector more closely, we believe it is vital to distinguish between the more short-term oriented effects of the liquidity crisis and the more mid-term effects of the economic crisis.

For the shorter term, the lack of capital means that clean tech companies will be hindered in their growth. Many clean tech companies are in need either of equity to expand operations or debt to start and roll out projects through which their technologies are applied. The existence of clean tech companies that have an urgent need of capital could be endangered. Others will have to take a critical look at the available capital and their cost structure. Already we see clean tech companies down- or right-sizing (for example, Tesla, OptiSolar, SunTech). One of the first companies in the clean tech sector that really hit trouble was Norwegian electric car manufacturer Th!nk, which suspended vehicle production and laid off 50% of its employees in December 2008.

The fact that many clean tech companies

have already raised substantial amounts of capital in the past two years helps. Furthermore, many clean tech private equity fund managers have raised a large amount of capital through new funds. Examples include Element Partners, RockPort Capital, Kleiner Perkins and VantagePoint. This means that there is still a large pool of clean tech capital available. The fact that this pool of capital will be used more prudently and only to (re-)finance the real clean tech stars could in our opinion be beneficial to the long-term returns of clean tech investments.

Minimal leverage

It is important to note that most clean tech private equity investments are venture capital or growth capital investments, instead of buyout transactions. This implies that the amount of leverage used is usually zero or minimal. Only very few clean tech private equity funds use leverage to purchase companies. This means that the increased cost of debt financing or the difficulties re-

garding refinancing or recapitalisations do not play an important role in the clean tech private equity sector.

We expect exits and realisations for 2009 to be at a low level. Starting in 2008, we have seen a limited number of trade sales or IPOs, and we expect this trend to continue at least into 2009. Stock markets are currently not receptive to any kind of IPO and the general expectation is that markets need to calm down substantially before the first new entrants can emerge. Also trade sales have become rare and a few large corporates are expected to have large pools of cash available for takeovers.

Less growth, but still attractive growth

For the medium and longer term, the economic down-turn or recession that is now hitting most countries will impact the growth potential for clean tech companies. Although the underlying fundamentals for the clean tech sector (such as climate change, energy supply security, depletion of resources) are still as strong, the reality is that in these situations the economy has priority over environmental concerns. Spending by companies and consumers will decline, which will to some extent negatively affect clean tech markets. Nevertheless, according to research firm Clean Edge, many clean tech markets have grown in the past five years by high double-digit figures each year, so less growth would still mean attractive growth, especially in comparison to other (contracting) sectors. In the long run, we believe the attractiveness of clean tech will not be affected by this crisis.

A trend related to the economic recession has been the ensuing, rapid drop in oil prices. From a height of \$147 a barrel in June 2008, the oil price is now hovering between \$40 and \$50. This presents an additional challenge for clean tech companies, especially those active in renewable energy and

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energy efficiency. Compared to last summer, clean technologies now have a much steeper objective to meet to become cost-competitive with traditional technologies. We strongly believe this to be a temporary issue: when economies get out of recession and start to grow again, the issues surrounding peak oil will resurface and push oil prices to new heights.

Another relevant factor in assessing the mid-term effects of the crisis is governmental policies and regulation. As part of the \$700 billion US bailout bill, the long-awaited extension of the production and investment tax credits for renewable energy were finally passed and signed into law by then President George Bush. Moreover, the economic stimulus package of \$825 billion introduced by President Barack Obama dedicates at least \$78 billion to doubling renewable energy production within three years, improving US energy efficiency and enabling smart grid applications. These are important steps forward for the clean tech sector. Many clean tech businesses will profit from these subsidies and incentive

programmes for all kinds of renewable energy and energy efficiency technologies. As a result, the dark clouds over the economic system have a silver lining for clean tech.

Buying opportunity

All of the above factors mean that valuations for clean tech companies now raising money have come down and thus present a buying opportunity for clean tech investors. As mentioned by some experienced private equity professionals, the years of a crisis are often the best vintage years in terms of private equity fund performance. This is mainly due to the attractively-priced deals available in these times. We believe this is true for investing in clean tech private equity funds as well. 2009 could therefore very well prove to be one of the best vintage years in terms of clean tech investment returns so far!

