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FUTURE-PROOFING THE EU CAPITAL MARKETS UNION

DRIVING SUSTAINABLE GROWTH

INGRID HOLMES

The European Commission's Capital Markets Union initiative aims to better connect savers and investors with opportunities to finance the real economy, driving growth. However, a growing number of investors are increasingly aware that current business models and wider economic activity that assume unlimited natural resources are not sustainable, and are creating systemic risks. At the same time, the Financial Stability Board will report to the G20 in November its findings on the potential risks posed by climate change to global financial stability. This briefing sets out what this means for future-proofing the Capital Markets Union – and how the European Commission should respond to the fast-changing global debate on the regulation of climate and wider environmental, social and governance risk.

Executive summary

- A growing number of investors are increasingly aware that current business models and wider economic activity that assume unlimited natural resources are not sustainable, and are creating systemic risks. This is driven partly by an understanding of long-term trends around climate change, resource scarcity, demographic changes and technology change. But it is also increasingly events-driven for example the BP Macondo disaster and VW emission tests scandal – which are expected to cost far more than has been set aside currently to cover their clean-up costs.
- In line with these trends, EUROSIF has found an increase in the deployment of sustainable and responsible investment strategies – and that growth of this type of investing is outstripping growth of the European asset management industry as a whole.



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- Given the pace at which responsible investment approaches are mainstreaming, failure of the EU to act to build a single market-wide approach will mean capital does not flow across borders – but rather flows only to those parts of the EU with the strongest disclosure requirements and risk-management strategies. This will defeat a key purpose of the Capital Markets Union.
 - Some governments are already moving. In the UK the Governor of the Bank of England has set out his concerns about the threat climate change-related risk poses to financial stability. In response to the Bank of England’s report the UK Government has agreed to set up an internal task force to look at taking the Bank’s findings forward. In France mandatory disclosure requirements have been introduced for investors as part of the new Law for the Energy Transition and Green Growth.
 - The Financial Stability Board will in November report to G20 the findings of its probe into the potential risks posed by climate change to financial stability. The China G20 Presidency is expected to take this work forward in 2016. Most probable next steps will be to include better quality and more consistent disclosure on risk factors. This will need international coordination. Also likely will be requirements to stress test the resilience of both business models and investments to environmental exposures.
 - As such there is a strong case for the European Commission to consider as a key priority how the Capital Markets Union can deliver a framework that enables investors to identify, price and manage climate and wider environmental, social and governance (ESG) risks. There is also a need to ensure that the reforms that emerge from the Capital Markets Union can effectively facilitate investment in the infrastructure and supply chains needed to deliver a low carbon economy.
 - The European Commission should:
 - Set up an EU-focused task force on climate risk and, as part of the remit of the task force, consider whether and how the European Systemic Risk Board (ESRB) would play a strengthened role. This could include managing and monitoring emergent risk in the capital markets in conjunction with efforts led by the Bank for International Settlements and Financial Stability Board at the global level.
 - Facilitate disclosure of ESG indicators and exposure to enable a shift to mainstreaming responsible investment. Consideration should be given to whether regulations based on Article 173 of the Law for the Energy Transition and Green Growth should be implemented more widely.
 - Encourage a longer term view from the asset management industry by introducing an EU stewardship standard for asset managers, modelled on the EU Eco-management and audit scheme (EMAS).
 - Encourage a longer term view from investment banks and ensure Non-Financial Reporting is embedded in long term investment analysis to ensure that conflicts of interest and market inefficiencies in analysing this information are overcome.
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- Raise ambition through robust and authoritative benchmarks of corporate ESG performance that clearly target the creation of an inclusive and sustainable society.
 - Facilitate new approaches to investing in the new economy through appropriately reflecting and pricing risk for infrastructure investors. This should form part of the review of capital adequacy requirements for institutional investors financing infrastructure assets.
 - Deliver effective risk management frameworks for infrastructure investment by providing accurate publicly available assessments of climate risk exposure and demand projections. Complement this with checks and balances to assess asset stranding risk as part of the new securities regulation and the proposed infrastructure hub.

