

CLIMATE RELATED SYSTEMIC RISK:
A GUIDE FOR INVESTOR ACTION

EXPOSURE DRAFT

JUNE 2016

While informed professionals in many sectors see climate risk as one of the biggest risks the world faces, most investment professionals give it a much lower priority. They are not yet awake to the fact that the likely damage due to climate change cannot be avoided by conventional techniques such as diversification, stock picking or hedging. Divest-invest and portfolio decarbonisation strategies – which have considerable value in sending signals to politicians and markets and as smart beta strategies respectively – are indirect routes to promoting an orderly transition to a low carbon economy. They focus on the first order impacts, but not the second or third order changes that can be expected given complex and inter-connected systems. In the words of John Holdren, US Presidential Science Adviser, ‘*We need to manage the unavoidable, and avoid the unmanageable.*’ Hedging, risk assessment and divestment are all about managing the unavoidable. Forceful stewardship and public engagement is about avoiding the unmanageable – ie systemic risk.

This document sets out the reasons why investors should understand and take action on systemic risk and why other stakeholders should act to ensure this happens. It provides the basis for conversations within and between investment management organisations, their asset owners and the consultants on the best way to do this. We believe that this will be found to be forceful stewardship – the collaborative use of ownership rights and influence (including AGM votes) by major institutional investors to catalyse transition plans by investee companies which are aligned with a world where average warming is kept below 2C (“<2C Transition Plans”).

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Preventable Surprises is a ‘think-do’ tank which seeks to assist institutional investors align their activities with the long-term needs of their members and customers. In so doing, we help address daunting systemic challenges such as climate disruption.

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Summary

Building on our third on-line dialogue¹, Preventable Surprises hosted a seminar to explore climate related Systemic Risks and Forceful Stewardship.²

The multi-decade transition away from fossil fuels must accelerate quickly. This transition will affect not only suppliers of fossil fuel but also heavy users and key enabler sectors (e.g. banks, insurance). To make the transition in the time required, we have to reduce use of fossil fuels per unit of economic output by 7% a year.

This stretching target will be hard to meet without making carbon capture and storage work. Wind and solar are already cost competitive with oil and gas in parts of the US and the power generation and transport sectors are likely to make the transition successfully, provided second generation biofuels are developed. The hardest challenge will be heavy industry – even by 2075, we expect oil, gas and coal will still be important sources of energy for processes such as steel making. Overall, however, we expect demand for oil gas and coal to begin to drop off sharply from 2030.

Thus climate change, in particular the direct impacts and transition challenges for several industrial sectors (ie not just fossil fuels), creates systemic risks. As well as ‘transition risk’, investors need to be alert to ‘direct risk’ and ‘legal & regulatory risk’. The actual risk to any sector (or even any single company) will be an interplay of these direct, transition and litigation risk with the total risk being multiplicative, not additive. Since these risks cannot be avoided using traditional risk management strategies, investors – especially those who have commitments to sustainability, long termism or are simply well diversified – will accept they have a share of responsibility for keeping average warming to below 2C (<2C).

Evidence suggests that current trends in climate change will result in major and unhedgeable risks to investors. Conversely, action to significantly limit climate risk will result in major and rapid shifts in economic systems and systemic shifts in corporate and asset values. These changes are unavoidable and the transitions will be messy and in part disruptive.

Estimates of systemic risk being used by the financial community are consistently underestimating second and third order risks such as the impact of climate change and resource scarcity shocks on political stability and international economic systems (e.g. food trade)

¹<https://preventablesurprises.com/blog/third-online-dialogue-infographic/>

²This paper is based on a presentation by Howard Covington and the ensuing discussion at an event organised by Preventable Surprises and Mercer and hosted by Oliver Wyman on May 23rd 2016. The participants are listed in Appendix 1.

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which are already being observed. These deficiencies are well documented and understood in the scientific and economic literature.

Systemic risks have three characteristics, which unequivocally apply to climate related risk – they are pervasive, unpredictable and interconnected. No-one, investors included, can fully imagine what climate change will be like, not least because the feedback loops are much longer and more uncertain than we are used to. However, this should be a reason for prompt action, not delay.

The challenge for investors is how to ensure transition is as “orderly” as possible so to maintain an investable environment within which they can credibly manage the value of their investments and fulfill their fiduciary duties. We recommend a strategy to ‘**SEE**’ and act on climate related systemic risk: **Scare**; **Encourage**; and **Empower**.

To scare themselves into action, and as with professionals in other sectors on which they rely for risk analysis – security, foreign policy, engineering, insurance – investors need to switch default assumptions and accept that climate change *already* represents a systemic risk to their objectives and activities. Investors should go beyond the issuer level or even sectoral risks/opportunities that most have focused on to date, and stop waiting for overwhelming proof of the *actual* scale of systemic risk.

However, this scare needs to quickly give way to encouragement - both of the actions that are already being taken to address climate related systemic risk, and the positive opportunities that it offers for investors. Investor action on two levels is needed:

- Better management of climate exposure in portfolios. This will be supported by market players developing new tools to use information generated by the G20 and the FSB Task Force.
- Collective action – or “forceful stewardship” – to reduce unmanageable levels of risk by engagement with companies to ensure they have <2C compatible business models and with governments to ensure they have compatible national plans and are aware of the investment consequences of failing to reduce climate risk. The goal is to get companies in key sectors to change their operations, capex, innovation/R&D, incentives and lobbying strategies so they decarbonise and align with a <2C world. Investors can best do this by voting for AGM resolutions asking companies to disclose their <2C transition plans.

Finally, investors are empowered if they can see that ‘everyone is doing their bit’ and they are part of a whole systems change, rather than trying to act in isolation. Investment consultants and fund managers will challenge asset owners who are not acting aggressively enough on climate risk. And investors will challenge companies who are also not responding adequately.

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Once a critical mass (perhaps 30% by market cap) of each sector is reporting its <2C transition plans, and not just 2C stress tests, this will trigger adaptive action by the invisible hand of the market. It will also give regulators the data they need to be more proactive. And better corporate disclosure will facilitate litigation focused on the laggards, which sadly may be necessary to get them to change.

With resolutions calling for <2C transition plans across sectors (“industrial scale resolutions” covering, for example, the largest 500 companies) corporate laggards who resist change will become progressively isolated. Market players and other stakeholders will adapt their core strategies to integrate the <2C target in progressively more meaningful ways, and competition will drive an upward spiral. Scrutiny of the transition plans by investors advised by independent experts will ensure that the result of this chain of events is a genuine reduction in CO2 emissions.

To energise investors, some proven principles of good communications are useful: be clear about the desired outcome, enlist influential advocates, use the most effective frames, knit messages into a narrative and tailor message to specific audiences.

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A) What is 'systemic risk' and why does it matter to investors?

Systemic risk has three characteristics, which apply unequivocally to climate related systemic risk:

1. *Effects are pervasive, not confined to a sector or territory*

The most detailed work to date, by the Sustainability Accounting Standards Board, has found that 93% of all US industrial sectors will be affected in one way or another by climate change, with the most widespread effects coming from 'transition risk'. According to SASB, there are only 7 industries where they do not find evidence of significant climate risks.³

2. *Effects are non linear with unpredictable tipping points*

The long-term climate transition will almost certainly be volatile and messy. Global temperatures will continue to increase gradually, but local temperatures will vary much more dramatically; in Europe for example, scenarios for an average temperature increase of 5C are associated with an increase of 10C in heat waves. Such variability is even more pronounced in other parts of the climate system, i.e. extremes of rainfall. Thus climate change will likely be experienced as a series of "unexpected shocks" with the on-going and dysfunctional debate about whether any particular extreme weather event can be "proven" to be linked to climate change. If the medical profession avoided dealing with smoking, obesity and other risk factors for heart attacks and strokes because there was no absolute proof of causation for individual patient, public health would be seriously jeopardised. This, however, is the situation today with regards to climate risk.⁴

3. *Effects are inter-related and the scale of tail risks⁵ is impossible to quantify*

Society has evolved over the past 10,000 years to operate within a narrow band of temperature and rainfall and the new climate state will be fundamentally different, exposing much of the world's population and infrastructure to disruptive forces on a scale that have not been experienced before. The costs of weather-related damage are

³<https://www.fsb-tcfd.org/wp-content/uploads/2016/02/SASB-Presentation-Slides-Feb-9-2016.pdf>

⁴ Climate change has now being defined as a public health emergency by the medical profession but this awareness has not yet filtered through to the financial community. See:

<https://climatehealthcommission.org/>

⁵ Risks at the extreme end of the distribution, also called "Black Swan" risks.

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both rising, and an increasing proportion is uninsured and falling on governments. The social, security and economic impacts of this climate volatility, combined with step changes in other energy technologies, will extend into the political sector. For example a new NASA study finds that the 1998-2012 drought in the Eastern Mediterranean was the worst in the past 900 years.⁶ In Syria it contributed to income decline, food price rises and massive internal migration, ultimately fuelling the peaceful protests that led to war, destruction and an unprecedented refugee crisis.⁷ This refugee crisis is contributing significantly to the political crisis in the European Union. A possible consequential reduction in global growth, means that these societal effects will be harder to deal with, not least because as the effects of the crisis take hold, it is likely to result in greater political polarisation and gridlock as has happened since the Global Financial Crisis.⁸

In summary, the inevitable transition away from fossil fuels is as likely to be disorderly as not, with the lack of preparedness of the financial sector greatly amplifying this disorder.⁹

These second and third order effects are essentially impossible to factor into mathematical models, which means that these risks do not come with an accompanying risk management framework for investors and others to use. It is likely that climate related systemic risks will, over time, reduce global GDP and possibly global growth rates. However, since estimates of the scale of this impact vary widely (from 5% to 50% of world gross domestic product at 4° of warming¹⁰), investors who wish to ignore the real meaning of this uncertainty – i.e. that things could be very bad – have a convenient excuse for doing so or engaging in activity which has only incremental social utility.

