



Q2 2011

Environmental, social and governance quarterly themes

As part of Newton's responsible investment process, Newton's Responsible Investment Team explores various aspects of investment as they relate to environmental, social and governance matters. This document provides a commentary on a number of issues. These are:

1. Hydraulic fracturing, regulatory update
2. The Chinese housing shortage
3. EC Green Paper on Corporate Governance
4. Biofuels
5. Corporate governance in Singapore

Hydraulic fracturing, regulatory update – release of UK and US government studies

In previous reports,¹ Newton has highlighted the environmental questions surrounding hydraulic fracturing, informally known as fracking. This is a term used to describe the method of extracting naturally occurring shale gas. The fracking process requires a high-pressure injection of a significant amount of water, sand and chemicals into very hard rock, thus causing fissures. These are kept open by the sand, which then allows the gas to be tapped. Waste water containing many chemicals is then extracted and disposed of elsewhere. There is a lack of transparency around the fracking process relating to the types of chemicals used, the percentages of chemicals removed post-extraction and the management of waste water. This has fuelled fears of dangerous and harmful environmental practices, and corporate misdeeds. Previously, Newton stated its belief that companies should adopt transparent reporting on how environmental and social risks are identified and managed within this business.²

As public concerns mount, this increasingly contentious energy sub-sector has attracted the attention of the media, governments and regulators. In May 2011, the French National Assembly announced a moratorium on fracking, which will be enacted if the senate does not block this bill. Moratoriums are being announced or are predicted in other jurisdictions. Meanwhile, the US is midway through the process of a major government investigation into the environmental and social impacts of fracking. The UK Government has also released a study on fracking, together with a series of recommendations. On balance, these appear, perhaps surprisingly, to be sympathetic towards the industry.

A cautious backing from the UK

The UK Government's Energy and Climate Change Committee published a study in May 2011 that was, on balance, positive on the impacts of fracking. This study concluded that *"the environmental and climate risks posed by shale gas need to be balanced with its potential contribution to energy security. On balance, we feel that there should not be a moratorium on the use of hydraulic fracturing in the exploitation of the UK's hydrocarbon resources, including unconventional resources such as shale gas."*³

While the UK government did not consider the environmental risks to be serious enough to merit a moratorium, the study noted a number of issues of concern.

Underground water sources: According to the study, there is no evidence that the fracking process poses any risk to underground water aquifers provided that well-casings are intact before the process commences. Rather, the risks of water contamination are due to issues of well integrity and are no different to concerns encountered during the extraction of oil and gas from conventional reservoirs.

Water usage and pollution: UK legislation would need to take into account the fact that large-scale fracking at multiple wells requires significant amounts of fresh water and chemicals, leading to the generation of large volumes of waste water that requires treatment. In addition, the water required for extracting shale gas could challenge existing resources in regions that are experiencing water stress.

1. See Responsible Investment report Q2 2010, page 59 and ESG Themes Q3 2010, page 3.

2. *ibid.*

3. Shale Gas - Energy and Climate Change Committee, www.publications.parliament.uk accessed July 2011.

Chemicals: The Environment Agency would need to ensure that companies declare the type, concentration and volume of all chemicals that are used within fracking fluid.

Insurance: A fund would have to be established to ensure that, if abandoned, wells can be "plugged". Such a fund could be established through a levy on shale gas well drilling or through the advanced payment of a bond from well operators.

Air quality: The Environment Agency would have to monitor both water and air for contamination before and during shale gas operations. The Environment Agency, in collaboration with the Health and Safety Executive, would need to have the powers to insist that planned onshore venting and flaring of natural gas for extended periods would not be permitted.

Carbon: In planning to decarbonise the energy sector, the approach to natural gas would have to be cautious. Estimates for the life-cycle carbon footprint of shale gas range from 3.5% above the average for conventional gas to 54% above. While carbon emissions from gas are relatively lower than coal, both are higher than many other power generation technologies. The emergence of shale gas increases the urgency of developing effective technologies for carbon capture and storage.

Initial disclosure from US operators

The April 2010 BP-Macondo oil spill in the Gulf of Mexico led to an increased scrutiny of the entire hydrocarbon sector in the US. In September 2010, Congress initiated a scoping study examining hydraulic fracturing, which included a request for disclosure of the products and chemicals used in fracking fluids between 2005 and 2009. This information was requested from the 14 leading US oil and gas companies. The results were published in April 2011 and disclosed a total of 2,500 products containing 750 chemicals used by these companies. Some components were innocuous but others were extremely toxic, including benzene (a carcinogen), methanol and lead. The scoping study is being reviewed by the US Environmental Protection Agency's Scientific Advisory Committee, who will appoint an external body to conduct an in-depth examination of the sector. The report from the external body is expected by late 2012, at the earliest.

There is a widespread belief that environmental regulation in the US will tighten in many areas but not to a level where it will be cost prohibitive to the energy sector. This belief is supported by the party affiliation of senators in many US states, where the local economy is reliant on energy production. Based on empirical evidence to date, the main environmental issue is the pollution of ground water rather than of underground aquifers. Commentators on the fracking sector do not expect the proper processing of fracking fluids to be a major new item on the cash flow statement of operating companies.

Localised air pollution - a largely unexplored effect of fracking

Fracking also produces air pollution through the compression engines that are required to force fluids into shale rock. These engines use substantial amounts of diesel and are not regulated at present. Initial studies in the US have shown significant effects on air quality in states where fracking takes place. A rapid worsening of air quality has been detected in Wyoming which, with low population density and low industrial activity, has otherwise very clean air.