1. Capital markets are already starting to restructure in response to sustainability risk

A growing number of investors are increasingly aware that current business models and wider economic activity that assume unlimited natural resources are not sustainable, and are creating systemic risks^{1,2}. This is driven partly by an understanding of long-term trends around climate change, resource scarcity, demographic changes and technology change. But it is also increasingly events-driven, as shown by the Macondo disaster and VW scandal (discussed in detail later). This shift in awareness is starting to be reflected in investor preferences for companies that think longer term and factor environmental, social and governance (ESG) issues into their planning and operations. There is emergent evidence that companies with superior ESG performance tend to have a lower cost of capital, both for equity and debt. In addition, several studies show that better corporate sustainability policies lead to better credit ratings and that superior sustainability performance drives a value uplift in the stock market because more sustainable companies generally outperform less sustainable ones³.

Separately to this, with the fast-approaching global deal to work to cap carbon emissions and avoid dangerous climate change, the divest/invest campaign focused on divesting from fossil fuel holdings and into clean assets is gathering momentum with an estimated \$5bn (€4.4bn) pledged or divested into fossil fuel free assets⁴. In October 2015 the UK's Environment Agency Pension Fund announced will become the first scheme to run its assets in accordance with the UN-agreed principles of preventing global temperatures from rising by more than 2°C⁵. HSBC

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See for instance the Letter sent to President Juncker and Commissioner Hill by an investor coalition, 5 February 2015 and UNEP-FI, Lenses & Clocks, 2012.

² The issues are comprehensively set out in Aviva's Sustainable Capital Markets Union Manifesto See <http://www.aviva.com/media/thought-leadership/future-of-capital/>

³ See EUROSIF (2015) A Sustainable Capital Markets Union Manifesto. See

http://issuu.com/eurosif/docs/a_sustainable_capital_markets_union

⁴ See <http://divestinvest.org/philanthropy/>



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has offered clients a divestment strategy for "selling down" holdings in the most exposed companies as pension funds, churches, and other investors pull out of the fossil industry altogether, much as an earlier generation pulled out of tobacco⁶.

In line with these trends, the European Sustainable Investors Forum's (EUROSIF) Market Report published in 2014 found an **increase in the deployment of Sustainable and Responsible Investment (SRI)⁷ strategies and that growth in this type of investing is outstripping growth of the broader European asset management industry as a whole.** Looking at the more conventional SRI-style strategies, during 2011-2013 growth rates range from 22.6% for sustainability themed strategies to 91% for themes focused on excluding investments that 'do harm'. Impact investing is the fastest expanding strategy, registering growth of 132% over the same period. Compare this to the overall growth of the total European asset management industry, which was 22%, and it becomes clear that a bigger proportion of overall investment is being deployed to impact investing.

As institutional investors become more aware of systemic risks related to climate change but also wider ESG concerns they will become increasingly cautious about investing, particularly in infrastructure. With an estimated \$90tn (€79.2tn) expected in infrastructure investment globally over the next two decades⁸, there will be a global race to attract capital. Governments that move to capitalise on this momentum and develop frameworks to manage systemic risks for investors are likely to benefit by virtue of being less risky places to invest. **Given the pace at which responsible investment approaches are mainstreaming, failure of the EU to act to build a single market-wide approach will mean capital does not flow across borders – but rather flows only to those parts of the EU where these issues are being addressed by financial regulators. This defeats one of the primary objectives of the Capital Markets Union.**

As such there is a strong case for the European Commission to consider as a key priority **how reforms focused on "building a single market for capital bottom up" can also encompass reforms that will help capital markets identify, price and manage the systemic risks outlined above.** In doing this it will act to foster greater investor confidence and participation in the Capital Markets Union initiative. This in turn will help foster greater transparency, accountability and therefore trust in capital markets.

