

Russell OpenWorld®

Climate change investing



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HOW WE RESPOND TO THE THREAT OF CLIMATE CHANGE COULD BE ONE OF THE MOST IMPORTANT FACTORS INFLUENCING SOCIETY, AND SECURITY PRICES, IN THE 21ST CENTURY.

Climate change, regardless of whether it is perceived to be a natural occurrence or man-made, is likely to have far reaching implications for governments, economies, companies, consumers and investors.

IMAGINE A FUTURE IN WHICH...

- › We drive fuel-efficient vehicles averaging 60 miles per gallon (double the average fuel economy today)
- › We reduce our reliance on cars so that the average person drives 5,000 miles a year (half current levels)
- › Four million 1-MW-peak wind turbines (50 times the current global capacity) generate carbon-free electricity
- › Two thousand 1-GW-peak photovoltaic solar power plants (700 times current global PV capacity) generate carbon-free electricity
- › Efficient buildings reduce our energy requirements, cutting carbon emissions from power generation by 25%
- › Crops around the world are sowed using tilling techniques that reduce the release of carbon emissions from aerating un-decomposed organic matter
- › Average coal power plant efficiency is increased from today's 40% to 60%

These are the kinds of changes some climatologistsⁱ suggest are required if we are to stabilise greenhouse gas (GHG) emissions and help keep the current global average increase in temperatures below levels beyond which global warming could become critical in the future.

Of course, these are not the only approaches to reducing the amount of greenhouse gases in the atmosphere: reduced de-forestation, increased use of nuclear power, hydrogen-powered cars, synthetic and biomass fuels are other examples. No one knows the precise blend of stabilization strategies society might ultimately adopt to avoid severe climate change. But each strategy would require significant investment, and major change.

DEFINING CLIMATE CHANGE

Some clarity in defining climate change is required; climate change should not be confused with global warming, though the two concepts are, of course, related.

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun; natural processes within the climate system (e.g. changes in ocean circulation); human activities that change the atmosphere's composition (e.g. through burning fossil fuels) and the land surface (e.g. deforestation, reforestation, urbanization, desertification, etc.).ⁱⁱ

The breadth of the impact of how humanity responds to the threat of climate change will be massive. It will touch everything from the homes and buildings in which we live and work, the way the food we eat is produced and distributed, how we generate the energy we use and how we move from place to place. The scale of the challenge and the investment requirement is enormous.

Obviously, climate change will have significant impact on companies, as well. Some will benefit directly as markets for their products expand – for example, manufacturers of alternative energy sources like wind turbines and solar panels. Others will be impacted indirectly as they grapple with issues relating to the security and pricing of their energy supplies, the efficiency of their use of natural resources and the overall impact of their business operations on the environment. Some companies will benefit relative to the competition, while others will lose. This creates opportunities for investors.

We expect energy security, resource efficiency and environmental impact to become increasingly important influences on company valuation.

WHAT IS “CLIMATE CHANGE” INVESTING

Like every industry, the investment management community is adapting to a world in which climate change will be a dominant feature. Indeed, some investment managers have introduced strategies based on identifying and exploiting opportunities relating to climate change.

The OpenWorld® fund range includes a series of thematic funds that seek to benefit from key secular trends. The OpenWorld Climate Change Fund seeks to benefit from investments that:

- › Are impacted by climate change-related regulatory change (e.g. those restricting greenhouse gas emissions).
- › Exploit pricing inefficiencies due to business risks related to either the sourcing of production inputs, or the impact of production processes on the environment.
- › Take advantage of the development of technologies or energy sources that are compatible with broad governmental or societal climate initiatives.

Broadly speaking, climate change presents investors with two different types of opportunities:

- › **Mitigation** refers to technologies or approaches that ‘attack’ climate change by focusing on the reduction of CO2 and other GHG emissions. Solar panel production or clean technologies are examples of mitigation. Many experts acknowledge that these technologies alone will not be sufficient to achieve the targeted levels; therefore technologies that offer more efficient use of resources are also considered in our definition of mitigation.
- › **Adaptation** concerns the financial and legislative costs of climate change and their impact on companies reacting to these costs and requirements. Utility companies, for example, will have to adapt as they will face legislative requirements to reduce carbon emissions.