To date, this issue has not been a focus of the media or of environmental activists in the US, who have focussed on water on a contextually specific basis and climate change in terms of global effects. Newton believes that this may change going forward and regulation or adverse publicity around this issue may raise new risks for companies with shale gas operations. Such risks are particularly acute in states such as Ohio and Pennsylvania, where air quality has already been compromised by cars and industry. Adding an additional source of pollutants may lead to breaches of safe levels set by the Clean Air Act. This belief is strengthened by the inclusion in the report from the UK Energy and Climate Change Committee of provisions relating to flaring and monitoring of air pollution. Newton will engage with companies in which it invests to understand how they are mitigating airborne pollution from their fracking operations.

Mitigating risks from exposure to shale gas

Different countries and sub-national jurisdictions will develop varying responses to fracking. While France may ban the process altogether, fracking seems certain to continue to play a growing role in meeting the energy demand of North America. In Europe, Poland has energy security concerns driven by import dependence on a single supplier, Russia. Despite higher costs involved in tapping deeper deposits, Poland is likely to be attracted to the opportunities offered by fracking and may be “Europe’s barometer” for shale gas. Germany’s recent decision to phase out all nuclear energy within the next two decades will increase its needs for other energy sources. Germany is expected to explore further domestic capacity and, possibly, increase its imported energy.

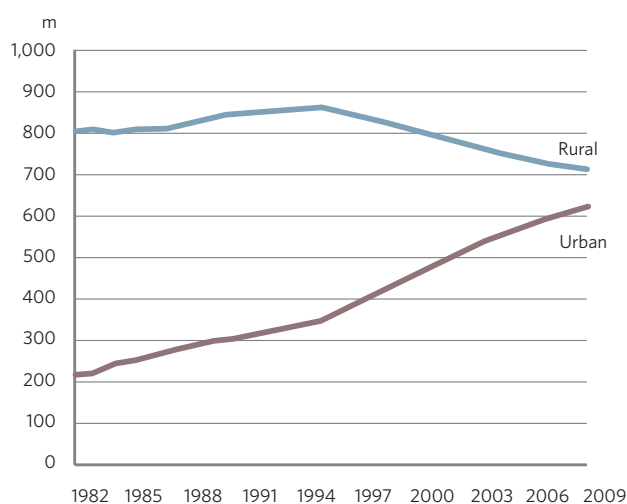
Newton recognises that investing in the gas sector brings certain environmental and social risks and that the examination and description of these risks remains a nascent area of study. Furthermore, specific downside risks are not being prioritised adequately by some oil and gas operators. These risks include airborne pollution and carbon output. Shareholder resolutions relating to shale gas at general meetings, where clients have equity exposure, continue to be addressed on merit. Newton supported the shareholder resolutions calling for more disclosure on management of the environmental and social risks linked with fracking at the 2011 AGMs of ExxonMobil and Chevron, both major operators in the US.

Energy Supply is a key Newton investment theme. It is essential that Newton stays abreast of scientific and legislative developments associated with shale gas and shields its clients from risks that are incommensurate with potential rewards. To this end, Newton will engage proactively with companies in which it invests in an effort to ensure that the associated risks are being managed effectively.

The Chinese housing shortage

Industrialising emerging economies are experiencing rapid urbanisation, leading to unprecedented demand for additional housing. Nowhere is this more pronounced than in China. Exposure to this boom can bring significant upside to investors. However, the risks involved may be substantial in the medium to long-term. Understanding the dynamics of this massive migration and its social ramifications is central to several of Newton’s investment themes including *all change, more government, population dynamics and construction & reconstruction*.

CHINA'S POPULATION BY URBAN/RURAL RESIDENCE



Source: CLSA “Mapping China - Putting the pieces together” 3rd edition, 2010.

A perfect storm for rising house prices

Chinese urbanisation has led to an acute housing shortage in many metropolitan areas and the number of shanty towns has grown. Recent reports suggest that up to a million Beijing residents now rent windowless underground cells, which were built fifty years ago as nuclear bunkers when relations with the Soviet Union were less congenial. Meanwhile, large numbers of apartments and entire developments, which are bought as investments by wealthier Chinese looking for safe capital stores, are intentionally left empty, given low rental yields and maintenance costs. This effectively takes supply of homes out of the market, if not supply of properties. Rising incomes and low consumer debt add to the drivers supporting a continuing price surge in the public housing, or ‘commodity housing’, market.

Social housing in the 5-year plan

The average price of new property has reached 30x the average household income in Beijing, and 23x in Shanghai. The national figure, at almost 10x, is significantly higher than the UK at 4.75x or the US at 2x (2009 figures).⁵ It is not uncommon for 60-70% of an individual's net income to be spent on mortgage payments. For many middle-income families and potential first-time buyers, purchasing commodity property becomes very difficult, meaning that they will be paying rising rents while attempting to save for a deposit or staying at the family home for longer. Despite a heavier weighting in wage growth at the lower end of the earning spectrum, with middle-income families unable to purchase, the hundreds of millions of blue collar workers, who have relocated to cities, stand little chance of ever buying commodity housing, or even of renting it in the open market. A long-term policy intervention is required. The central government is seeking to address what is becoming a driver of popular unrest by way of a social housing construction programme, the scale of which is astonishing. 36 million new social homes are planned for construction over the course of the current 5-year plan. Conservative estimates suggest 20 million is achievable. This year, 10 million are being started. This is in addition to the 20 million commodity housing units currently brought to market each year. To give context, in the UK in 2010, a total of 100,000 total new homes were built, by private and public sector, which is approximately 7% of the Chinese total when normalised *per capita*.