2. One way and another the "tragedy of the horizon" is impacting value now

In September 2015, the Bank of England Governor Mark Carney set out in a speech to the insurance industry his concerns about the impact of climate change on future financial

⁵ Dawn Turner, the scheme's head of pension fund management, said "Our belief is that not [reducing our fossil fuel investments] would be a breach of our legal duty to act in the best interests of our members." See <http://www.ft.com/cms/s/0/0a5c23a6-7348-11e5-bdb1-e6e4767162cc.html#ixzz3p0xTkvlK>

⁶ See <http://www.telegraph.co.uk/finance/economics/11563768/G20-to-probe-carbon-bubble-risk-to-global-financial-system.html>

⁷ Socially responsible investing (SRI) and environmental social and governance (ESG) investing – as terms – are used largely interchangeably in this briefing.

⁸ New Climate Economy (2014) Better Growth Better Climate: Synthesis Report



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stability⁹. He noted that within the UK insurance sector, registered weather-related loss events have tripled since the 1980s and inflation-adjusted losses from these events have increased from an annual average of around \$10bn (€8.8bn) in the 1980s to \$50bn (€44bn) over the past decade¹⁰. The Governor was careful to say that the insurance industry is effectively managing risks as they currently stand. However, he also went on say that potential increases in the frequency or severity of extreme weather events driven by climate change as well as claims on third party liability insurance and losses related to transition risks could have severe impacts on insurers, policy-holders and also the wider investment community – risking financial instability.

The scale of the potential future impacts is huge. Simple macroeconomic modelling undertaken by the Economist Intelligence Unit has indicated severe losses to the global capital stock by the end of the century as a result of climate change. Their models showed average losses of \$4.2tn (€3.7tn) (compared to the \$143tn (€125.8tn) total stock of managed assets) and that under 6°C scenarios, around one-third of capital stock would be lost by 2100¹¹.

2a. Physical and transition risks: a macroprudential issue?

The Bank of England Governor's speech came at the tail end of nearly 18 months of study - undertaken by the Prudential Regulation Authority at the request of the UK Government - to understand the impact of climate change on the UK insurance sector¹². This initiative stemmed from dual concerns about both physical risks to assets but also growing concerns about a 'carbon bubble' and its impact on financial stability.

Enter the carbon bubble

The carbon bubble idea stems from concerns about significantly over-valued fossil fuel companies whose market capitalisation is based on faulty assumptions about how much carbon can be burned in the coming decades¹³. These concerns about over-valuation are compounded by the fact that despite a rapidly approaching deal in Paris to accelerate the transition toward a low carbon economy, key fossil fuel companies continue to drive forward high capex investments that will never realise the returns they are predicated on - leaving them with "stranded assets"¹⁴ (see Box 1). Authoritative organisations have backed this thesis

⁹ See text of Speech at <http://www.bankofengland.co.uk/publications/Pages/speeches/2015/844.aspx> and Report to DEFRA at <http://www.bankofengland.co.uk/pru/Documents/supervision/activities/pradefra0915.pdf>

¹⁰ MunichRe NatCatSERVICE (2015) cited in the Governor's Speech at <http://www.bankofengland.co.uk/publications/Pages/speeches/2015/844.aspx>

¹¹ Economist Intelligence Unit (2015) The cost of inaction: the value at risk from climate change. <http://www.economistinsights.com/financial-services/analysis/cost-inaction/fullreport>

¹² Prudential Regulation Authority (2015) The impact of climate change on the UK insurance sector: A Climate Change Adaptation Report

¹³ The 'carbon bubble' relates to the idea that companies involved in fossil-fuel-based energy production are over-valued because their reserves will never be realised in the face of local and/or global agreements to cap greenhouse gas emissions to avoid dangerous climate change. This in turn will require limiting global temperature increases to 2°C – or carbon dioxide levels to 450ppm. A deal between global governments under the UNFCCC process is expected in Paris in December 2015. While this will not reach the goal of 2°C immediately, it is expected to accelerate the transition to a low carbon economy. PWC has estimated pledges made by governments so far will more than double the rate of decarbonisation based on current efforts. The Paris deal is also expected to create a framework to ratchet up emissions reductions further every 5 years.