However as time passes, and more data becomes available, the estimates of the scale of the impact will converge. Waiting for this to happen is likely to result in serious losses. Thus, **investors who are genuinely client focused will see that since climate related systemic risk cannot be avoided or hedged away then the only way they can manage this risk is to help ensure that greenhouse gas emissions are reduced at the rate needed.**

⁶<http://climate.nasa.gov/news/2408/>

⁷<http://www.pnas.org/content/112/11/3241.abstract>

⁸The lack of action to share the costs of the GFC equitably underpins the enhanced polarisation that many countries experience today and hence the need "positivemavericks" who are inside the system to work together on more meaningful change: <http://www.chicagobooth.edu/capideas/blog/2016/april/thank-the-financial-crisis-for-todays-partisan-politics>

⁹<http://blogs.ft.com/nick-butler/author/nickbutler/>

¹⁰Dietz, S. and Stern, N. 2015. "Endogenous growth, convexity of damages and climate risk: how Nordhaus' framework supports deep cuts in carbon emissions". *Economic Journal*, 125(583), 574-602, 2015: <http://onlinelibrary.wiley.com/doi/10.1111/eoj.12188/abstract>

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According to the UNFCCC this means global emissions peaking within the next 5-10 years.

“Global emissions are still rising. Impacts of climate change are going to increase in frequency and magnitude. The Agreement calls for global peaking as soon as possible, and this must come in the next 5-10 years.”¹¹

This is not just about those investors who have made a commitment to ESG investment—although they, of course, should lead the way.¹² Every investor that claims to be long term¹³ and even those investors who are simply diversified (i.e. ‘universal owners’¹⁴ or fiduciary capitalists¹⁵) should also be active on this issue. In effect, the vast majority of institutional investors have a fiduciary duty to act.

Combining the excellent work of both the Task Force on Climate-Related Financial Disclosures (TCFD) of the Financial Stability Board (FSB) and the Sustainability Accounting Standards Board, in this paper we disaggregate climate-related systemic risk into three elements:

1. ‘Direct risk’ from physical effects (such as sea level rises, droughts, hurricanes, loss of water resources) but also other significant (environmental) effects including the death of coral reefs, food insecurity, ecosystem collapse, conflict and migration.
2. ‘Transition risk’ as industries rise and fall and the ‘rules of the game’ that define who will be the winners and losers in each sector change (also called ‘Carbon risk’).
3. ‘Legal & Regulatory risk’ effects or in SASB’s formulation, climate policy effects.

Investors face both ‘direct risk’ to the economy from the changes that may follow because action has not been taken fast enough to reduce greenhouse gas emissions and the risk of disruption to economic sectors from measures to reduce emissions from what action is being taken (‘transition risk’ or ‘carbon risk’). Either or both of these may have systemically wide effects on the global economy. What is not widely understood, even by well-informed commentators¹⁶, is that dealing with transition risk does not necessarily address climate risk. Both ‘climate risk’ and

¹¹<http://newsroom.unfccc.int/unfccc-newsroom/keynote-address-climate-change-and-energy-after-paris/>

¹² PRI members now account for more than \$60 trillion in AUM which means that it speaks for 1 in 2 investment dollars globally: <https://www.unpri.org/about>. CDP says that its investor initiatives are backed by more than 827 institutional investors representing an excess of US\$100 trillion in assets: <https://www.cdp.net/en-US/WhatWeDo/Pages/investors.aspx>

¹³ Projects include: Focusing Capital on the Long Term <http://www.fclt.org/en/home.html>; Long Term Investors Club <http://www.ltict.org/>; International Centre for Pension Management <http://www.ltict.org/>;

¹⁴<http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8683.2007.00577.x/abstract>

¹⁵<https://blogs.cfainstitute.org/investor/2014/04/28/a-new-era-of-fiduciary-capitalism-lets-hope-so/>

¹⁶http://2degrees-investing.org/IMG/pdf/2ii_fsb_taskforce_final_150216.pdf - see sections 3 & 4

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‘transition risk’ need to be addressed in a manner that is fit for purpose and Preventable Surprises believes this is best done by Forceful Stewardship.¹⁷

Investors have a fiduciary responsibility to help keep warming below 2C. They should certainly not, as Lord Stern has highlighted, be betting against governments that they will not deliver on this critical commitment.¹⁸ How investors can best do this, by influencing the companies they own through forceful stewardship, is set out in the last section.

¹⁷ For example, carbon/climate risk assessments deal with risks to investor portfolios from exposure to carbon intensive industries from an energy transition. Such strategies are likely to be effective as “smart beta”. They are, however, a rather indirect approach for addressing systemic risks:
http://www.institutionalinvestor.com/Article/3559799/Asset-Management/Goodbye-Carbon-Footprint-New-Climate-Risk-Tools-Take-Shape.html?LS=EMS1284082&utm_medium=email%20alerts&utm_campaign=Asset%20Management%20Daily%202013&utm_content=2016_06_07&utm_source=ems%20email#/.V1cFiZN95ZQ

¹⁸ <http://www.ft.com/cms/s/0/2e5972a4-2b21-11e6-a18d-a96ab29e3c95.html>

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B) Breaking down 'transition risk'

Transition effects are thought to be the most widespread of the three types of risks identified by the TCFD and SASB. Transition effects will apply both to the fossil fuel industry (as explored extensively by the Carbon Tracker Initiative and 2Degree Investing Initiative), to users of fossil fuels (as fossil fuels are replaced by other energy sources over a multi-decade timeframe) and to enabling sectors (e.g. insurance and banks).

Howard Covington, a Senior Adviser to Preventable Surprises, has undertaken the following analysis of 'transition risk' with dissects it into various components – what follows is a shortened version of the (14 slide) presentation. This report does not cover 'legal & regulatory risk' (which is well addressed in ClientEarth¹⁹) and on 'direct risk', we focus on mitigation. Of course, we fully recognise that adaptation is equally integral and note that <2C transition plans by corporates could play a significant role here.

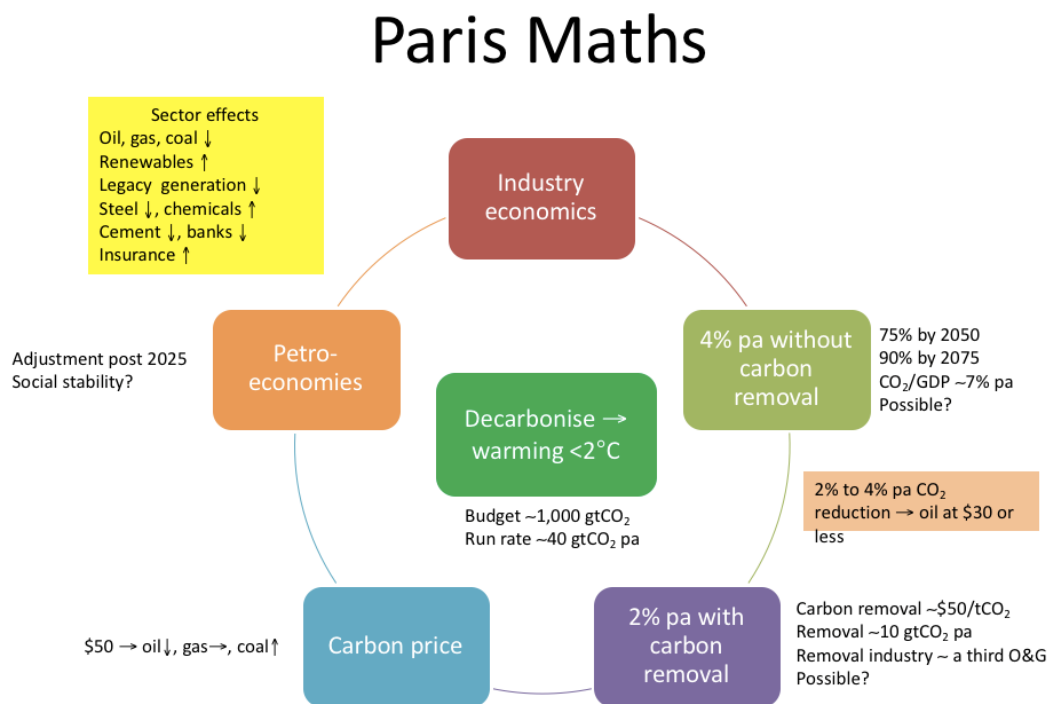


Figure 1: Paris maths

¹⁹<http://www.clientearth.org/business/>

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Figure 1 gives an overview of what needs to happen and its consequences. It starts with the centre block. If we are to keep warming below 2°C with a 50% probability, we can emit a future total of somewhat less than 1,000 gigatons of CO₂. This means that we have to reduce emissions by at least 4%/year (khaki block). Factoring in global growth of 3%/year we have to reduce emissions per unit of world GDP by 7%/year.²⁰ This is unachievable without *much* stronger government action than so far experienced. Alternatively, we might reduce emissions by 2% a year and make up the balance with carbon capture and storage (CCS) if this proves to be feasible²¹ (purple block).