From developer to landlord

Investors have been able to exploit legal loopholes and, allegedly, corrupt officials in order to own multiple economic houses, thereby becoming landlords of properties that were built for owner-occupation by low-middle income families. Those in low-rent housing pay an average of 9% of their net income on rent, leaving far more scope for consumption and thus growth in other sectors and the wider economy. These factors have led to a shift in the balance of social housing starts from economic (offered for sale) towards low and public rental housing. China has a high owner-occupier level; at 60-70% it is similar to the UK and much higher than Germany or France. This percentage is likely to fall given the move from economic to rental housing and marks a cultural shift for Chinese aspirations and notions about owning their home.

A difficult market for foreign housebuilders

Multinational companies are increasingly fascinated by "the fortune at the bottom of the pyramid". The idea is that these companies can generate profits by bringing benefits to the billions living on less than USD 2.50 per day by treating them as value-demanding consumers, rather than aid-recipients. While this paradigm has focused on delivering cheaper consumables and essentials, housebuilders are now taking note. Idealab, an inventor/venture

capital company, estimates that the market for low-end houses could be worth half a trillion US dollars. The Chinese social housing sector is, theoretically, open to foreign players. Many entrepreneurs and innovative companies are designing prefabricated houses that provide basic accommodation with electricity, water and security – Vijay Govindarajan's 2010 challenge, which was posed in the *Harvard Business Review*, to construct houses for the poor for \$300 is credited with catalysing efforts in this area. However, recent sales of land for residential purposes in coastal Chinese cities have been reaching \$1000 per square foot. Whether the physical build can be achieved for \$300 or \$3000 therefore becomes only marginally relevant.

Land costs in China constitute a high proportion of the total costs of constructing housing, with research by one Asian broker estimating a national average of 20-30% and finding examples as high as 64% in hotspots. Private sector participation in the construction of Chinese social housing effectively requires state subsidies, which may come in the form of the sale of land by local governments at deep discounts to market prices. In this way, units can be sold to qualifying families at a discounted price to commodity housing. However, profit margins on existing subsidised construction projects are only at around 5% and the recent volatility in commodity prices means that even this low economic incentive is in jeopardy. However, developers of social housing are incentivised through other benefits on offer. In return for agreeing to build social housing at little or no profit, developers are provided credit facilities, sold desirable plots of land and given planning permission for commodity housing, which is a high margin sector. Well-established and high-level contacts with government officials are very important to getting such deals done.

Categories of Chinese housing

Commodity: Housing units built by private developers that are sold on the open market to Chinese and overseas occupiers and investors.

Economic: Social housing units offered for sale to low- and middle-income families at a 30-40% discount to their market (commodity) price.

Public rental: Social housing units rented to low- and middle-income families, including some white collar workers, and in some cities to migrant workers who do not have a local residency permit (hukou), at approximately 50% discount to the market rate.

Low rental: Social housing units rented to low income families, who have a hukou at an 80-90% discount to the market rate.

5. Data compiled by University of Nottingham, School of Contemporary Chinese Studies.

This favours housebuilders based in the city, or region of China, where the development is taking place, and results in a very fragmented market, as is evidenced by the largest builder of social housing holding just a 3% national market share.

Societal risks from the house building boom

Health and safety: Investigative media regularly report fatalities, but there are no reliable figures available for Chinese construction. Several journalists reported a number of deaths on the sites of the main Beijing Olympics venues. These were initially denied, although some were later admitted by officials. Association with projects in which there are fatalities can lead to reputational difficulties for companies.

Water scarcity: China faces longer-term regional water scarcity, as the map below illustrates, a problem which reputedly barely figures in local housing planning. In India, some high-end developments receive tap water for only a few hours of the day and Chinese residents in water-stressed areas, such as the large coastal cities of Beijing and Shanghai, may face similar future restrictions.

Utilities: China is investing in virtually every energy source that is available. Nevertheless, power shortages and rationing of energy use are becoming more commonplace. Currently, only industry and retail premises are affected but homes may also be affected if power generation fails to keep pace with local demand.