Both strategies provide scope for companies to enhance their profitability, either directly by capitalising on revenues generated from new technologies, or indirectly by adapting more quickly than competing organisations and thus gaining a competitive advantage.

We view climate change investing from a *value* perspective, rather than a *values* perspective. We believe that because climate change is going to impact on security prices in a variety of ways, it will create opportunities for good managers to add value. Therefore the case for climate change investing is independent of an investor’s appetite for investing in a socially responsible manner.

Companies won’t
be able to ignore the
impact of climate
change, and the
market should
reward those that
respond well.

IS CLIMATE CHANGE THE NEXT DOT-COM?

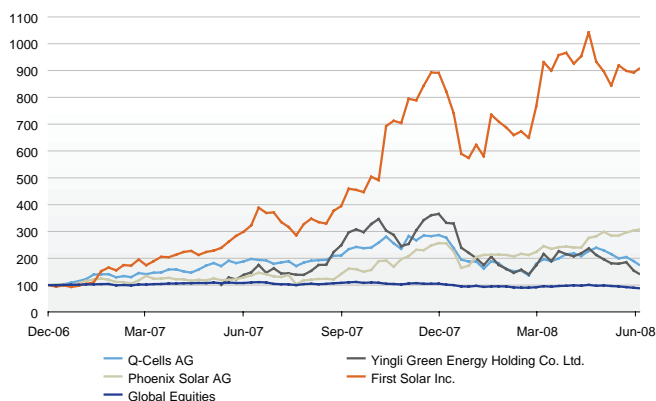
During the development of the internet and its many applications in the 1990s, investors had a difficult time assessing and fairly pricing the impact such a revolutionary technology would have on companies. There were some undoubted long term winners like Amazon and Google who have built sustainable businesses on the back of the internet, but there were also many companies whose growth prospects never approached the levels necessary to justify the inflated prices. See Boo.com, for example, the UK retail site that went bankrupt in May 2000.

Climate change is similar to the internet in several key respects, and will almost certainly become a key factor in the pricing of many stocks:

- › Like the internet, climate change will impact on all companies directly and indirectly;
- › The timing and consequences of some of the impacts of climate change on companies will be more difficult to assess than others;
- › As we saw in the tech bubble, climate change is creating opportunities for new companies to be created. IPO activity in this space is already beginning to attract attention;
- › Stocks in certain sectors have shown impressive performance;

Consider, for example, the performance of solar power technology stocks over the past year and a half:

Cumulative performance from 31 December 06 to 30 June 08



Source: Bloomberg, in local currencies.

During the 18 months from the beginning of 2007 to the end of June 2008, the stock prices of manufacturers of solar panels and photo-voltaic technologies have skyrocketed and we have seen numerous successful initial public offerings. While global equities fell by nearly 10% in local currency terms, Yingli Green Energy rose by 52%, German solar giant Q-cells is up nearly 90%, Phoenix Solar is up over 200% and the American company First Solar is up an amazing 814%.

Are we seeing the birth of a giant new industry? Or is this the next internet-style stock price bubble, with climate change hype leading to frothy prices bearing no resemblance to the future earnings these companies might realistically generate?

Global warming is not a certainty. It may not persist and science may never be able to prove that mankind's activities have been the cause of the recent rise in temperature. However, that may not matter. The threat of climate change, the requirement that this places on governments and other policy makers to respond, and impact this has on the attitudes, beliefs and actions of individuals mean the share prices of all companies will be influenced by climate change to one extent or another.

Efficient resource utilisation and energy security are going to become increasingly important critical success factors for companies, and investment managers will be forced to take account of climate change when assessing investment opportunities. Only time will tell if climate change proves to be "the next big thing" in investing, but the pervasive nature of climate change suggests that it is an influence that investors should not ignore.

For climate change investing, we like experienced managers with good global equity capabilities, strong policy and science expertise, and a well defined universe of stocks from which to select.

ASSESSING THE UNIVERSE OF CLIMATE CHANGE MANAGERS

There are two commonly accepted approaches fund managers use to take advantage of opportunities related to climate change: a narrow, more specialized approach or a broader, more inclusive, approach. Managers focusing exclusively on companies in clean tech or alternative energy are examples of the narrower approach. The broader approach encompasses the more specialized areas while also being able to exploit opportunities offered in companies across a wide range of markets which are affected by climate change.