CCS will require a carbon price of at least \$50/tonne (turquoise block), resulting in transfers of about \$2 trillion a year from emitters. However, if fossil fuel use is declining at between 2% and 4% a year, including oil use, then the oil price will be \$30 or less for most of the period. Users of oil will save \$2 trillion/year. In principle, this amount can be spent on CCS. The petro economies will go through very hard times, and some will probably suffer considerable social instability. The contagion effects of such trends in, for example, Venezuela and Saudi Arabia will be very different.

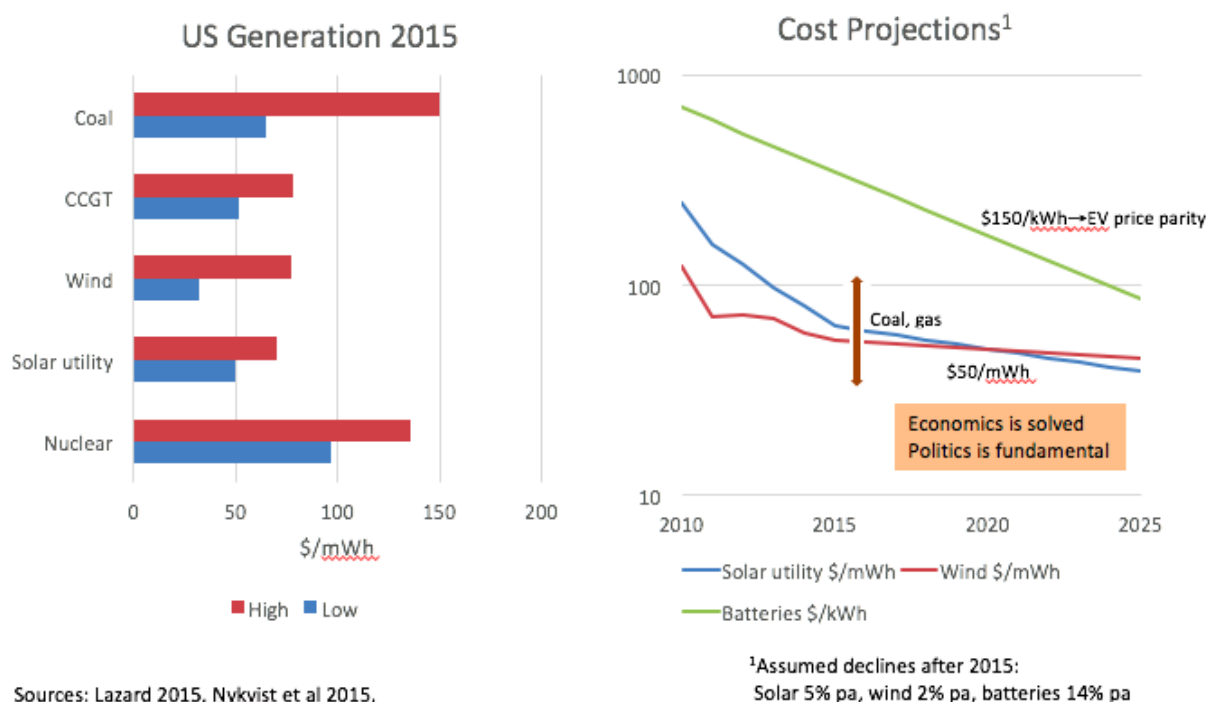
The yellow block shows the impact on different sectors.

²⁰PWC 2015. "Conscious Uncoupling. Low Carbon Economy Index 2015." PwC 2015.

²¹Williamson, P. 2016. "Scrutinize CO₂ removal methods." Nature. Volume 530. February 2016.

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Wind, Solar and Batteries



Sources: Lazard 2015, Nykvist et al 2015, UBS 2014, IRENA 2015

Figure 2: Wind Solar and Batteries

In the US, wind and solar are already cost competitive with coal and gas, and electric vehicles are expected to be cost competitive with petrol/diesel by around 2020. Electric vehicles are expected to take off in the early '20s due in part to pressure to clean up urban air. With a fleet turnover period of 12 years, it is reasonable to assume that all light vehicles are electric by around 2050. Experts at the leading edge of the climate debate are now starting to incorporate this sort of thinking into their own analysis. For example, as Lord Nicholas Stern said in his submission to the FSB's Task Force that it is "not outlandish" to consider a breakthrough in battery storage technologies within the next 20 years, which could lead to the widespread use of electric vehicles and resolve problems with intermittent generation of renewable electricity.²²

²²<http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2016/06/Zenghelis-and-Stern-policy-paper-june-2016.pdf>

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Figure 3: Generation and transport

Generation and Transport

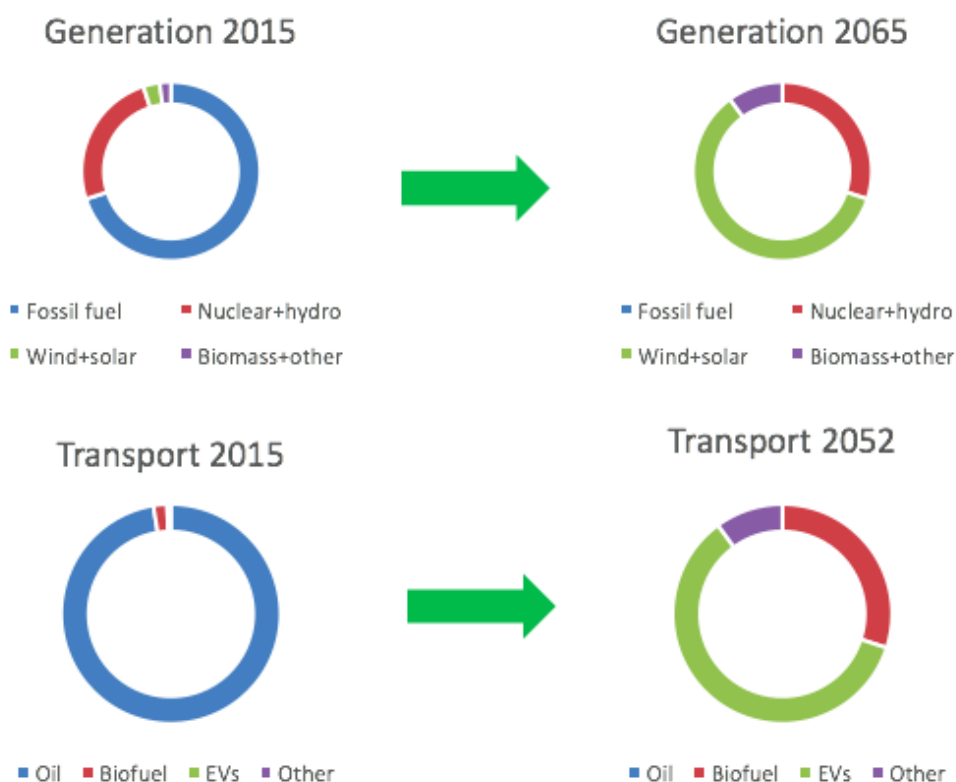


Figure 3: Generation and transport

Figures 3 and 4 show the possible shape and timing of the energy transition out of fossil fuels for the four sectors (industry, buildings, transport and generation) used by the International Energy Agency (IEA). The evolution depicted is consistent with an average 2% pa reduction in emissions. This evolution is based on an extrapolation of the IEA's 2°scenario but with accelerated roll-out of wind, solar and electric vehicles.

Buildings and Industry

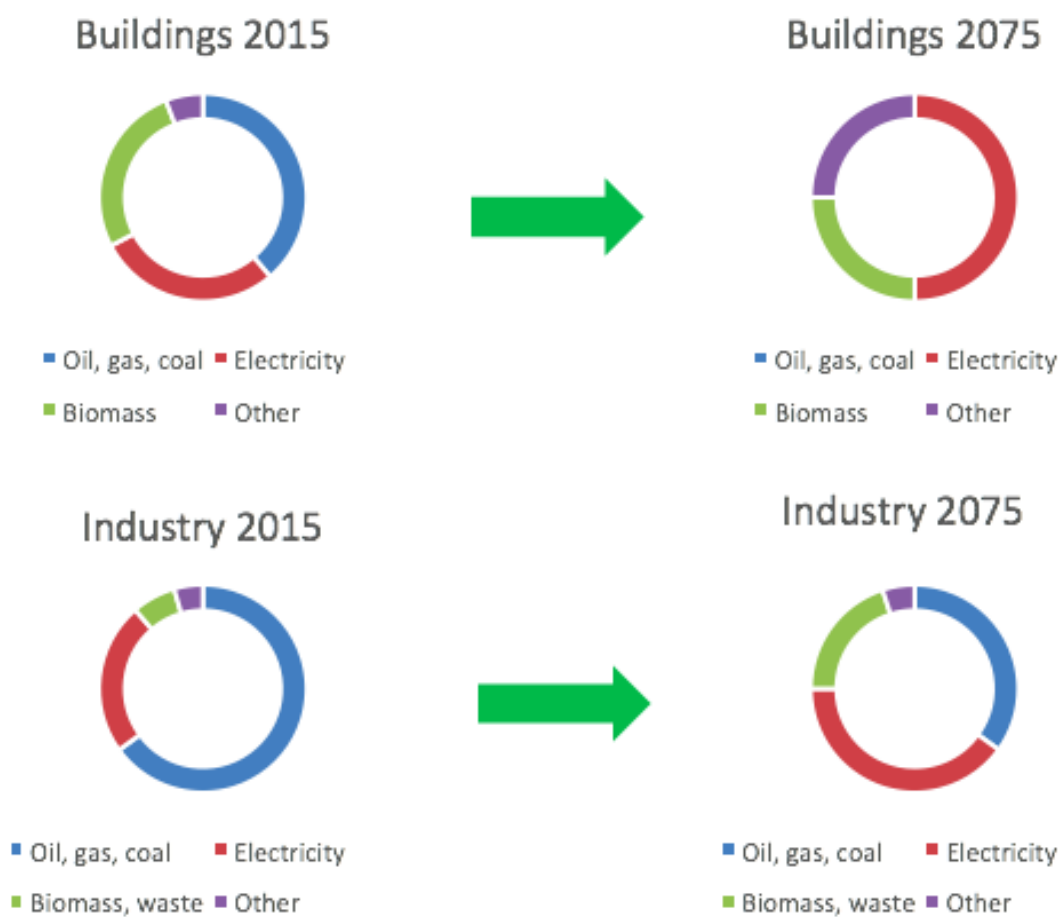


Figure 4: Buildings and industry

Industry represents the toughest challenge. Even by 2075, oil gas and coal will still be important sources of energy for processes such as steel making, which are unlikely ever to be completely decarbonised.