RI

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Robeco's clean tech products

Robeco has been active in the clean tech private equity sector since 2003. The first product through which Robeco invested in the sector was Robeco Sustainable Private Equity, a 2004 vintage year investment programme investing in sustainability and clean tech funds. In 2006, Robeco initiated fundraising for its second clean tech private equity product, investing in clean tech funds and making co-investments directly into clean tech companies. The total assets under management in clean tech private equity now amount to more than \$650 million.

Robeco's investments are diversified across clean tech private equity funds (around 70%) and direct co-investments (around 30%). The funds are acting as a deal flow accelerator, enabling the fund to select from the most attractive direct co-investment opportunities that these clean tech private equity funds can offer. The investments are further diversified across private equity investment stage, geography, sector, technology and time. Robeco's clean tech investments are managed by a team of five experienced private-equity investment professionals at Robeco and can tap into the knowledge of dedicated clean tech experts at Rabobank.

Mine your waste!

Investors need to give full consideration to sustainability trends in a resource-constrained world. Waste management offers an attractive long-term investment opportunity.
By Jvan Gaffuri



It may be a truism to say we are living in a resource-constrained world. Recent spikes in commodity prices may hint at future developments. However, few institutional investors take long-term sustainability trends such as scarcity of resources and energy or climate change into full consideration in their investment approach. At SAM we believe this is not smart. One point is indisputable: sustainability trends such as climate change, reliability of energy supplies and scarcity of resources will be defining issues in decades to come.

Sustainability investing therefore means integrating economic, environmental and social factors into traditional financial analysis to benefit from opportunities presented by sustainability trends, and managing the associated risks, leading to a superior long-term risk/return profile. Given these sustainability trends, in SAM's view, waste management represents an attractive long-term investment opportunity.

The waste management value chain

When investing in the waste management industry, it is useful to keep the value chain in mind to better understand the dynamics driving the different stages and select companies operating in the most attractive areas. It is also possible to improve positioning of the principle technologies that are in use and required to be competitive when bidding for new projects. Technologies evolve constantly to meet the environmental requirement of modern waste management solutions and stricter regulations, which also creates investment opportunities on the equipment side. There are waste management companies that are active along the whole value chain and many other smaller companies focusing just on certain activities or technologies.

The waste value chain is usually broken down into two main categories: collection and disposal. Collection is further divided into mu-

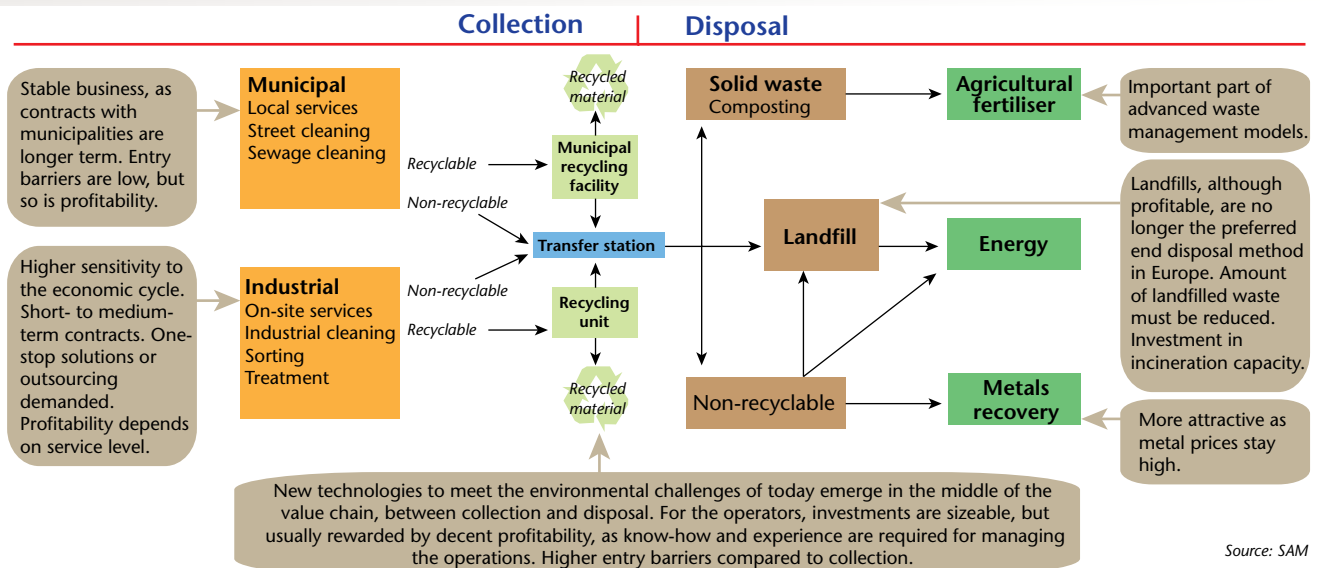
nicipal and industrial, according to the client typology. Waste is usually sorted in centralised transfer stations, although some systems favour separated collection. The disposal category includes all the technologies for the treatment and final disposal of the many waste types. The efficiency of each disposal technology depends on the type of waste treated.

