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Decarbonise/ Re-energise 2016

Paris 10 March, The Hague 14 March, Stockholm 16 March, London 22 March



Green Paper

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Introduction

Investors have been grappling with the serious environmental, social and financial implications of climate change for a number of years now, with some (notably among the largest pension schemes) having taken steps to address the issue, while many others are considering their position or have yet to respond. A large number are now asking preliminary and more developed questions on how they might do so.

This is in part due to the December 2015 Paris COP21 climate change agreement, which looks likely to represent a tipping point for climate finance. In Paris, 195 countries agreed to work together to substantially curb global warming by limiting it to a maximum of to 2°C, possibly 1.5°C, and aim for net zero carbon emissions by the second half of the 21st century.

The conference reached a number of important conclusions on climate change that will be ratified in April 2016, once at least 55 countries accounting for 55 per cent of global emissions have formally signed the agreement.

The economic and social implications will be significant in the short, medium and longer term. These implications are manifold and complex.

This makes the timing of RI's Decarbonise/Re-energise workshop roadshows for investors highly topical.

Only in articulating the major questions to be addressed on climate finance, then bringing together investment professionals to discuss them, and summarizing the major follow-up action/reflection points can progress be made.

The RI Decarbonise/Re-energise Workshops aim to incubate this thought and action leadership.

The format of the roadshow workshops is as follows:

1. Pre-roadshow publication of Green Paper input document and workshop questions, broken down into four discussion segments.
2. One-day workshop based on four round table sessions to discuss and share knowledge on the four discussion segments.
3. Publication of a White Paper after the roadshows, synthesizing the main feedback from the workshop discussions

The first series of Decarbonise/Re-energise workshops will visit:



Paris:
Thursday 10th March 2016



The Hague:
Monday 14th March 2016



Stockholm:
Wednesday 16th March 2016



London:
Tuesday 22nd March 2016

The purpose of this Decarbonise/Re-energise Green Paper is to act as a 'guidance' document for workshop participants to see the broad outline of the subject and then help them in honing down their thoughts on the related detail in preparation for the workshop discussion. It is not a definitive paper on climate change finance. Rather, it seeks (as Green Papers should) to be 'food for thought' for fruitful discussion amongst practitioners.



The Green Paper aims to:

1. Quickly and clearly explain the macro policy/economic backdrop to the decarbonisation/low carbon investment discussion for institutional investors ahead of the RI Decarbonise/Re-energise workshops.
2. Highlight the key climate change policy and regulation, energy finance, technical/implementation questions, and break this down into four areas for further discussion:
 - A. Decarbonise: **Regulation/carbon measurement**
 - B. Decarbonise: **Investment application**
 - C. Re-energise: **Investing in the low carbon economy**
 - D. Re-energise: **Future product development, reporting, assessment and corporate engagement**
3. Drill down into the key questions on these subject areas that investors should discuss/share knowledge on at the Workshops.

The Decarbonise-Re-energise Roadshow Workshops are split into four round table 'sessions' with three to four individual round tables taking place simultaneously on the following format:

1. One of the table hosts will quickly outline the specific areas of that section's discussion points to the whole room (a different host will introduce the subsequent section, and so on).
2. The hosts will then focus on their own specific tables and ask the attendees at the table to briefly introduce themselves (participants will move to a different table after each session) and facilitate the discussion.
3. Attendees will address the key questions outlined as well as discuss and share knowledge on their own perspectives. The discussion may take detours or move in different directions. This is fine, and even desirable. The questions are a guide, not a roadmap!
4. A rapporteur from the host at each table will synthesize the main points discussed after each section and briefly report these back to the whole workshop.

Each session runs for 80 minutes:

Setting the Scene: (10 minutes): One 'session' host addresses the whole room (each session will be introduced by a different host): they introduce themselves, the session and the key discussion questions.

Roundtable Discussion: (50 minutes): the delegates at each table have an in depth discussion on the questions for the session, facilitated by the table hosts.