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Emissions Outcome

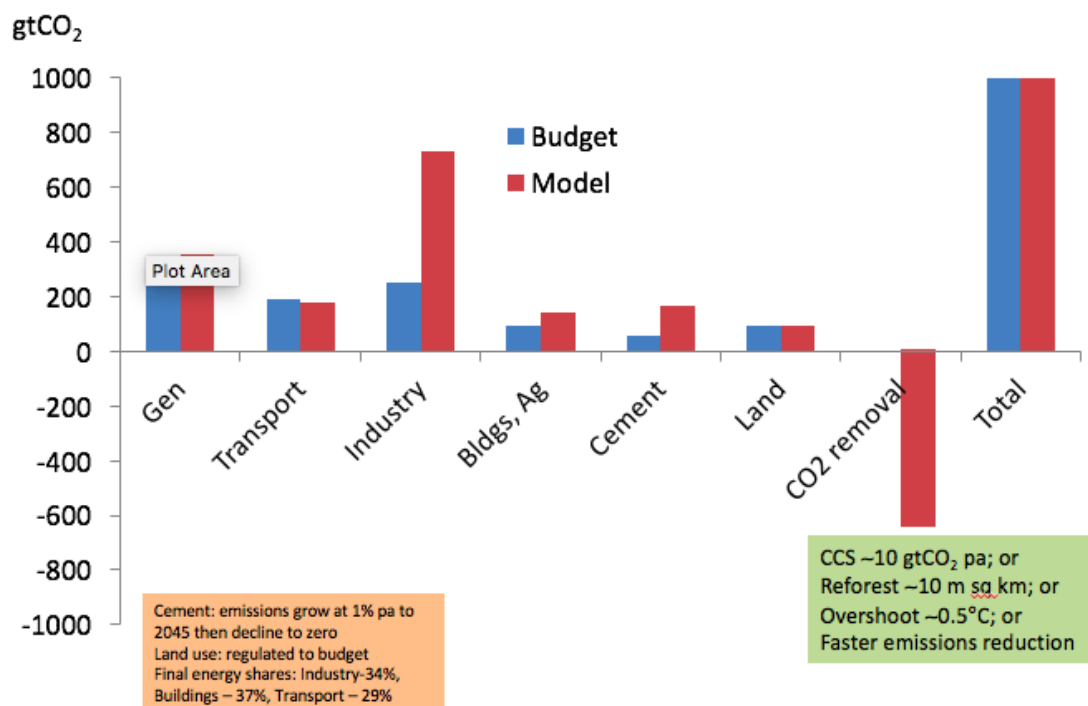


Figure 5: Emissions outcome

If the 1,000 gtCO₂ emissions budget is allocated to sectors pro rata to last year's emissions, and assuming the energy transition described in the previous slides, then generation and transport will come in around their allocation, but industry and cement will run well over budget. The budget only balances with a big contribution from the as yet unproven technology of CCS. If CCS does not work, either because society does not force adequate investment in time and or because the technology does not deliver, then either we need to make other changes on the scale of reforestation 20% of all agricultural land – with unavoidable impacts on food production and reductions in consumption of meat and dairy²³ – or reduce emissions faster, or accept that we will overshoot the carbon budget and warm by more than 2°.

²³<http://www.cam.ac.uk/research/news/changing-global-diets-is-vital-to-reducing-climate-change>

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Demand for Oil, Gas and Coal

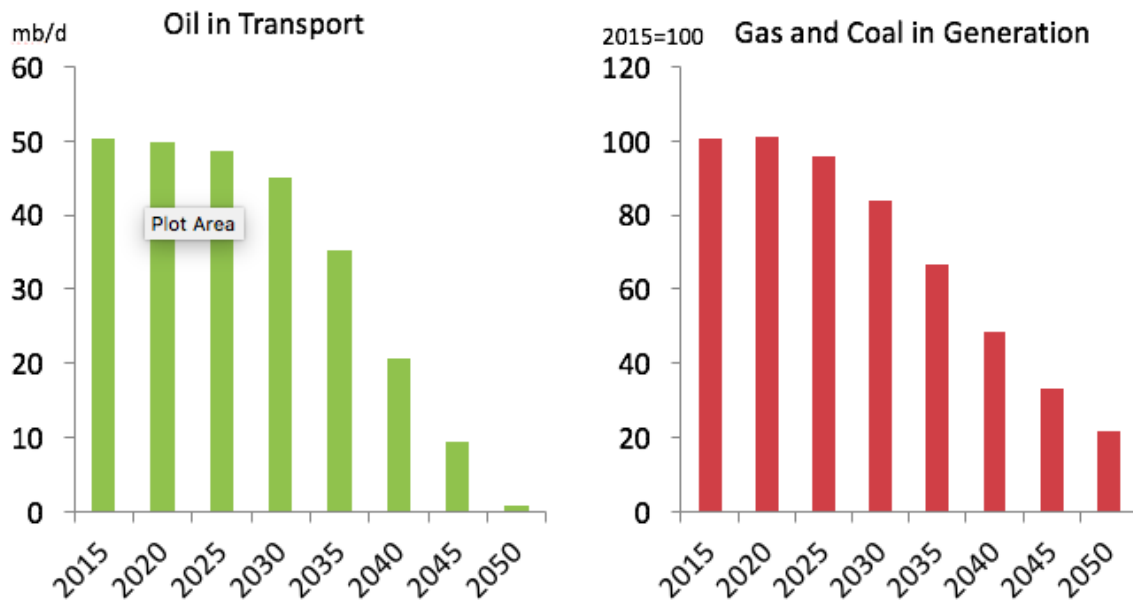


Figure 6: Demand for oil, gas and coal

We project that demand for oil in transport reduces to zero slightly ahead of demand for gas and coal in generation. Because of electric vehicles and biofuels, oil demand is projected to be falling fast enough in the late 2020s to push the price below \$30 per barrel.

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Oil Price Evolution

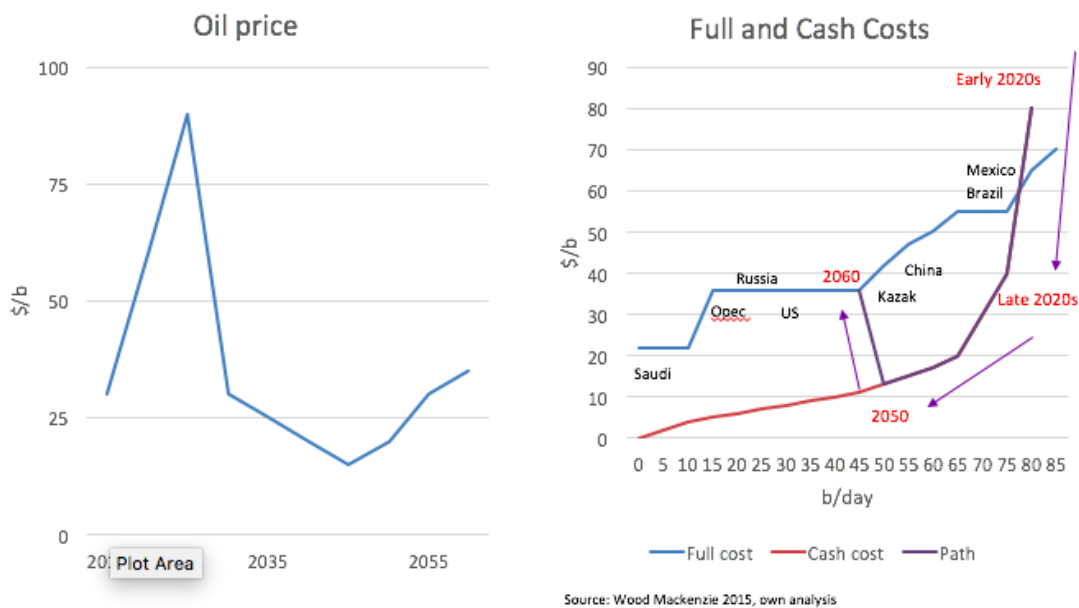


Figure 7: Oil price evolution

While it is impossible to predict the oil price, our analysis suggests a period of very low oil prices based on the marginal cost, and then a slight recovery based on the use of oil in petrochemicals. The diagram on the right shows the full and marginal costs curves for those who want to try to project the likely evolution of the oil price.