The collection aspects of the value chain have similar characteristics to a traditional utility service: long-term contracts, price negotiation with public authorities and a developed regulatory framework. A large proportion of collection is still provided by municipalities, although the trend of outsourcing to private companies still exists. In continental Europe, the public sector still has a strong presence, especially for municipal waste collection. Private companies have a greater presence in industrial collection. Firms are more inclined to select one-stop solutions for their waste disposal, by outsourcing to private waste management companies.

The market, especially in collection, is very fragmented with many small and local players. The entry barriers to the collection market are low, as the infrastructure required is not huge. Operating margins are also in general lower than for the disposal portion of the chain. Volumes are more stable for municipal collection as waste production is less sensitive to economic growth than industrial collection, where the correlation with industrial production is very strong. Demographic trends are more relevant to the municipal waste market.

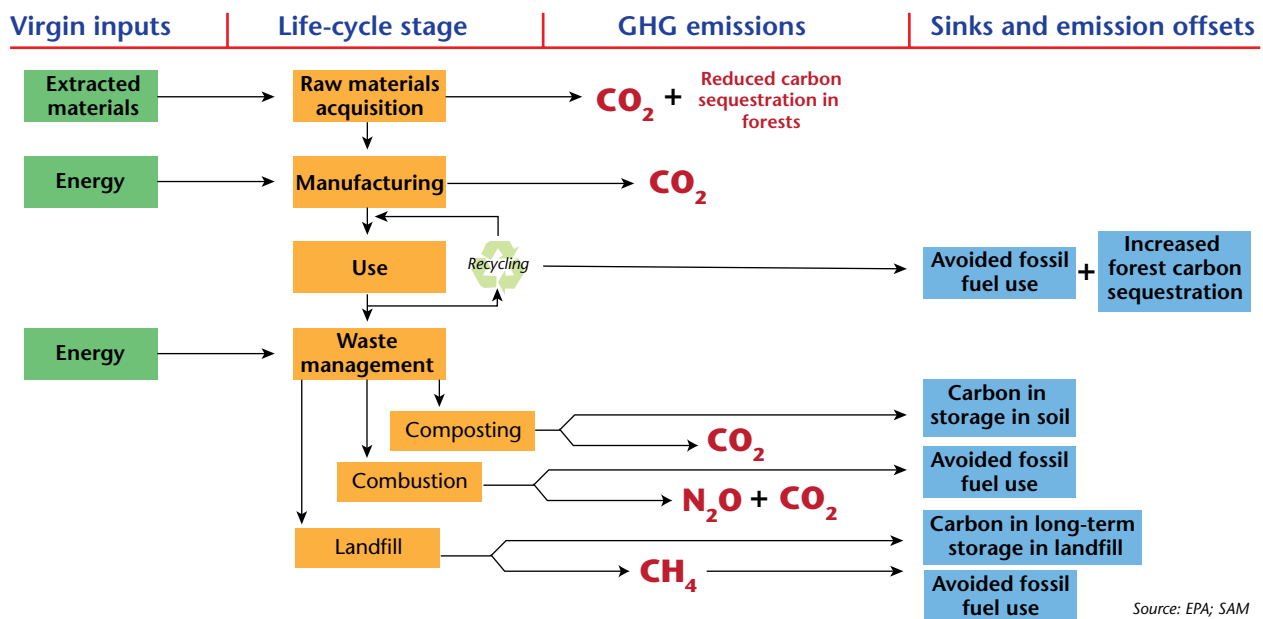
From the investment perspective, the collection portion on its own offers little, given the competitive landscape and the low level of technological expertise. On the other hand, it is an important area for integrated waste management companies, operating over the whole value chain, as it provides the raw material to supply treatment and disposal facilities.