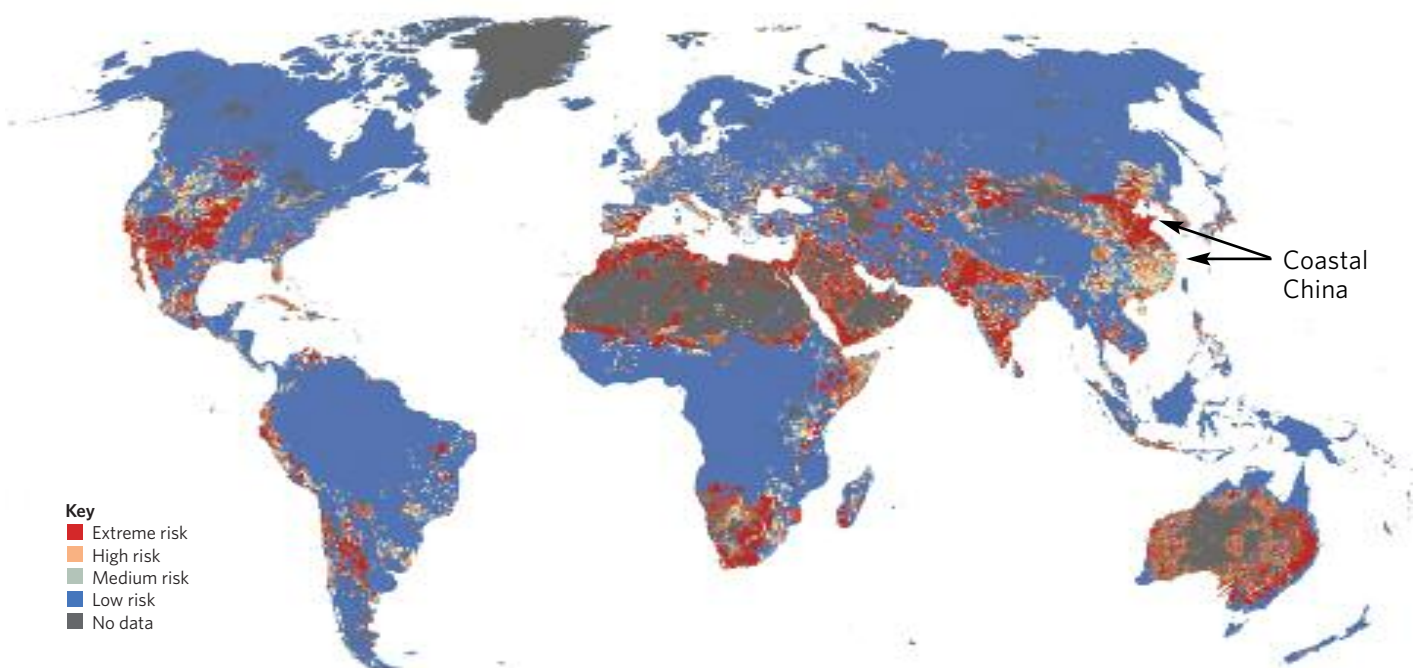
Infrastructure: China needs to build schools, hospitals and transport to keep up with the creation of suburbs and cities. Currently, new residents of many housing projects face long walks to work and no health or education services. In extreme cases, this can be for a number of years.

We've been here before...

While such a huge internal migration and building programme carries material environmental and social implications, the greater risk may be systemic. Housing is both a symptom and a cause of China's credit inflation. The government has taken steps to dampen property inflation through tighter lending criteria and introducing measures that discourage ownership of multiple properties. Nevertheless, over-indebtedness in local government is a significant downside economic risk. One investment bank estimate suggests CNY 2-3 trillion of local government loans are already in default, a number which could double if economic growth slows. Given the vast central government reserves that are potentially available for further bail-outs, Chinese banks are perhaps unlikely to suffer a banking crisis like that suffered in major developed economies in 2008/09. However, there is a need to tighten up credit supply, with government policies already trying to slow lending and growth.

With at least a partial mirroring of the US experience, a Chinese credit crunch would put the property market at risk of serious correction, as both buyers and developers struggle to raise finance. This may have a negative impact on construction and related

WATER STRESS INDEX



Source: Maplecroft.

industries. With a housing crash, the ever-growing collateral value that landbanks give local governments during a property boom would decrease. It would also limit their ability to finance social housing projects or infrastructure. In addition, the low yield from social rental housing would be reduced as job losses lead to rent defaults. The spread of borrowing rate to rental income increases with rising refinancing costs. Housing and land, which could have been sold but was instead kept on local governments' balance sheets, provides added financial pressure with the rebalancing of economic and rental housing. With rental yields being much lower than even the low borrowing rates, which local governments receive, further bail-outs seem inevitable in the longer-term.

Corporate exposure to the Chinese property market

There is no moral quandary for local governments to answer in trying to house lower-income households and migrant workers. Overcrowding, growth in slums and shanty-towns are a major problem for cities and municipalities across the country. But, in borrowing so extensively to address this, the bigger social risk may be that the financial system is placed under stress and the industrial growth which caused the rapid urbanisation in the first instance slows or stops. Rising unemployment, negative equity and further unrest can then be added to the mix in cities that are already exposed to serious environmental and social challenges.

The exposure of Newton's clients to fluctuations in the Chinese social house building sector is, predominantly, through the huge demand for raw materials. China is the major source of revenue for many metals, mining and freight companies. Essential to companies with significant exposure to Chinese house building is how they are hedging against a sector downturn. Beyond this, Newton remains cognisant in its investment decision-making processes that all companies with exposure to China, and indeed closely coupled economies, would face pressure on their revenues with a property market correction.

EC Green Paper on Corporate Governance

The post-crisis challenge is to “ensure sustainable growth and build a stronger international financial system” ... corporate governance is “*one means to curb harmful short-termism and excessive risk-taking*”⁶

The European Commission (EC) has published a consultative Green Paper, seeking input from interested parties on how to improve corporate governance mechanisms across its jurisdiction. It considers traditional areas of corporate governance risk including board structure and executive remuneration, while extending the debate to some of the less-visited areas of discussion, which Newton welcomes. Understanding regulatory and policy developments governing the markets is crucial to Newton's investment process and central to the *more government* theme.

Maintenance of comply-or-explain in Europe?