Reporting Back: (5 minutes per table, 20 minutes in total): Each table Rapporteur (A,B,C,D) reports back to the entire room with a précis of their round table discussion points.

Table change: The table participants change table, and the new session host introduces the following session.

White Paper:

The outline notes of the Round Table Discussions will be fed back to Responsible Investor Managing Editor, Hugh Wheelan, and written up as a White Paper for the participants. This will comprise a broad synthesis of the main points gathered by the Rapporteurs, which can feed internal strategy and investment product engagement.

The Workshop content:**The COP21 Climate Agreement and the implications for investors.**

It's important to frame any current discussion on decarbonisation/investing in a low carbon economy post COP21 by looking at the broad global climate targets agreed at COP21 by the Intergovernmental Panel on Climate Change (IPCC). These are:

1. The goal of limiting global warming to below 2°C above pre industrial levels (APIL), and a commitment by some countries to a 1.5°C target.
2. Pledges by 160+ countries as to how they plan to meet these targets – known as Intended Nationally Determined Commitments (INDCs), which account for 90% of global energy-related carbon emissions.
3. Five-year review periods for the INDCs with countries to resubmit every five years. The agreement says commitments should not be watered down, and encourages long-term targets.
4. A net zero carbon emissions goal post 2050 with CO₂ emissions completely offset or captured/stored.
5. A climate financing goal of \$100bn per year by 2020, with plans to increase it over time.



Questions, questions....

The COP21 Climate Agreement throws up a number of big questions that investors should have in mind before entering into the details around climate finance.

1. What is the legal status of the COP21 agreement.?

The agreement is not legally binding, but the agreed reporting mechanisms will be, as is the five-year review process.

2. What are the INDCs?

They will be each country's policy roadmap for decarbonisation such as low carbon transport, housing, infrastructure or energy saving. We have already reached a 1°C rise in warming versus APIL. Therefore, the INDCs will have to be tough to meet 2030 targets. The International Energy Agency's (IEA) Energy Outlook for 2015 (released just prior to COP21) said the INDCs were consistent with a temperature rise of 2.7 °C, with investment needs of \$13.5 trillion in low-carbon technologies & efficiency to 2030. Investors will be key in this financing.

3. Who will police the five-year review INDC reviews?

The United Nations, which oversees the Framework Convention on Climate Change (UNFCCC) structure, under which the COP21 agreement was made, will administer the process. Civil society, peer governments and the public will likely provide pressure for implementation, which in turn will fuel demands for increased pressure for disclosure and transparency.

4. What are the global energy mix predictions out to 2030 and beyond?

The International Energy Agency's World Energy Outlook 2015 predicts that the share of low-carbon power generation could grow to almost 45% in 2030, potentially rising to 65% by 2050. www.worldenergyoutlook.org/pressmedia/recentpresentations/151110_WEO2015_presentation.pdf While 2015 was a year of record investment in renewable energy, the sector still accounts for low single digit figures of the global energy mix. At the same time, energy demand is growing enormously, especially in India and China.

5. What does the climate financing goal of \$100bn per year mean?

This is still to be clarified. The World Bank says there is a gap of \$70bn in existing promises. Closing that gap, and priming the flow of capital - to clearly economical ends - is critical to building the trust necessary to reach a robust follow-up to the deal in Paris.

The macro-economic/political questions above are the backdrop to the series of related questions below that will form the backbone of discussion at the RI Decarbonise-Re-energise Roadshow Workshops.



The outline questions/statements overleaf were initially formulated in discussion with investment professionals to hone them down to the most relevant topic areas.

They are accompanied by related information support where necessary:



1. Decarbonise: Regulation/carbon measurement

What is decarbonisation, and why should/must investors do it? How to start?