Figure 1. The waste value chain



Source: SAM

Figure 2. Waste management value chain from the greenhouse gas emissions perspective



Source: EPA; SAM

Legal framework gets tougher

More stringent requirements for recycling and separation of waste increase the importance of intelligent transfer stations where, instead of just being stored and then transferred to the final disposal place, waste is mechanically sorted, recycled where possible and partially treated using technologies such as mechanical biological treatment (MBT).

It is in the area between collection and disposal that the most innovative technologies emerge, motivated by the need to improve the quality of the input materials for disposal facilities (incineration, landfill, composting) to increase the efficiency of the final treatment as well as the proportion of waste that is recycled. Another driver is to replace manual sorting with mechanical sorting for both efficiency and safety reasons. The majority of the newest waste management solutions include an advance sorting station. Given the higher level of expertise and technology as well as the sizeable investments required, margins are usually higher than for the collection business and the competitive pressure is lower.

In the disposal aspect of the value chain, waste is treated using the most appropriate technology. Scarcity of space, stricter environmental regulations and the availability of alternative technologies makes it less attractive simply to put all waste in a landfill. Organic waste is usually processed using biological treatment solutions such as controlled decomposition. Sorting, drying and composting of the organic portion of the waste helps dramatically reduce the quantity of waste to be landfilled or incinerated. Additionally, landfill gate fees in Europe are rising to meet the landfill diversion targets set by the European Union. The fraction of

waste that remains after recycling and biological treatment is usually used to produce energy (thermal, for industrial applications, heating or electricity) in waste-to-energy plants or put in a landfill.

Waste-to-energy is becoming more attractive as the technology is now more affordable and all issues relating to the emissions in the air have been solved. Incinerators require a lot of initial investment for approval and construction: once the plant is running, returns on investment are above average within the value chain.

Landfills are still quite profitable and offer a good return on investment. Landfilling is still the most widespread end-disposal solution for countries with weak environmental legislation and high availability of cheap land. Densely populated areas with strict environmental standards tend to recycle more, compost organic waste and incinerate the residual waste. On the other hand, within Europe, the volume of waste diverted to landfills is expected to continue to shrink, as newer, environmentally friendly technologies like MBT, composting and incineration attract additional investments.

Waste management as climate change mitigation

Every waste treatment technology causes some emissions into the air or soil: landfills are often highlighted as causing a lot of pollution from methane released into the air and soil contamination from the leachate. Newer landfills are fitted with landfill gas capture systems and the leachate is collected and treated before release. Collected landfill gas can be used to produce energy, reducing the demand for fossil fuels. Environmental problems associated with waste

incineration are mainly linked to emissions into the air (flue gases and particulates) and disposal of the ashes. Air emission of pollutants is reduced through filtration and optimisation of the combustion process. Ashes are treated as any other hazardous waste, since they often contain high concentrations of heavy metals such as lead, cadmium, copper and zinc. The heat produced by incineration is distributed directly or used to generate electricity, thereby helping to reduce the consumption of fossil fuels. Demand for raw materials is reduced considerably by increasing recycling and reuse.

Conclusion

Waste is a precious source of raw materials and of reliable renewable energy. The most advanced, sustainable waste management strategies focus on application of appropriate treatment for each waste category, aimed at maximising the rate of material recovery and reducing the impact on the environment. The most recent legislative changes in Europe aim to divert untreated waste streams from landfills towards more sustainable waste management technologies. Furthermore the focus of waste management strategies takes account of the impact on climate change, the convergence of the waste and energy industries and the move towards higher levels of recycling. Given the endurance of these sustainability trends the waste management sector offers interesting long-term investment opportunities. **RI**

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