The Green Paper, which follows the EC's 2010 consultation relating to corporate governance in the Financial Services sector, was expected by many in the market to favour a move away from the current 'comply-or-explain' model for listed companies, towards a harder legislative approach, as historically favoured in the US. Instead, the Paper requests feedback on proposals which set the scene for a tightening, but nevertheless, retention of the comply-or-explain model. Specifically, respondents are asked if companies failing to comply with corporate governance codes should be required to provide detailed explanations for such departures and describe the alternative solutions adopted. Furthermore, the Green Paper posits the idea of third parties monitoring the quality of the explanations. Codes relating to responsible investment change and develop, reflecting ongoing debate and consultation on effective means of ensuring that shareholders' interests are protected. Newton believes that a prescriptive approach to corporate governance is not appropriate, owing to the fact that technical compliance can be achieved while the spirit is ignored or misunderstood. Therefore, Newton broadly supports the EC leaning towards retention of the more flexible paradigm of comply-or-explain.

6. EC Green Paper “The EU corporate governance framework”.

7. Newton's responsible investment policies and principles 2010, page 15.

An effective and accountable board

The EC requests comments in previously much-debated areas of corporate governance relating to management, including board structure and diversity, profiles and workloads of directors, external evaluation and appropriateness of remuneration. The paper then asks respondents whether the board should approve and take responsibility for the company's risk management and appetite, including relevant environmental and social risks, and subsequently report on these to shareholders. Newton welcomes this broadening of the traditional scope of board responsibilities. Management of sustainability issues is integral to an enduring business model and therefore an operational factor, not purely a reputational risk.

The role of proxy advisors

Respondents are asked whether proxy advisors should be required to increase transparency around their analytical methods, conflicts of interest and policies for managing these. Also respondents are asked if proxy advisors should be restricted from providing consulting services to companies on which they provide analysis. Newton believes that analytical methods, methodology behind ratings and scoring frameworks should be made available to subscribers of such service providers. In addition, conflicts of interest should be clearly and specifically disclosed on a company by company basis.

Does size matter

Should proportionality be introduced into corporate governance regimes across different sized listed and unlisted companies? Given minimum standards, Newton does not believe that a one-size-fits-all approach leads to optimum corporate governance. Large companies are often more complex in structure than smaller companies. This requires larger complex companies to dedicate more resources to ensure effective corporate governance policies, practices and procedures, and to address the wider issues not faced by less complex companies.

Shareholder issues

A number of lines of enquiry are opened which address shareholder rights and actions. Respondents are asked if: they see a need for a technical and/or legal mechanism to help companies identify their shareholders in order to facilitate dialogue with shareholders; minority shareholders need additional rights to represent their interests, effectively, in companies with controlling or dominant shareholders; minority shareholders need more protection against related party transactions, and; measures can be taken to promote employee share ownership. Broadly, Newton believes its clients' interests will be served by measures designed to protect the interests of all minority shareholders that establish a framework where certain shareholders or connected parties are not favoured over unrelated minority shareholders.

Asset managers

In relation to asset managers with long-term mandates, the EC seeks guidance on appropriate incentive structures and performance evaluation. In Newton's experience, the appropriateness of incentive structures depends on the client's investment mandate. For actively managed money, for example, Newton supports a performance fees based structure.

Newton believes that corporate scandals and the recent financial crisis have led to new and improved legislation and codes, and to investors increasingly paying a premium to invest in markets and companies where corporate governance is perceived to be strong. Newton clients' interests are best served through the iterative evolution of reactive and proactive corporate governance. The European Commission's consultative process is therefore welcomed.

Biofuels: Long term energy trends remain positive for the sector

The biofuels industry has been steadily growing over the past decade. Global production of fuel ethanol rose from 30.8b litres in 2004 to 67b litres in 2008, with biodiesel growing from 2.3b litres to 14.7b litres. However, the first generation of biofuels, using crops such as sugar, corn, soya beans, oil-seed rape and palm fruit, failed to deliver against certain expectations. Evidence countered early hopes of a significant overall decrease in greenhouse gas emissions within the energy mix, as forests, which naturally absorb carbon dioxide, were cleared to grow crops for biofuels. This offsets any gains achieved at the combustion end-point. Meanwhile, the need for land and crops as biofuel feedstocks has been widely cited as a major factor in driving up food prices since 2008. This has led to social unrest, in countries such as Egypt, and the 'food-or-fuel' debate, which continues today.

Biofuel production also faces natural resource input scarcity and localised environmental downside risks. Water demand is high in areas where it is already a scarce resource and agricultural chemicals used in pesticides and fertilisers have negative impacts, such as the 'deadzone' in the Gulf of Mexico where rivers pour agri-chemicals from the interior farmlands into the sea. In addition, biofuels can lead to landchange, deforestation and monocultures, which can have a negative impact on biodiversity and ecosystem services.

Against this backdrop, continued enthusiasm for and increased investment in biofuels may seem improbable. However, demand is set to continue on its upward trajectory, owing to factors such as the EU setting a target of 10% of transportation fuel from biofuels by 2020, and the US aiming for 130b litres/year by 2022. These targets have been backed up by a 'carrot-and-stick' mixed policy response, including tax credits, import tariffs and mandated ethanol proportions in some jurisdictions. A leading financial sector climate change institute has predicted a fivefold increase in

biofuel production between 2009 and 2020, offering significant opportunities for investors in companies that provide biofuels technology, own biomass assets including forestry, trade agricultural commodities, manage waste, provide agricultural inputs and own the energy supply chain.