Decarbonisation is the reduction of CO₂ emissions within investment portfolios. Climate change is increasingly recognised as a serious risk to the environment, and has subsequent related financial consequences (weather, flooding, insurance, agriculture, related regulation, etc) and inverse opportunities in the same areas. Institutional investors manage inter-generational assets over the time frame cited by scientists and politicians for major climate change and financial implications.

Regulation: what is internationally/domestically applicable to investors in terms of current environmental legislation?

Many countries have domestic environmental regulations, as do regional blocs (EU targets, for example). Some regions and states have introduced CO₂ emissions trading regimes. The IPCC COP21 agreement and NDCs will introduce a series of transparent country investment/regulation plans to keep emissions to below 2-degrees warming.

Testing the stranded assets thesis

Research bodies including Carbon Tracker and the Smith School of Enterprise at Oxford University have calculated that between 60-80% of the coal, oil and gas reserves of publicly listed companies are 'unburnable' if the world is to have a chance of not exceeding global warming of 2°C. The assumptions are broadly based on public policy action to keep CO₂ emissions below 2 degrees, the growth of alternative energy supplies and the currently complexity of CO₂ capture/storage.

What has been the impact to date of carbon pricing? Is there the political will to toughen up pricing?

Launched in 2005, the EU Emissions Trading System (EU ETS) has suffered from a serious drop in pricing and credibility as a result of excess market supply.

But, carbon markets have evolved elsewhere, notably in China, California and Quebec, and now total \$30bn-\$40bn in trade volume. Circa 60 national and sub-national jurisdictions have launched – or plan to launch – carbon pricing initiatives, such as emission trading schemes and carbon taxes, which are likely to tighten considerably over time to meet CO₂ reduction goals.

What has COP21 changed?

On top of the climate agreement and INDCs, observers believe COP21 will lead to increased public pressure for climate change disclosure and transparency from companies and finance.

The potential legal/regulatory barriers to further environmental regulation?

These include: legal challenges, consumer pricing issues, employment questions and political risk.

Investee companies and carbon reporting (scopes 1-3 and beyond). The importance of carbon footprinting, and its limitations: measurement, reporting, accounting.

Developed vs. emerging markets.

Carbon is broadly measured/modelled on a company's energy inputs and consumption. Reporting is voluntary and differs enormously across industry sectors.

The Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD).

A Task Force on Climate-related Financial Disclosures (TCFD) chaired by former New York Mayor, Michael Bloomberg, was announced by Bank of England Governor Mark Carney, who chairs the FSB, at the COP21 conference. The FSB is the body that coordinates national financial authorities and international standard setting bodies. In January, it announced its initial members. The Task Force's brief is to consider the physical, liability and transition risks associated with climate change and what constitutes effective corporate financial disclosures in this area.

Additional metrics/analyses besides carbon risk: i.e. water risk, broad climate risk, etc.

Alongside carbon risk there are a number of other major environmental risks that merit attention by investors. For example, water stress globally is proving to be a major source of concern regarding drought, agricultural impact and water provision for companies and individuals in urban areas. Pollution risk is also another distinct area of environmental concern in terms of living standards and regulation (air quality, chemical particulate reporting).