Russell Investments believes taking a broad approach with the ability to access a range of opportunities is the best way to benefit from the opportunities presented by Climate Change. We favour using a global equity manager with the ability to invest in companies across a variety of industries, and to exploit insights based on their understanding of climate change and the impact it will have on a wide range of companies.

The universe of managers with credible pedigrees in climate change investing is still relatively small. We have researched around 20 firms with positive thematic environmental strategies. Approximately half of these are climate change investment products and we expect the number to continue growing. Our research has taken us to products managed by firms from across the market, from the large institutions to more niche, boutique managers.

We apply the same rigorous evaluation techniques to managers in climate change that we use when researching all managers. The nature of climate change investing means, however, that managers with certain characteristics are likely to be better able to deliver good performance in this area. The key success criteria that we seek in climate change managers include:

- › **Compelling global equity capabilities** – like several of the thematic funds in the OpenWorld range, we believe the best managers are likely to be those whose investment processes seek to identify the most attractive stocks within a particular industry segment regardless of where they are listed. Climate change will impact companies around the world, and mitigation and adaptation strategies and opportunities should not be viewed through a narrow, regional lens.

Alternative / Renewable Energy	Clean / Environmental Technology	Climate Change
Solar	Fuel Cells	Nuclear Energy
Wind	Biofuels	Water Companies
Geothermal	Hydrogen	Energy Security
HydroPower	Advanced Materials	Agriculture / Crops
Wave/Tidal	Waste Technology	Recycling / Landfill
	Pollution Control	Emission Trading
		Consultancy
		Resource
		Consumer, Eco Brands / Carbon Neutral

- › **Specialisation and experience in climate change investing** – climate change is relatively new as an investment theme, and the number of managers bringing climate change themed products to market is increasing and likely to continue to increase. We believe it is important to have established credibility in this approach, and not merely the ability to jump on a bandwagon with a poorly thought-through climate change-badged investment product.
- › **Policy expertise** – the price volatility seen recently in solar energy stocks following the uncertainty about German policy on subsidies is a good example of the impact policy change can have on security valuations. Good climate change managers need the ability to forecast and rapidly assess implications of changes in governmental policy better than the competition.
- › **Science expertise** – in addition to policy expertise, managers will benefit from having science expertise to aid in assessing the merits of new technologies, as well as expertise in meteorology and geology. Close ties to universities with strong faculties in these areas, or the presence of experts on staff or retainer could provide managers with a competitive edge.
- › **Industry-dynamic expertise** – Managers must also understand whose technologies are being accepted into the marketplace. As demonstrated during the tech boom, the best technologies do not necessarily become the industry standard. Success of climate change managers will depend on their ability to integrate their scientific knowledge with business strategy.
- › **Development of a custom universe of stocks**– likely to be prominent in the climate change playing field. There are no commonly accepted benchmarks or indices of climate change stocks, in part because of the lack of a shared definition of the characteristics that define a climate change stock. Most of the managers that we have researched view the creation of the universe of stocks from which they construct portfolios to be highly proprietary and a key source of value added. As a result, we prefer to invest with a manager who has a strong rationale for inclusion of stocks in their universe, and that they have applied this rationale over time and found that it works well within their investment process.

CONCLUSION

Climate change adds a new dimension to investments. It will create new market opportunities for some companies. It will dampen earnings prospects for others. The impact of climate change will be pervasive and, in some situations, extremely difficult to value correctly. Therefore the impact of climate change on security prices will create opportunities for good active managers to add value.

Russell believes there is a strong case for integrating Climate Change investing into our clients' portfolios. Climate change is a new and fundamentally sound investment strategy. However, the opportunity set for climate change investment is rapidly evolving.

The expanding array of available products is potentially confusing for investors. Based on our manager research activity in this area, we favour using a global, broad approach rather than investing in a narrowly defined sector fund. We also believe that superior results will result from investing through a carefully researched and experienced manager, specialising in climate change and able to offer a competitive advantage through outstanding policy and science expertise.

Through Russell OpenWorld®, investors can access exposure to the compelling Climate Change investment opportunity with confidence.

ⁱ Pacala, S., and Socolow, R., 2004: 'Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies,' Science, 305, 968-72

ⁱⁱ Source: US National Academy of Sciences definition, as quoted on the website of the Environmental Protection Agency

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Issue date: September 2008