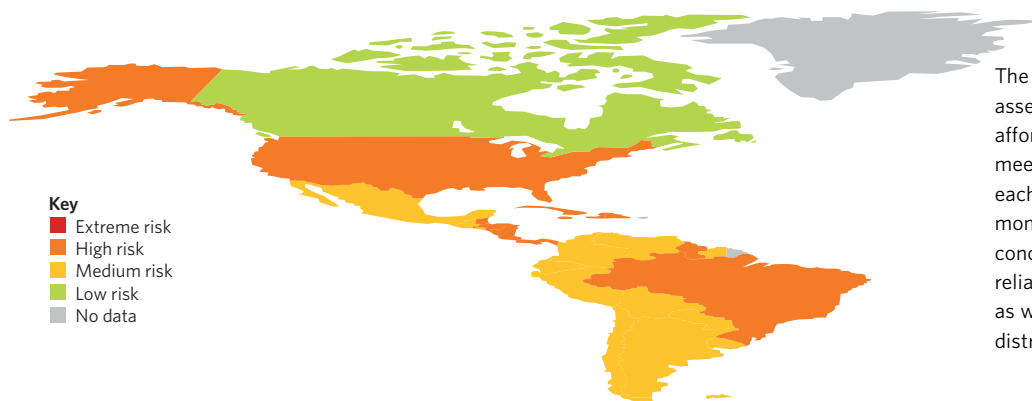
Energy supply is one of Newton's global investment themes. This theme identifies multiple factors that are producing a growing global energy gap, including underinvestment in infrastructure, geographic concentration of easily recoverable reserves and resource nationalism. A further exacerbating factor has been the slow progress of alternative energies. Wind and solar have struggled with high costs and inefficient energy storage. With high oil prices, a drive for low-carbon energy, concerns over US energy security, doubts over nuclear energy and the emergence of improved technologies and processes, Newton believes that biofuels have a growing role to play in the energy mix. However, the US Senate has recently voted to withdraw tax credits and import tariffs, creating a potential downside risk to the industry. Biofuels remain a complex sector and mitigating clients' risks requires an appreciation of the drivers of the global energy sector and an informed dialogue with companies.

Long-term drivers for biofuels

New inputs and technologies reach break even economics

Second generation biofuels (2G) convert cellulosic biomass (including agricultural and forestry residues) and advanced feedstock (such as jatropha and algae). While technological advancement remains one of the principle risks facing its wide-scale use, bio-chemical enzymatic processes to make ethanol are approaching break even economics and 2G fuels using this technology are now moving from the laboratory to commercial energy production. A recent academic study from the US estimated that 32% of global gasoline consumption could be met through crop residues and wastes alone. Further advanced cellulosic sources are expected to come on-stream as oil majors make funding commitments to feedstocks, like algae, and

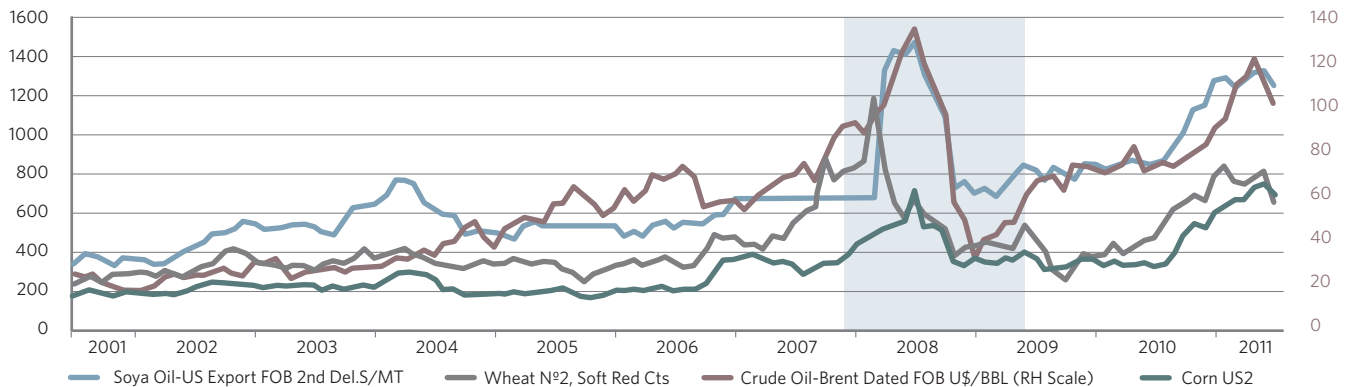
ENERGY SECURITY (SHORT TERM) INDEX



The Energy Security (short term) Index assesses the risk posed to the availability, affordability and continuity of energy to meet consumption requirements within each country on a timescale of weeks to months. The index considers data concerning volume, diversity, security and reliance upon sources of imported energy as well as the price of fuel and the distribution infrastructure in a country.

Source: Maplecroft

GRAIN AND OIL CORRELATION



Source: Thomson Reuters Datastream

sustainable forestry enterprises search for revenue diversification away from timber and invest in energy from woody biomass. Proponents anticipate that 2G can solve the specific shortcomings of biofuels, notably their carbon footprint and the competition for scarce food crops and land.

High oil prices

Input costs for growing crops increase when oil prices rise due to oil's high bearing on fertiliser and transport costs. The chart above illustrates this positive correlation. But with more expensive oil comes a greater incentive to buy or invest in alternatives, which previously were too expensive. The viability of biofuels increases with a general trend of higher oil prices. The oil/biofuels production cost spread will be a key market driver in the development and future uptake of 2G biofuels.