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Narrative to 2030

Re-cap:

- Oil demand down ~5mb/d and falling
- Oil price ~\$30 and headed downwards
- Petro-economies disrupted
- Coal and gas demand headed downwards
- CO₂ price ~\$25 rising to \$50/tonne
- Steel, cement, chemicals economics change
- Stranded assets in extraction, generation and industry

And:

- Saudi Aramco fundamental value at \$15-\$35/b
- Carbon-free indices outperform the market
- Growth and valuation assumptions change

Figure 8: Narrative to 2030

Figure 8 shows some of the main effects of the energy transition that we are likely to see up to 2030.

However, there are likely to be similar, if smaller scale, 'transition risk' in many other sectors of the economy. We therefore argue that it is as important to focus on heavy users of fossil fuels, as on the producers. For example, fertilisers based on fossil fuels may become expensive if a carbon price is imposed, or gradually phased out by legislative action, affecting intensive agriculture and the food industry.²⁴ The bottom line is clear. Transition is a given and the role of investors is to help to minimise the cost and damage. Relying on traditional investment tools such as stock picking, hedging and even sector allocation, will not address this scale of 'transition risk'. Market capital weighted indices and short time-frames makes it even less plausible that

²⁴<https://www.sciencenews.org/article/fertilizer-produces-far-more-greenhouse-gas-expected>

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traditional investment risk management strategies will address systemic risk – arguably they are more likely to exacerbate it.²⁵

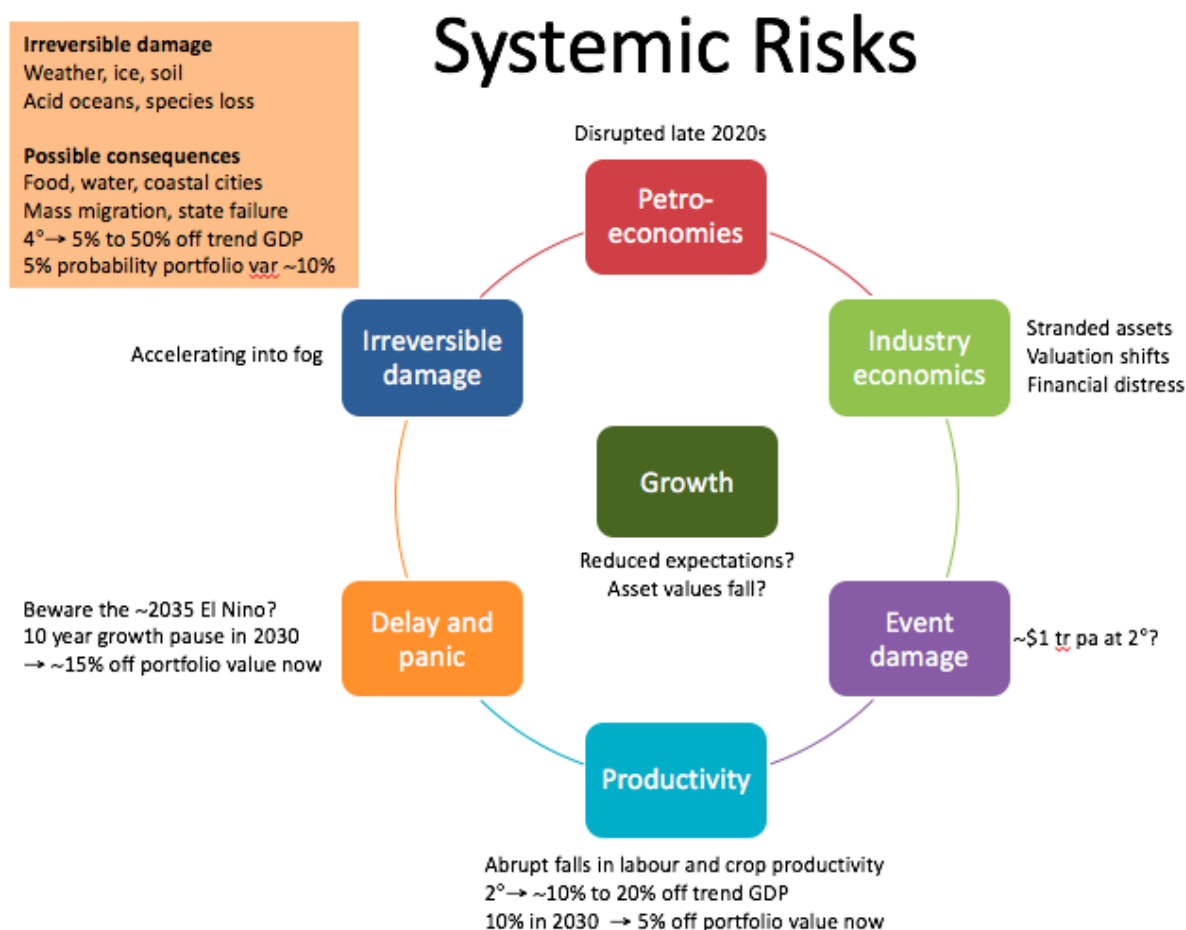


Figure 9: Systemic Risk

This summary diagram considers how systemic risk might *arise* and as such complements the 3-part classification (see Section A).

The energy transition creates stranded asset risk and also risk to petro-economies. A high price on carbon dioxide will increase this risk.

Warming may reduce labour productivity and increase infrastructure damage. At some point, public concern may trigger a panic response, perhaps a price on carbon, which markets will

²⁵<http://www.lse.ac.uk/fmg/workingPapers/discussionPapers/fmgdps/DP747CurseoftheBenchmarks.pdf>

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find impossible to time. In the long term, and with high warming, the irreversible damage done by changes in weather patterns, ice loss, soil loss, ocean acidification and species loss are unpredictable but may be large. They could manifest themselves through increased water and food stress, damage to coastal cities, mass migration and state failure.

Changes in public sentiment could also increase the success of litigation strategies. Making the legal case for the three duties – namely,

- Duty to mitigate
- Duty to adapt
- Duty to report

is becoming easier, and the fiduciary responsibilities of the different actors in the investment chain becoming clearer.²⁶

²⁶Law Commission 'Fiduciary duties of investment intermediaries' (2014); Caldecott and Rook 'Investment consultants and green investment: Risking stranded advice?' (2015); Share Action 'Protecting our best interests: rediscovering fiduciary duty' (2014); Eurosif, 'Investment Consultants & Responsible Investment Study' (2009) p 13.

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C) Why climate related systemic risk is a difficult conversation topic for investors

While informed professionals in many sectors (inter-alia science, national security, insurance and major corporations²⁷) generally see climate risk as one the biggest risks the world faces, most investment professionals give it a much lower priority.²⁸ Many of the investors who acknowledge the materiality of the issue are not yet awake to the fact that the likely damage due to climate change cannot be avoided by conventional techniques such as diversification, stock picking or hedging. Even divest-invest and portfolio decarbonisation strategies – which have considerable value in sending political-market signals and as smart beta strategies respectively – are indirect routes to promoting an orderly transition.

There are many counter arguments to the narrative we have set out here, and these are described below. But even before the counter arguments, there are reasons why this is a difficult conversation for investors. Listing these challenges is not to justify inaction. On the contrary, and as identified in italics, it is to focus collective attention on adaptive action. Preventable Surprises welcomes the engagement of other, larger organisations in pushing forward shared agendas given the critical importance of going beyond the issuer level or even sectoral risks/opportunities that most have focused on to date.

1) Investors respond to the wishes of the asset owners whose assets they manage. If asset owners are concerned only with fees and performance – and not for example, about voting behaviour – there is little incentive for investors to take action which: a) peers can avoid/free-ride on with impunity; b) which might damage relative performance in the short-term (e.g. by reducing access to corporate executives who “freeze out” analysts they want to penalise); and c) might damage asset gathering activities, because of how corporate and other²⁹ pension funds allocate mandates. In addition, it is now well recognised how remuneration design causes investment professionals to focus on relative performance over the short-term to the detriment of long-term fund performance and the well being of investee companies.³⁰

²⁷<http://www.scientificamerican.com/article/top-economic-risk-of-2016-is-global-warming/>

²⁸<https://preventablesurprises.com/blog/how-investors-should-monitor-their-real-world-impact-on-climate-related-systemic-risk/>

²⁹ Senior current and former Oil & Gas executives can to be found on the boards of local government pension funds, philanthropic foundations and even environmental NGOs.

³⁰<http://tomorrowcompany.com/publication/uk-business-whats-wrong-whats-next/>

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- *Asset owners, and their investment consultants – who play a very powerful gatekeeper role in many countries – must move quickly to monitor the stewardship activities of fund managers and where appropriate shift mandates to send signals about this importance of these other performance metrics. This said, culture change in the investment industry is notoriously slow so investor climate strategies that depend on large-scale culture change are not fit for purpose when it comes to systemic risk management. This is one key reason why the Forceful Stewardship Initiative is designed to a) require very little effort from most investors (it is enough, at the outset, for the majority of investors simply to vote ‘for’ AGM disclosure resolutions) and b) make it easy to monitor from outside, so there will be near-term reputation benefits for doing the right thing and costs for voting the wrong way.*

2) No-one, investors included, can really imagine what climate change will be like – both because of uncertainty and because it lies outside the realm of human experience.