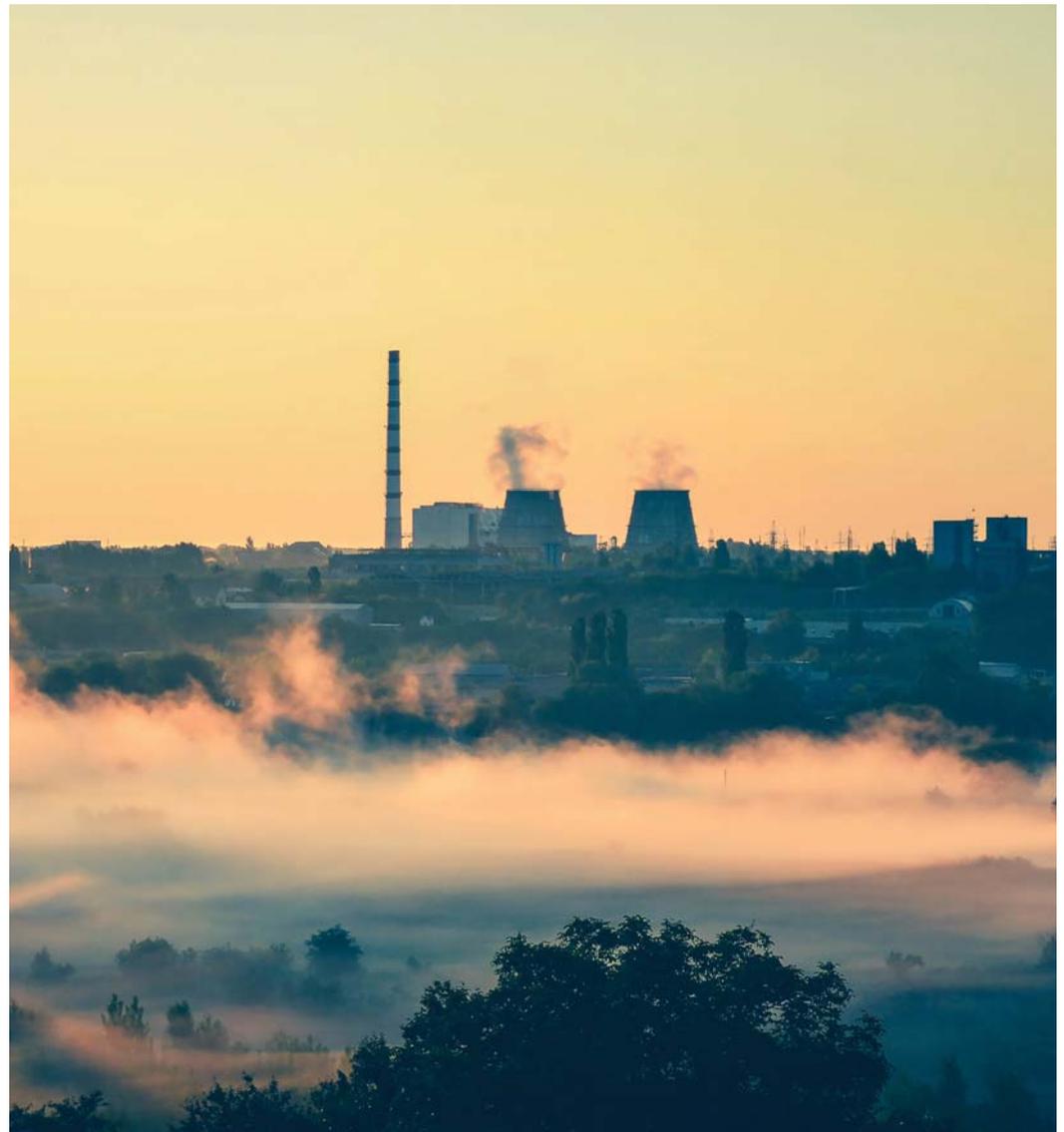
How should investors respond to the fossil fuel divestment campaign?

The growth and spread of these campaigns has surprised many, and been taken up by major media organisations to become large-scale public campaigns and legal challenges akin to those of the South African Apartheid era or tobacco.



Part 1. Workshop questions:

1. How can investors begin to assess the urgency of a response to climate change as a risk to investments? What are those principal risks and where can relevant research and data be sourced? What should the first steps be in thinking about decarbonisation?
2. What regulations impact investors now and could do so in the short-/medium- and long-term. How should they respond? What could the investment opportunities be within the INDCs and how can they be researched/accessed?
3. How robust is the Stranded Assets thesis. What could it really mean for investments? How might investors respond?
4. How relevant is carbon pricing now for investors, and how might this change?
5. What are the most relevant outputs of COP21 and how will they affect investment?
6. What should investors know about the carbon, water and pollution measurement of their investee companies, and why? What should they know about their own carbon footprint, and why? What are the relevant local and international regulations on related reporting? Where is this reporting heading as a result of the FSB's work?
7. How are investors responding to fossil fuel divestment challenges? How are these campaigns developing? What is the credible way to respond?