Low-carbon energy

Policy makers around the world are trying to cut carbon emissions. Estimates suggest that by 2020, the low carbon energy market will be worth USD 2.2trn, three times today's level, taking it from 1.3% of global GDP to 2.1%. There are opportunities to reduce the carbon footprint of hydrocarbon energy sources. Nevertheless, a substantial increase in production of low carbon energies is also required. The biofuels industry is expected to be a major beneficiary. Ethanol is already blended into gasoline, and vehicles that can flexibly run on biofuels or hydrocarbons, or a combination, are already commercially produced in some countries, notably Brazil. Reductions in greenhouse gas emissions from 2G biofuels could be as high as 90% against current hydrocarbon levels, which provides a further attractive outcome for policy makers who provide incentives for biofuels. It is predicted that 2G will be the predominant renewable energy source for transportation by 2020.

With the lack of full carbon pricing, hydrocarbons are able to enjoy a competitive advantage over other energy sources. If carbon emissions are fairly priced and this environmental service

carries a charge, biofuels will be able to compete on price given their lower carbon cost. Investments in the biofuels sector should therefore be made with reference to expected catalysts from further carbon regulation.

US energy security

The USA is the largest producer and consumer of bioethanol. One third of the total US corn crop is used for ethanol production. National concerns about long-term energy security stem from growing dependence on imported oil from politically unstable or ideologically unaligned states in the Middle East and Latin America. The proceeding map shows short-term availability, affordability and continuity of energy to meet US consumption requirements to be high risk when compared to the rest of the Americas. There is, therefore, a strong economic incentive, increasingly backed by political rhetoric, to seek new domestically-produced sources of energy. This drives the rush into biofuels and other sources, such as shale gas.

The decision of the US senate to repeal the current ethanol tax credit (45 cents per litre) and ethanol import tariffs may look like a negative sign for the domestic biofuels sector. However, Newton believes that the industry is now mature and able to withstand this loss of protectionism as ethanol is profitable without subsidies at current corn prices, which are already trading at historically high levels.

New uncertainties over nuclear power

Nuclear power regained favour with energy policy makers in the last fifteen years. Many countries have been planning to partially offset their hydrocarbon dependence by increasing their output of nuclear generated energy. However, the Fukushima nuclear crisis, which followed the devastating earthquake of March 2011, has raised a new debate about the role of nuclear in the global energy mix, and indeed increased the costs per unit of energy produced. Germany and Italy have, effectively, legislated for a nuclear-free future and this further raises expectations of other alternatives being explored, both in terms of volume, cost and timing.

Long-term positive outlook

With a short to medium-term outlook, investing in biofuels is, to a material extent, an event-driven strategy, with regulatory decisions providing both downside signals and positive catalysts. This is particularly true while biofuels remain mostly a developing energy source, competing with the established hydrocarbons industry. Free market drivers may not be sufficient to drive 2G biofuels forward, meaning financial and regulatory support from governments would therefore be needed. In the US, renewable fuel standards and the Clean Air Act mandate an ethanol proportion to gasoline. Brazil is a relatively mature industry, currently requiring ethanol blends to account for 20-25% in gasoline. Quotas are also in place in the EU and other jurisdictions. These have provided a catalyst for biofuels.

The United Nations Environment Programme has called for the removal of subsidies and blending ratios for first generation biofuels, which would promote a shift to 2G technologies and address, in part, the food vs. fuel debate. To an extent this is happening in the US, via the repealing of the ethanol tax credit and import tariffs. Should such repeals be made in other jurisdictions where the industry is less mature, their timing will be important for the success of 2G biofuels. If the first generation has not reached critical mass as a competitor to hydrocarbons, then 2G technologies may struggle to gain a foothold.

Using environmental inputs in a sustainable way remains a challenge for the industry. However, in the long-term, drivers for biofuels are very positive given rapid technological progress, soaring energy demand, carbon targets, energy security and the lack of political will for, or suitability of, other alternatives to hydrocarbons as sources of energy.

Engaging with companies on biofuels

A company's understanding of its sourcing of raw materials is essential in minimising the reputational risks that arise from their business activities. As a result, the Forest Footprint Disclosure Project (FFDP) was set up to promote business leadership in the area of conserving forests. Newton reported on progress with the FFDP in a recent thematic publication.⁸ Newton regularly engages with investee companies on the risks associated with biofuels and, as a FFDP signatory, encourages companies to respond to questionnaires on this subject. In further examples of related engagement: **Neste Oil**, facing a shareholder resolution at its 2010 AGM requesting that the company end the use of palm oil, disclosed their commitment to improving sustainable sourcing by 2015 through certification targets, and; **Royal Dutch Shell** stated in a 2010 meeting, and reiterated in a 2011 meeting, with Newton that it would only invest in biofuels if it was able to justify the investment based on environmental grounds.

Corporate governance in Singapore

In October 2010, the Asian Corporate Governance Association and CLSA Asia-Pacific Markets released the latest Corporate Governance Watch Asia rankings. Singapore was considered to have the best corporate governance, while Hong Kong and Japan were ranked behind them in second and third, respectively. However, these podium places are perhaps more indicative of poor practices in the region than of strong domestic practices. The analysts who carried out the research claim that an 80 per cent score is required to meet world-class standards. Singapore is now at 67 per cent, despite a decade of reform, up just two percentage points since the study was last conducted in 2007.