- *However, abrupt transitions within sectors are well known – from horse and carriage to car, or from whale oil powered to electric-powered light. It may be more fruitful to focus discussion on sectoral transformation, within the wider backdrop of climate change.*

3) The feedback loops of climate change are long. Investors, like the rest of us, operate with an implicit mental model that the effects of ‘bad’ things should be visible within a finite timescale. There is also an implicit assumption that the worst effects of climate change will surface when the next generation of investment professionals are at the helm. And finally, having collectively picked up the procrastinator’s penalty with regards to climate, there are no non-radical options left on the table. Embracing disruption is not an easy thing for any human to do, particularly when there are financial and other incentives to avoid reality. Conversely, in an attempt to avoid ‘doom and gloom’ scenarios, there is an element of self-censorship, or ‘speed limits’ on the rate of change. So investors may be being shielded from the information they really need to absorb. The habit of “climate bright siding” is particularly problematic.³¹

³¹ The key beliefs underpinning climate bright siding have been defined as: “only positive ‘good news’ messages work; do not mention ‘bad news’ such as climate impacts; and do not communicate the magnitude of the problem, because people cannot deal with it. The good-news story is first and foremost about ‘clean’ or renewable energy, so construct public messages dominated by renewables and economic benefit, not about replacing fossil fuels.” Similarly, investor communication ahead of COP21 (e.g. with the focus on the Montreal Pledge) and after the US AGMs (with the description of the 40% vote ‘for’ as a success without commenting on the Missing 60%) would seem to share some of these characteristics, as does the new strategic focus of investors on “shifting the trillions” without a parallel focus on shrinking or “sterilising” (to quote Ian Dunlop, former Chair of the Australia Coal Association), the brown energy: <http://www.climatecodedred.org/p/brightsidings.html>

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- *Senior investment decision-makers should be sensitized, by experiential learning of the kind that corporate executives now have routine access to, of the current impact of climate change and environmental degradation but also the upside stories (e.g. circular economies) which they need to get behind.*
- *The long term incentive designs for investment professionals should be extended to cover at least 4-5 year rolling performance cycles.*
- *Particularly important are “teachable moments” when the normal immunity to change is lowered. One current example, is the case of the “Missing 60%” – the 60% of investors who found a reason to vote against or abstain on 2016 resolutions at US companies which are essentially the same as the resolutions they supported at BP, Shell, Statoil and Suncor and EU mining companies.³²*

4) There is not yet a shared understanding of the responsibilities of all players in the world economy to take action on climate change, so investors are uncertain about where their fiduciary responsibility begins and ends. And within the investment system, there are decades of experience of playing the ‘blame game’ between different parts of the investment chain.³³

- *Collective agency challenges can be addressed with new ways of organising as the Nobel Prize winner Elinor Ostrom has shown. The corporate sector is learning to collaborate to, for example, address supply chain sustainability challenges which even the largest multinationals cannot address alone. Investors can learn too, if their leadership so choose – indeed there are now several investor projects where practical answers to the collective agency issue have been developed.³⁴ Finally, the work of legal scholars³⁵ and litigators³⁶ may also help to fast-forward this understanding of shared responsibility.*

³²<https://preventablesurprises.com/blog/the-missing-60-lets-make-sure-investors-do-better-in-2017/>

³³<http://www.cfapubs.org/doi/pdf/10.2469/cfm.v25.n5.4>

³⁴One of the best examples is an investor collaboration known as “Aiming for A”: https://www.responsible-investor.com/home/article/helen_wildsmith_an_aiming_for_a_update_ownership/P0/

³⁵<http://insideclimatenews.org/news/07062016/retired-lawyer-boris-longstreth-floodgates-divestment-fossil-fuels-climate-change-investments>

³⁶<http://www.carbonbrief.org/guest-post-climate-change-before-the-court;>
[http://www.climatechangenews.com/2015/07/08/around-the-world-in-5-climate-change-lawsuits/;](http://www.climatechangenews.com/2015/07/08/around-the-world-in-5-climate-change-lawsuits/)
<http://web.law.columbia.edu/climate-change/resources/us-climate-change-litigation-chart>

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D) Arguments against the *concept* of climate related systemic risk

The concept of climate related systemic risk is contested. Here are some of the arguments we have heard and why we do not think they warrant serious concern.

1. “Systemic risk is for regulators to deal with: this is not for institutional investors to address.”
 - *This mind-set played a significant part in helping to create the Global Financial Crisis (2007-8) and to the extent that it is being repeated again, this simply highlights how little this very powerful industry learns.*
2. “We survived the banking crash and if there is a correction, markets will solve the problem on their own – our role is not to interfere.”
 - *Investors (and banks) survived the crash because of a) a taxpayer bailout and b) quantitative easing. Governments have no resource to do a “climate bailout”, even if it were possible.*
3. “There is no evidence of mispricing of assets. And as well informed investors, we will adapt ahead of our competitors if mis-pricing happens: this is what we are paid to do.”
 - *Since 2011, the US coal industry has lost more than 90% of its market capitalisation.³⁷ Very few active fund managers – all of whom think they can outperform their peers – have shone in this episode and by definition, index investors have mis-allocated capital. Coal is important because it is a canary in the mine for how quickly stranding of assets can happen even with “informed investors”.*
4. “There is no evidence of aggregated impact, as opposed to sector-by-sector impact.”
 - *This assertion is contradicted by detailed research from the EIU³⁸ and Professor Simon Dietz (LSE).³⁹ The value at risk for a portfolio due to business-as-usual emissions has been estimated by Dietz et al to have an expected value of around 2% but with a 1% chance that it is 17% or more. The long tail of high potential losses is what constitutes the systemic risk from climate change.*
5. “Technology developments (e.g. net emissions technology like carbon capture and storage and new forms of nuclear energy) will happen in a time frame that can prevent catastrophic climate change.”

³⁷COAL reference

³⁸https://www.eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf

³⁹<http://www.lse.ac.uk/GranthamInstitute/news/us2-5-trillion-of-the-worlds-financial-assets-would-be-at-risk-from-the-impacts-of-climate-change-if-global-mean-surface-temperature-rises-by-2-5c/>

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- *Technology does indeed have a big role to play – as we have highlighted in Section B, slide 2) – but simply relying on technology to reduce GHGs at the pace needed will fail (see slide 5, above). Reliance on unproven technologies (which in some cases have been under development for decades) could be viewed as a higher risk strategy than trying to prevent climate change*
- *Moreover, there is no reason at all why investors could not take all the technology bets they want, either directly or via the companies they invest in – but also support these transition plans.*

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E) Arguments against *taking action* on climate related systemic risk

Even once the concept of climate related systemic risk is accepted, investors appear to have several reasons for not wanting to take action. Only the last one warrants serious attention, in our view.

1. “Eliminating investment options will hurt performance.”
 - *Forceful stewardship calls for investors to ask for companies to publish <2C transition plans. Hence concerns about eliminating options (which might be relevant if the topic was divestment) suggest a mis-understanding of the proposal.*
2. “Being forceful stewards is expensive and funding is not available for this additional work.”
 - *At the minimum level of support for Forceful Stewardship, there no real cost to investors since all they are doing is committing to joining other investors to ask companies to publish their <2C transition plans and voting accordingly.*
 - *Higher levels of stewardship activity, e.g. filing resolutions, engaging on the details of the transition strategy, etc do have costs. In general, these stewardship costs are minor in relation to the overall budget of institutional investors and each firm will need to define how competent it wants to be at stewardship which has been defined by one expert as the primary role of investors today.⁴⁰*
3. “This comes worryingly close to political interference/acting on personal whims.”
 - *As Lord Stern has eloquently explained, it is companies and shareholder who bet against the 177 governments that have so far signed the Paris Agreement that are most vulnerable to the charge of acting politically.⁴¹ Whether this is a misuse of fiduciary responsibility will need to be tested in court, but the views of informed insiders such as this Republican nominated SEC commissioner should not be ignored.⁴²*
 - *Asset owners and investment managers’ fiduciary duties of care and loyalty require that they must think, act, and vote independently of management recommendations.*

⁴⁰Professor John Kay, who undertook a major review into financial markets for the UK government, considers that stewardship – and not stock picking – is the key role for investors today given that the most important capital allocation decisions are now made within firms and not by markets:

<http://www.theactuary.com/features/2013/04/the-mild-mannered-prophet-of-doom/>

⁴¹<http://www.ft.com/cms/s/0/ecfaef58-16a4-11e6-b197-a4af20d5575e.html#axzz4AbEOVxzs>

⁴²<http://insideclimatenews.org/news/07062016/retired-lawyer-boris-longstreth-floodgates-divestment-fossil-fuels-climate-change-investments>

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Inconsistency of voting on <2C stress test / transition plan resolutions – as has happened at the AGMs in 2016 (see note 45) – in particular needs explanation. If there are good reasons for voting differently on a fundamentally similar resolution, asset owners and investment managers should provide them. Failure to do so will raise legitimate questions about how well they are exercising their fiduciary duty, including managing potential conflicts of interests.