2. Decarbonise: Investment application



What does decarbonising mean (2 degrees scenario)?

Decarbonisation is usually based around four strategies:

1. Divestment from fossil fuel companies.
2. Current portfolio rebalancing toward companies via a low carbon index.
3. Carbon neutralisation via stock selection.
4. Allocation to green investment strategies: renewables, green themes, green bonds.

The aim is usually to try to align investment institutions with the 2-degrees warming aims of global governments while positioning investment portfolios based on the risk/return opportunities of climate change and the related economics/policy.

Defining investment beliefs in this area? Can you decarbonise a portfolio when the real economy isn't decarbonising?

Investment beliefs are critical in deciding how/why an investor may act. The micro and macro implications of a decarbonisation strategy need to be examined, as do the potential to influence broader economic strategy to favour/underpin and desired investment moves. (i.e. political lobbying on a stable carbon price/regulatory lobbying for clear, viable and durable tariffs for renewables).

Climate change in stock exchange listing requirements.

Global stock exchanges have been tightening their listing criteria for constituent corporates and IPOs as part of the Sustainable Stock Exchange Initiative. This is important for investors buying into IPOs and for knowing what environmental information requirements are common market staples.

Environmental risks/returns across industry sectors: data sources, portfolio analytics.

Different industry sectors have very different 'direct' environmental/energy profiles (Scope 1), related subsidiary company profiles or 'indirect' energy use profiles (scope 2), and different 'external indirect' activity/customer use profiles (scope 3), as well as different water use and environmental pollution profiles. Understanding these is key to assessing corporate risk/return opportunities around climate change.

Environmental risks/returns across asset classes: data sources, portfolio analytics.

In the same way, different asset classes have very different profiles in terms of environmental impact; some direct, some indirect. Understanding these is key to assessing the risk/return opportunities around climate change. For example, real estate will be concerned by energy regulation, building standards, pricing implications, etc.

Commodities are more influenced by weather, drought, access and population issues.

How can investors start thinking about changing current investments?

Actuaries have begun raising issues about the potential effects of climate change on asset values, investment returns and sponsor covenants as well as pension scheme liability cash flows such as mortality. Investment consultants have begun to assess the long-term strategic implications of the macro environmental theme and underlying issues. Asset managers are formulating strategies, products and investment approaches based on these themes. Research houses, including broker dealers are producing significant related reports and recommendations. As well as internal strategizing, asset owners need to assess these topics before thinking about a change to a low carbon investment strategy.

Rebalancing from low carbon to high: what are the investment implications? Will investors miss out on high returns from fossil fuels?

Baseline questions: what does a low carbon strategy mean for strategic asset allocation, diversification, sector coverage, tracking error, investment style and broad governance?

What role can indices play in decarbonising portfolios? How should they be constructed?

The introduction of low carbon indices is a relatively new phenomenon, but has significant potential if one considers that the global indexing market is estimated to be worth some \$10 trillion. There are several approaches being developed and investors need to examine them against the baseline questions above.

What impact does decarbonising actually have on the climate? How do you measure this, or verify this?

The adjunct question to the low carbon index strategy, and to any other investment approach that purports to lower carbon exposure is to be able to verify the investment implications of such strategies (i.e. no loss of returns, tracking error, etc) and measure the actual reduction in CO₂ emissions against the previous output.

2. Decarbonise: Investment application

Best practice: what are peer investors doing now, and why?

There are a number of asset owners that have taken lead positions on decarbonisation. Perhaps the most widely known approach to date in Europe is the Swedish government pension buffer fund, AP4's approach based on a research paper, titled: "Hedging Climate Risk", which proposes a "simple dynamic investment strategy that allows long-term passive investors – a huge institutional investor clientele comprising pension funds, insurance and re- insurance companies and sovereign wealth funds – to significantly hedge climate risk while minimizing the risk of sacrificing financial returns". Workshop attendees in each market may have internal practices to report or external examples of peers that have started to take specific decarbonisation steps.

