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ESG and sustainable finance

Decarbonise 2016

Aligning investment portfolios
with the 2° target



Green Paper



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 green finance. In Paris, 195 countries agreed to work together to substantially curb global warming by limiting it to a maximum of 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 2016, once at least 55 countries accounting for 55 per cent of global emissions have formally signed the agreement. In September 2016, both China and the US signed up.

Subsequent to COP21, the Financial Stability Board's (central banks, finance ministries and regulators) Task Force on Climate-related Financial Disclosures (TCFD) will publish early in 2017 its recommendations on carbon reporting for corporates and investors. Legal obligations on investors are also proliferating, 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.

In addition, the G20 group of the world's leading economies, indicated at their September 5, 2016 Summit in Hangzhou, China, that they would back the COP21 Agreement by scaling up green financing and removing challenges to deployment, especially around long-term incentives and carbon data measurement.

The economic and social implications of these policy shifts will be significant in the short, medium and longer term. The implications are manifold and complex.

This makes the timing of RI's Decarbonise 2016 workshop roadshows for investors highly topical.

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

INTRODUCTION

The RI Decarbonise 2016 Workshops aim to incubate this thought and action leadership.

The format of the roadshow workshops is as follows:

Pre-roadshow publication of Green Paper input document and workshop questions, broken down into three discussion segments.

One-day workshop based on concurrent round table sessions to discuss and share knowledge on the three discussion segments.

Publication of a White Paper after the roadshows, synthesizing the main feedback from the workshop discussions.

The first series of Decarbonise workshops visited:

Paris:
Thursday 10 March

The Hague:
Monday 14 March

Stockholm:
Wednesday 16 March

London:
Tuesday 22 March

The second series will visit:

Toronto:
Tuesday 18 October

New York:
Thursday 20 October

San Francisco:
Tuesday 25 October

The third series will visit:

Copenhagen:
Tuesday 15 November

Frankfurt:
Thursday 17 November

London:
Monday 21 November

The purpose of this Decarbonise 2016 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 green 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 2016 workshops.
2. Highlight the key climate change policy and regulation, energy finance, technical/implementation questions, and break this down into three areas for further discussion:

These are:

- Carbon footprinting, data and analysis.
 - Asset allocation/investment implications of carbon data and regulatory changes.
 - Future portfolio transitioning/strategy in line with the internationally agreed 2 degrees CO2 target. 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 Roadshow Workshops

1

The Decarbonise Roadshow Workshops are split into three round table 'sessions' taking place simultaneously on the following format:

- > Responsible Investor will quickly outline the specific areas of that section's discussion points to the whole room.
- > The hosts will then focus on their own specific tables and ask the attendees at the table to briefly introduce themselves and facilitate the discussion. Table participants will switch host after each segment.
- > Attendees will address the key questions outlined and discuss/ share knowledge on their own perspectives: the discussion may take detours, move in different directions. This is fine, and even desirable. The questions are a guide, not a roadmap!
- > At the end of each session, each table host's rapporteur will synthesize the main points discussed after each section and briefly report these back to the whole workshop.

Each session runs for 70 minutes:

1. Presentation (10 minutes)
2. Roundtable Discussion (40 minutes): the delegates at each table have an in depth discussion on the questions for the session, facilitated by the table hosts.
3. 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.
4. Table change: Table hosts remain on their table as participants from each table are moved around in order to discuss with new faces on the following session.

The Decarbonise Roadshow Workshops

2

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 Dependent 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....

But, the COP21 Climate Agreement throws up a number of big questions that investors should have in mind before entering into the details around green 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 Roadshow Workshops.

The outline questions/statements below 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:

Session 1.

Carbon footprinting, data and analysis

4

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

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 carbon reporting/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.

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.

Session 1.

Carbon footprinting, data and analysis

5

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. The Task Force's brief is to consider the physical, liability and transition risks associated with climate change and what constitutes effective corporate and investor financial disclosures in this area. The TCFD will publish early in 2017 its recommendations on carbon reporting for corporates and investors.

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.

Session 1.

Workshop questions:

6

1. How can investors begin to assess the urgency of a response to climate change as a risk to their investments? Where can relevant research and data be sourced? What should the first steps be in thinking about decarbonisation?
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2. 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?
-

3. How relevant is carbon pricing now for investors, and how might this change? How should investors report their carbon footprint?
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4. How are investors responding to fossil fuel divestment challenges? How are these campaigns developing? What is the credible way to respond?

NOTES:

Session 2.

Asset allocation/investment implications of carbon data and regulatory changes

7

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 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.

Session 2.

Asset allocation/investment implications of carbon data and regulatory changes

8

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.

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 structures and vehicles needs to be looked at carefully.

Session 2.

Asset allocation/investment implications of carbon data and regulatory changes

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.

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.

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

Green bond issuance could reach a record \$100bn in 2016 to add to an existing \$100bn market, which is scaling fast. It looks like being one 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.

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.

Session 2.

Workshop questions:

10

1. What are the advantages/disadvantages of the four main outlined decarbonisation strategies? Are there other strategies that are rising in profile? How to invest: equity or debt, active or passive, pure-play/hybrid, generalist or specialist funds, green bonds?
-

NOTES:

2. How should asset owners look at climate related company and sector research; and how might they respond? What are the investment implications of different low carbon strategies? Will investors miss out on high returns from fossil fuels?
-

3. Which asset classes should be prioritised and how (i.e. real estate is one of the biggest contributors to CO2 emissions) How should/could climate change be looked at and reported in an ESG integration strategy across asset classes?
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4. How do low carbon indices work? What do they hedge and what do they change in terms of investment profile?

Session 3.

Future portfolio transitioning/ corporate engagement strategy in line with the internationally agreed 2 degrees CO2 target.

11

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>

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?

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.

Session 3.

Workshop questions:

12

1. How should a low carbon voting/corporate engagement strategy be approached, how does it work, how is success judged and over what time frame?

2. 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?

3. How robust is the Stranded Assets thesis? What could it really mean for investments? How might investors respond?

4. 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?

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