4. “It represents inappropriate interference with the management of companies.”
 - *Asking for disclosure at some companies (96% or more investors asked BP, Shell, Statoil, Suncor, EU mining companies) but failing to ask for the same disclosure in other companies (e.g. only 40% of investors in Chevron, Exxon and Southern) is deeply problematic. Investors should not create unequal playing fields, undermining leader companies and rewarding laggard companies.*
 - *Investors who use hedge funds and private equity fund managers are well used to much more aggressive influencing strategies.*
5. “We have other strategies for dealing with the climate issue.”
 - *The other strategies are valuable and should be supported but they do not address Systemic Risk well. If a risk is serious, and there is a cost effective strategy for managing it (which Forceful Stewardship is), investors have a duty to act, regardless of other things they may be doing and at a minimum should explain why they think otherwise.*
 - *Time and effort allocated to climate issues should be spent wisely and investors should be able to evidence that they have considered the strengths and weaknesses of different strategies before over-committing to strategies, which may not be optimal.⁴³*
6. “This is a long term problem, so we don’t have to address it right now.”
 - *Raising awareness across large organisations – and developing climate strategies – takes time. One investment professional at a well run pension fund indicated that it had taken four years for that organisation to get itself ready to act. Given that we have less than ten years to peak GHG emissions, the time to start the conversation is now.*
7. “Equities are only a small part of our defined benefit scheme so Forceful Stewardship isn’t so relevant for us.”
 - *AUM size is a red herring and used as an excuse by small and large investors alike, when there are similar sized organisation who able to act. If funds believe they are*

⁴³There is growing concern within the sustainability community about actions, which are called “predatory delay” – the deliberate slowing of change to prolong a profitable but unsustainable status quo whose costs will be paid by others. <http://johnelkington.com/2016/04/alex-steffen-on-predatory-delay/>

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competent to invest in equities, they have a responsibility to vote their shares and do so intelligently, whether this is a big or small part of their portfolio.

- *Of course, investors should also act with their other asset classes and indeed in some case, e.g. private equity, much faster change should be expected.*

8. “As there is no proven quantitative risk management framework for assessing systemic risk, this is simply not the right time for investors to focusing on this.”

- *All models have weaknesses, even those that are based on ‘pure’ facts and being approximately right is always better than being precisely wrong – this is something that investors should have learnt from the Global Financial Crisis.*
- *Climate risk has been quantified – by a growing number of experts, most recently Professor Simon Dietz. If anything, models pre-2010 have tended to under-estimate the scale of the problem because of conservative assumptions and because they did not include second and third order effects.*
- *There are many risk models used by investors, which are essentially qualitative (e.g. political risk).*
- *As important as the risk model is the leadership capacity to process the high degree of uncertainty that cannot be avoided. Given that investors are asking companies to do <2C scenario thinking, Boards and C suites of investment firms should do the same thing.*

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F) Principles of good communication

There are seven principles of good communication which apply universally⁴⁴ and they have particular relevance in communicating the systemic risk “story”.⁴⁵

1. *Be very clear about the outcome you want to achieve.*

Preventable Surprises believe that the desired outcome is that awareness of climate risk becomes embedded in all investment (including stewardship) decisions, with a sense of urgency that overcomes traditional reluctance to challenge management, leading to positive votes for AGM motions that request companies to develop and publish their transition plans for aligning with a world where warming is kept to <2C. Motivating targets also matter: PRI members who now account for 1 in 2 investment dollars in the world could – if they so decided – organise themselves to put AGM resolutions at the 500 biggest companies in the world.⁴⁶

2. *Be very clear about audiences and prioritise addressing influential thought leaders who can help build a constituency for action*

Mark Carney’s intervention in the debate about climate related financial risk has had significant value. Preventable Surprises will continue to work with others to try to get key influencers in the financial system to speak out about systemic risk, as well as helping ‘positive mavericks’ to support and challenge each other through our on-line and in-person dialogues, and so have greater organisational change impact than they might otherwise have had. Influencers who can shape the public debate are also needed since it is generally the case that the financial sector follows, rather than leads, on matters such as this.

3. *Pay attention to framing – what is this conversation about?*

When investors talk about climate change, one participant observed, it’s important to be clear whether this is a conversation about “How do we make money from climate change?” or “How do we stop the world imploding?” There was some scepticism about whether the right frame really makes so much difference – “we’ve gone through four frames in the last 15 year (‘Save the

⁴⁴Thanks to Bob Ward (Grantham Research Institute on Climate Change and the Environment) for this input.

⁴⁵Despite being financially focused, the importance of investment “stories” is well known by insiders and academics who have investigated how investment decisions are actually made.

⁴⁶The PRI has an engagement platform which has to-date operated as a place where investors can invite participation of peers. This could be scaled up significantly so that PRI members were organised to share responsibility for particular sectors, so breaking down what might otherwise seem to be an impossible task.

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planet/benefits v costs/green growth/managing climate risk) and it's the improvement in scientific knowledge that has really created change."

Equally, it is clear that transitions are easier for people to envisage and make concrete than climate change. What is important is that the conversation is about urgency and agency, but different frames will suit different audiences. For example, two easy ways to counter the all too common argument, even amongst "best in class" investors, that they cannot ask for <2C transition plans⁴⁷ is a) to highlight that Mark Carney has said something very similar – "what is your strategy for net zero"⁴⁸ and b) that the 2016 resolution at Southern Company got nearly the same votes as the resolutions at Chevron and ExxonMobil which received far greater effort.

4. Knit messages into a narrative

In this and other complex debates, facts don't speak for themselves. Knit the messages into a story, which takes the audience to the place where you want them to be. Use examples that they are familiar with, for example the 1992 hurricane, which bankrupted a number of insurance companies, or the concept of uncertainty in political risk.

5. Language matters

It is important to use language, which is sufficiently familiar that it is not at risk of misinterpretation. So, for example, stranded assets is a good phrase, but what it really means is major write down of assets which in and of itself is something that investors have seen happen many times and which actually we might want to see more of in order to better manage systemic risk. Adaptation implies that the problem can be dealt with. Systemic has overtones of 'invisible, everywhere and nowhere.' 'Uncertainty' can be heard, as 'we aren't sure of our facts.' These downsides may not be avoidable and there may be no better options, and hence the challenge is one of anticipating possible mis-interpretation.

6. Methods and channels need to be tailored to the audience

The investment community is not homogenous and different parts of the investment industry will need different messaging. For example, the equity portfolio, and therefore the opportunity for forceful stewardship may be greater in defined contribution than in defined benefit schemes. Actuaries are good at dealing with long term risk – what lessons can they share about the failure to anticipate the impact on pensions of rapidly increasing life expectancy?

⁴⁷<http://www.accountingforsustainability.org/a4s-summit-2015> - see "Panel debate", 15:43 to 16:45

⁴⁸<http://www.ft.com/cms/s/0/012e37c4-9a99-11e5-be4f-0abd1978acaa.html>

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More generally, financial regulators need to be concerned about both major and minor risks, and they have responsibility to manage these. Asset owners and asset managers will be mainly focused on their own portfolios. Environmental regulators may want to use the Systemic Risk concept to get traction for environmental policy.

Usually peers will be a more effective channel than NGOs, so we need to encourage those who have gone through the hard process of getting colleagues on board to encourage others. And don't rely on the media – they may distort the message.

7. Use feedback and evaluation

Seek feedback and learn from it. The journey may be a long one – the messaging may not work the first time, or it may need to mature in people's minds over a long period of time.

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G) We need to “SEE” climate related systemic risk

In summary form, we suggest ‘Scare, Encourage, Empower.’

Some people suggested that because climate change is so toxic to some people in the USA in particular, the argument should entirely avoid it, and just focus on carbon transition. But the carbon transition will be largely driven by government policy, which will make no sense in the absence of climate change. This also ignores the lessons of the same sex marriage debate, which, although very different in terms of vested interests, was polarised. The toxicity of the debate was neutralised, not by being in the closet about it, but rather by very active peer-to-peer, friend to friend, and relative to relative engagement.⁴⁹

Rather, we think the audience should be exposed to a realistic ‘median’ forecast of the climate change that will happen in the absence of very assertive and determined action to drive the energy transition. It will be helpful to draw on as much concrete evidence as possible, e.g. the rise in the number of natural catastrophes, record temperatures, and possibly, as an intellectual exercise, project those trends forward in a straight line, while emphasising that change will in fact be anything but straight line.

Moving swiftly on... Just **scaring** people is likely to lead to paralysis, depression and denial. So it is important to also **encourage** by giving grounds for hope. We need to point changes amongst people that our audience will consider to be “someone like me”. This could include the changes instatements by the oil and gas sector over the last year, from colleagues who have shifted from being climate sceptics to acknowledging that they may have been wrong. There are also many signs that not the usual suspect governments e.g. Saudi Arabia, changing direction, and so too with very mainstream investment managers e.g. the Norwegian Sovereign Wealth Fund and HSBC Global Asset Management. Of course, we cannot hide that investors are late to the party and need to catch up. But even at the AGMs in the USA where 60% found a reason to vote inconsistently⁵⁰ with how they voted at BP, Shell, Statoil and Suncor, the good news is that 40% of investors refused to be persuaded by the corporations who were very active in this proxy fight.

The other part of the positive message is that as with all economic transformations, there are huge opportunities for investment in new, fast growing industries, and the competitive advantage offered by becoming expert in these fields. For example, there are many energy saving or emissions reduction projects in the three major sectors (industry, transport and buildings) that

⁴⁹Kuper, S. “Green lessons from gay marriage”, *Financial Times*, <http://www.ft.com/cms/s/0/f93bdcfe-362c-11e5-b05b-b01debd57852.html>

⁵⁰http://www.huffingtonpost.com/bill-baue/the-missing-60-exxonmobil_b_10265140.html

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have two or year paybacks and are therefore good investments. Most firms have not done this – and have not appointed a ‘head of energy efficiency’ – because this has not been something investors have asked for.