Part 2. Workshop questions:

1. What are the advantages/disadvantages of the four main outlined decarbonisation strategies? Are there other strategies that are rising in profile? How can/should investment beliefs push investors towards one or other solution?
2. How should asset owners look at climate related company and sector research; and how might they respond? Likewise, how should they start thinking about which asset classes to decarbonise first, and why? What are the first steps and how should they then be developed.
3. Are the current actuarial/investment advisory channels set up to talk effectively about low carbon approaches, if so, how? Is this changing? Who is doing what kind of climate work?
4. What are the investment implications of different low carbon strategies? Will investors miss out on high returns from fossil fuels? How sure can investors be that policy intentions will turn into pricing signals?
5. Are low carbon indices really as simple as they seem. How do they work? What do they hedge and what do they change in terms of investment profile?
6. How can an investor calculate whether their decarbonisation approach actually has environmental benefit, and how much?



3. Re-energise: Investing in the low carbon economy.

What research/advice should investors be looking at regarding 2 degrees warming policy/macro-economic/investment scenarios?

What do the COP21 Intended Nationally Determined Contributions (INDCs) mean regionally/globally for environmental investment?

Over 160 countries – responsible for about two-thirds of global emissions – have come up with GHG emissions reduction targets, known as Intended Nationally Determined Contributions (INDCs), which were called for by the COP21 Climate Agreement. In essence, they are the policy roadmap for decarbonisation via low carbon transport, housing, infrastructure or energy saving. We have already reached a 1°C rise in warming versus APIL. Therefore, the NDCs will have to be tough to meet 2030 targets. The International Energy Agency's (IEA) Energy Outlook for 2015 (released just prior to COP21) said the NDCs were consistent with a temperature rise of 2.7 °C, with investment needs of \$13.5 trillion in low-carbon technologies & efficiency to 2030. Investors will be key in this financing. The INDCs can be seen here:

<http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx>

Carbon trading: is there a market today?

Investors need to examine the impact of pricing in carbon markets today on their low carbon strategies and extrapolate these based on future forecasts.

Low carbon investment fund opportunities/themes: current market valuations and prospects.

There are many themed climate funds in the market and investors need to decide what is appropriate for them and why, as well as the standard terms, teams (portfolio managers) and return expectations of the funds.



How to invest: equity or debt, active or passive, pure-play/hybrid, generalist or specialist funds?

Market/investment holding characteristics. Benchmarks. Product development: low carbon ETFs, etc.

Investors may have to look at the specificities of the types of companies being held by environmental themed funds and consider what benchmark is appropriate for performance measurement. Derivative products are increasingly being added to the index area (low carbon ETFs) and the characteristics of these offshoots need to be examined.

Real Estate: regulatory/tax structures, value proposition/time horizons, construction materials, power generation, energy efficiency. Direct vs. Green REITs?

Private Equity and Infrastructure : solar, wind and water public-private partnerships. YieldCos and DevCos: structures, benefits, hurdles, deal flow, fund raising, exit strategies.

Governments and multilateral development banks/agencies are increasingly raising institutional capital into infrastructure for renewable energy (solar, wind and water, etc) based on potentially interesting public/private partnerships (PPPs).

The use of 'YieldCos' has become a topic of significant interest in renewable energy finance circles in recent years. A "YieldCo" is the transfer of operating renewable energy assets into segregated operating companies that are considered as yield-producing assets.

Large energy development companies ("DevCos") have recently begun using a corporate financing structure that allows them to effectively lower their cost of capital by raising (or 'recycling') equity to finance ongoing operations and new project developments.

Standard financial assessment of these structure and vehicles needs to be looked at carefully.