In a positive move, in a June 2011 consultation, the Singapore Exchange proposed listing rule amendments designed "to enhance shareholder engagement, encourage participation at general meetings and increase disclosure of voting outcomes". Specifically, the proposed rule revisions are as follows:

Hold general meetings in Singapore

All primary-listed companies should hold general meetings in Singapore unless prohibited by relevant laws and regulations and held in the jurisdiction of its incorporation. Where foreign-incorporated issuers are legally restricted from holding general meetings outside those jurisdictions, the company should hold a separate meeting in Singapore at which shareholders can meet, hear from and question board members and management.

Vote by poll at all general meetings

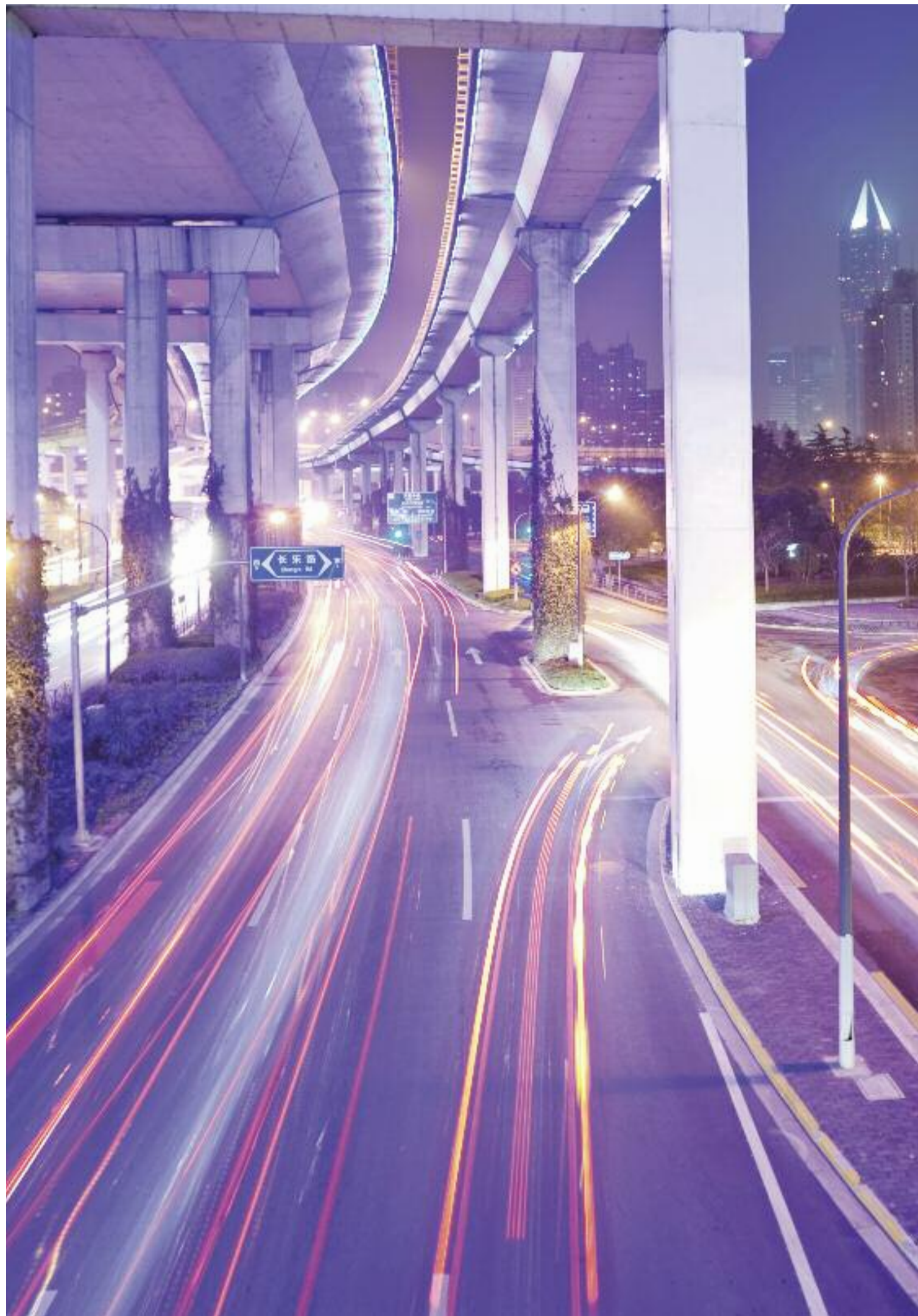
All listed companies should adopt voting by poll, instead of on a show of hands. This allocates the rights to each vote according to the size of shareholdings and limits the possibility of shareholders voting by proxy being disenfranchised.

Disclose details of the outcome of general meetings

Companies should enhance their accountability and transparency by making prompt disclosure of the results of polls, including the number of proxy votes cast and the number of votes for and against each resolution.

An improving market for investors

Newton invests in Singapore-listed companies and welcomes these positive moves towards best corporate governance practice, which we believe will help to protect clients' interests. The measures, if implemented, will also position Singapore's investment environment closer to that of markets where corporate governance is perceived as strong, such as the UK. This, in turn, will increase interest from investors with a lower risk mandate, who previously may have limited their exposure to Singapore for reasons relating to relative corporate governance risk.



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