Finally, **empowerment**. To make the rapid energy transition, lots of firms in all sectors have to act together and set a new benchmark for their laggard peers. In the absence of a carbon price, it is only their shareholders who can make them act. Once people accept that they need to be part of the solution, they want to know how different parts of the system will work together to deal with effectively with climate change, and what role should they play.

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H) How different actors can work together to reduce climate related systemic risk

This is a complex and fast moving world, but in mid 2016 this is what Preventable Surprises sees is needed in the *coming 12 months*:

1. Support for <2C transition plans– The goal is to get companies in all heavy impact sectors (i.e. not just fossil fuel companies) to change their operations, capex, innovation/R&D, incentives and lobbying strategies so they rapidly decarbonize and align with a <2C world. The same is true for key enabling sectors (e.g. insurance, banks, listed asset managers). Having a <2C business plan is a pre-requisite for companies really engaging with the specific changes needed be it on lobbying or capex. And it is highly implausible that traditional investors will vote in favour of what they consider to be micro-management resolutions if they have not first understand the need to support <2C transition plan resolutions. Thus, Preventable Surprises consider that there would be considerable value in all resolution filers getting behind one co-ordinated message for 2017. When investors require the companies they own to publish such plans – and whether this comes quickly as a result of private engagement or through voting for AGM resolutions – they are practising **forceful stewardship**.⁵¹

Investors are powerful agents of change here but need to see they are part of an ecosystem of change agents and that the sum of the whole is what is really effective. These other agents include:

2. Enlightened regulators– There is a fear that investors who do the right thing vis a vis Forceful Stewardship, but who are atypical in doing so, may get ‘punished’. Often the expressed fear is about impact on returns or costs but in reality it is a fear that Forceful Stewardship activities could work against the all important asset gathering function. Regulators have a key role to play in reducing any perceived first mover disadvantage. The Bank of England, the Dutch Central Bank and the French Government (Article 173)⁵² are all forcing the pace of change in slightly different ways. More can be done: for example, regulators could add climate risk into “Know Your Client” (KYC) requirements on the ground that climate risk is at least as important systemic threat as bribery and corruption.⁵³ Similarly, governments could require that investment consultants are clients if they want to add climate to their “Risk Register”. Given the fragmented nature of the

⁵¹ Forceful stewardship should also be possible with private equity, infrastructure, real estate and bonds. Preventable Surprises invites colleagues with expertise in these sectors to share their experience.

⁵²<http://www.ipe.com/countries/france/france-aims-high-with-first-ever-investor-climate-reporting-law/10011722.fullarticle>

⁵³<http://www.fsa.gov.uk/pubs/discussion/dp22.pdf>

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regulatory system – with different regulators responsible for different parts of the investment ecosystem – there is value in mapping out practical actions that regulators can take, all of which are incremental but which together could help create paradigm change.

3. Litigation – Companies that knowingly mislead the public and investors, or investors that continue to invest in the full knowledge that their investee companies are contributing to systemic risk, face increased risk of legal action. The investigation into fossil fuel companies such as ExxonMobil by 19 US State Attorney Generals is sending a wake up call to corporates and investors alike.⁵⁴

4. Showcase the Leaders– Best in class companies will in many cases already be thinking about transition and Physical climate risks.⁵⁵ Investors need to encourage this process where it is already in train and help to stimulate it where it is not. Investors should expect the leadership of companies to recognise and embrace the challenges and opportunities of an energy transition to achieve a low carbon economy. This is as relevant to sustainability investment managers as it is to traditional ones – indeed the former could be said to have a responsibility to set the agenda with their “good practice” companies. Similarly, private equity investors who assert their ESG credentials – and who do not need AGMs to have corporate influence – should also be expected to set the pace.

5. Accept that voting against management and the board will be needed – Because asking for a <2C transition plan is simply prudent risk management, institutional investors need to think, act and vote independently of management recommendations in order to carry out their fiduciary duties of care and loyalty. Indeed, investors should view as a matter of serious concern, boards in high impact sectors that refuse to do such plans. In practice, that might mean voting against the chairman and or board as a whole or the report and accounts.

6. Investment ecosystem must shift – The 3 key players of the institutional investment ecosystem (i.e. asset owners, fund managers and investment consultants) need to make this shift together. A critical mass in each part of the ecosystem will need to act. In the short-term, pressure should be brought to bear on those investors who voted the wrong way at the US AGMs – the “Missing 60%”.⁵⁶ This will be best done by informed and assertive clients acting collaboratively. A good example of this is the way PGGM has engaged Blackrock in public about the latter’s voting record on climate risk disclosure⁵⁷ and the Church Commissioners (Church of England, UK) has

⁵⁴<http://www.ag.ny.gov/press-release/ag-schneiderman-former-vice-president-al-gore-and-coalition-attorneys-general-across>

⁵⁵Companies who have endorsed Science Based Targets: <http://sciencebasedtargets.org/>

⁵⁶<https://preventablesurprises.com/blog/the-missing-60-lets-make-sure-investors-do-better-in-2017/>

⁵⁷<https://www.responsible-investor.com/home/article/dutch-giant-pggm-slams-blackrock-votes/>

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publicly challenged those investors who voted the wrong way.⁵⁸ These funds are currently the exception and the immediate priority is to reverse this situation.

7. Corporate governance forums must support change – The bigger the percentage of investors supporting the resolution, the clearer the signal to companies but also key information intermediaries like sell side and credit rating analyst, voting advisers and auditors. when we get to industrial scale in resolutions which we consider to be in the order of 30% of a sector by market cap.⁵⁹ To get powerful signals happening, and also to cover more companies in more sectors, the professional / trade groups need to transform the 'cottage industry' resolution process into an institutional scale one. Given the huge overload already experienced by the investors who have led the AGM process in 2015-16, this means the traditional corporate governance forums need to get off the fence and resource this shift to industrial scale resolutions

8. International networks must support change – All investor networks could do more to a bigger part of the solution, in particular the networks focused on corporate governance (traditionally defined). Internationally, this means the International Corporate Governance Network (ICGN) in addition to the UN Principles of Responsible Investment (PRI). In the UK, this means the Investor Forum/Investment Association in addition to UK Social Investment Forum (UKSIF); in the USA, the Council for Institutional Investors (CII) in addition to Ceres; in Canada, the Canadian Coalition for Good Governance (CCGG) in addition to Responsible Investment Association (Canada), etc.

9. Key stakeholders review how they can assist – Stakeholders that influence investors (e.g. NGOs, philanthropic foundations, media, regulators) could back forceful stewardship, specifically <2C transition plan resolutions, in the same way that they currently back other strategies (e.g. divest-invest or portfolio decarbonisation). Each stakeholder can focus on what it is best suited to doing. For example:

- Regulators could “jawbone” investors through public speeches (as Mark Carney⁶⁰ did) and also amend KYC rules to include climate related systemic risk;
- Investment consultants could ask asset owners who have not put climate risk on their risk registers to explain in writing why;
- Actuaries could review discount rates to reflect the reduction in future returns on investment that might be a consequence of systemic climate risk.

⁵⁸<http://www.ipe.com/news/esg/exxon-climate-vote-failure-underscores-need-for-cultural-shift-by-investors/10013754.article>

⁵⁹This figure arose from a poll of positive mavericks in the Preventable Surprises network. Obviously, there can be no definitive answer to this question.

⁶⁰<http://www.bankofengland.co.uk/publications/Pages/speeches/2015/844.aspx>

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- Investor trade bodies could facilitate this by publishing easy to interpret league tables and de-selecting members who routinely vote against disclosure;
- Campaigners could cause reputational risk to laggard fund managers but also those investor trade bodies that give air cover to these laggard fund managers⁶¹;
- Philanthropic foundation could actively engage with fund managers on stewardship as actively as they do on divest-invest and also indicate this change to their grantees, including campaign groups.

Thinking medium term:

When, through incentives for and pressure on investors, coupled with enlightened management, 30%-35% of companies in a sector have published meaningful <2C transition plans, the rest of the sector will follow.

Once this critical mass of <2C transition plans exists, sector by sector, the invisible hand of the market – e.g. sell side and credit rating, voting agencies, auditors etc – will start to respond to investor signals that strategic pivot is what is wanted. Each stakeholder group will adapt their core processes to integrate the <2C target in progressively more meaningful ways and market competition will drive an upward spiral. E.g. investment consultants will evaluate fund managers on their stewardship abilities relating to <2C transition. In this way, companies will not be able to avoid developing transition plans.

Scrutiny of the transition plans by investors advised by experts independent of conflicts of interest will ensure that the result of this chain of events is a genuine reduction in CO2 emissions.

⁶¹For a list of the 10 top investors in the US companies that faced climate related AGM resolutions in 2016, see: <https://preventablesurprises.com/blog/the-us-agms-which-investors-matter-the-most/>

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Key References

Covington, Thornton & Hepburn:

<http://www.nature.com/news/global-warming-shareholders-must-vote-for-climate-change-mitigation-1.19319>

Simon Dietz et al:

<http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate2972.html>

Mercer

<http://www.mercer.com/content/dam/mercero/attachments/global/investments/mercero-climate-change-report-2015.pdf>

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Appendix 1: Seminar participants

The individuals listed below took part in their personal capacity and Preventable Surprises would like to thank them for their contribution. Organisational affiliations are shown for identification purposes. This report follows the Chatham House Rule and Preventable Surprises has sole editorial responsibility for the contents.

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