Part 3. Workshop questions:

1. Where/how can investors source the most relevant research/advice on climate change investment scenarios that would inform decisions about investment into relevant thematic funds?
2. What are the investment risks and opportunities of the INDCs and how should investors assess/measure these and invest against them? How is carbon pricing evolving globally and what does/could it mean for the INDCs and related investments.
3. How should asset owners look at climate themed funds against/in comparison to so-called mainstream funds (similarities/differences): what advice to take, and what strategy to adopt?
4. Which benchmarks should be used, and why? What new products are coming to market?
5. Real estate is one of the biggest contributors to CO₂ emissions: how should investors start to decarbonise their assets. What are they doing to date? Does the value proposal: more environmentally friendly buildings, better tenancies, rents and sales, stack up? How might it?
6. How viable are the PPPs being proposed by governments/multilaterals, and how are they likely to develop. How can investors gauge the opportunity? What structures are the best for long-term investors to allocate to?



4. Re-energise: Future product development, reporting, assessment and corporate engagement.



Green bonds: what's driving the market to date? Scaling up environmental debt financing: benchmark size, secondary market, PPPs

Green bond issuance looks set to reach a record \$50bn in 2016 to add to an existing \$100bn market, which is scaling fast. It looks like being on of the biggest green financing structures of the future with huge potential. Question marks remain over accreditation and the environmental use and measurement of bond proceeds, as well as specific green issuance (many bonds are backed by broader corporate balance sheets, for example), pricing and tradability.

Measuring and reporting on environmental and social impact of investments.

How 'real' environmental impact is measured against baseline data is a moot point. The measurement of CO₂ itself is under scrutiny. In addition, the Financial Standards Board has launched a Task Force on Climate-related Financial Disclosures (TCFD) chaired by former New York Mayor and media tycoon Michael Bloomberg to consider the physical, liability and transition risks associated with climate change and what constitutes effective corporate financial disclosures in this area. Obligations on investors such as Article 173 in France under the country's energy and ecology transition law, which requires asset owners and managers to outline the greenhouse gas (GHG) emissions of their investments and contribute to the financing of a low carbon economy. The European Union is carrying out a consultation on the same theme.

What other new environmental investment vehicles are being developed?

How can investors integrate a greater appreciation of climate change and delivery of outcomes in their broad investment process?

Many responsible investors operate a strategy of ESG integration into their investment strategies, looking at the potential financial (risk/return) implications of these factors in their broad investment portfolios.



Corporate governance and engagement with investee companies.

Many investors say selling out of fossil fuel companies makes little sense because the shares will be bought by someone else and the problem shifted to less conscientious investors. As a result they prefer a strategy of engagement/share voting pressure with those companies to get the companies themselves to commit to lower carbon business planning.

Energy: geopolitics, new technology and disruption on the future energy mix.

What are the implications of a lower oil price, the shift to new or cleaner energy sources (shale, gas) the role of nuclear, and the growth and the increased pricing parity of renewables? Could technology solve the CO₂ problem. What does this all mean for the future energy mix?

How should investors be looking at environmental policy engagement?

The regulatory environment is key for policies that will underpin the decarbonisation/re-energise investment strategies outlined above. Investor groups are lobbying politicians for stable policy and pricing regimes as well as clarity around subsidies.



Part 4. Workshop questions:



1. Green bonds: who is issuing, who is investing, why, and what are the terms/investment characteristics? Where is the market going?
2. What are the most pertinent regulatory reporting developments on climate change for investors; how could they evolve and to what level?
3. How should/could climate change be looked at and reported in an ESG integration strategy across asset classes?
4. How should a low carbon voting/corporate engagement strategy be approached, how does it work, how is success judged and over what time frame?
5. What should investors know about current geopolitics, new technology and disruption on the future energy mix: what are the potential implications for investment strategies and over what timeframe?
6. How can investors lobby for supportive policy environments, what should be the aim, who is already acting and to what end?



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