¹⁴ Oil and gas majors are particularly exposed - see analysis by Carbon Tracker Initiative <http://www.carbontracker.org/wp-content/uploads/2014/09/CTI-Oil-Gas-Majors-Company-Factsheets-August-2014-EXEC-SUMMARY.pdf> and Shell's recent



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up. As well as the seminal research by the Carbon Tracker Initiative¹⁵, the International Energy Agency (IEA) has warned that two thirds of all declared energy reserves become moot if there is a binding deal limit to carbon dioxide levels to 450 ppm in 2035. According to a study by Kepler Cheuvreux, this amounts to a nominal \$28tn (€24.6tn) of stranded assets over the next two decades for fossil companies¹⁶. Similarly a report by University College London concluded that there would never be any development of the Arctic and that 75% of Canadian oil - mostly tar sands - would never be burned in a 2°C policy world. Over 95% of coal reserves in the US, Russia, and the Middle East would also be stranded¹⁷.

Box 1: 'Unburnable Carbon'

The term 'carbon bubble' was coined by the Carbon Tracker Initiative. It hinges on the idea that much of the existing global fossil fuel energy sources cannot be burnt if the world is to adhere to a 'carbon budget' that enables us to avoid dangerous climate change (a warming of the global temperature above 2°C). Carbon Tracker Initiative has produced a series of reports themed on Unburnable Carbon which have prompted a new debate around the future of energy and investment. The thesis of 'unburnable carbon' was endorsed by a UK Government-funded academic study, which found that less than a fifth of the world's existing coal reserves can be burnt if the world wants to avoid dangerous global warming – and that developing oil and gas in the Arctic is "inconsistent" with tackling climate change. It has profound implication for the oil, gas and coal industries and for financial stability. In 2013, HSBC warned that 40-60% of the market capitalisation of oil and gas companies was at risk from the carbon bubble, with the top 200 fossil fuel companies alone having a current value of \$4tn (€3.5tn), along with \$1.5tn (€1.3tn) debt.

The Bank of England refers to the carbon bubble as 'transition risk'. One of the key issues for macroprudential regulators is whether the sheer scale of transition risk means they should take pre-emptive steps to manage potential losses and ensure an 'orderly' rather than 'disorderly' transition is delivered. Some are already arguing that the transition to a low carbon economy should be slowed because the potential loss of value is so huge¹⁸. However as the Governor of the Bank of England points out, as opportunities to invest in the 'old economy' decline, new opportunities emerge on the back of the technological revolution needed to underpin the low carbon transition¹⁹. In many ways the argument about the role (or not) of regulators in setting the pace of the transition are subordinate to the more material issue that

decision to pull out of drilling operations in the Chukchi Sea (Alaskan Arctic), a venture that is estimated to have cost \$7bn, is an example of this phenomenon in action.

¹⁵ Carbon Tracker Initiative (2014) Unburnable Carbon. See <http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-Full-rev2-1.pdf>

¹⁶ See Stranded assets fossilised revenues. At https://www.keplercheuvreux.com/pdf/research/EG_EG_253208.pdf

¹⁷ C. McGlade & P. Ekins (2015) The geographical distribution of fossil fuels unused when limiting global warming to 2°C. *Nature* **517**, 187- 190 <http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html>

¹⁸ <http://www.ft.com/cms/s/0/edc9bae6-678f-11e5-97d0-1456a776a4f5.html#axzz3nzIB21kS> 19% of FTSE 100 companies are in natural resource and extraction sectors.

¹⁹ IPCC estimates that additional investment of \$90-900bn (€79.2bn-792bn) is required annually in the energy sector alone if the rise in average global temperature is to be capped to 2°C. See www.ipcc.ch/report/ar5/ Mercer estimates that the



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forward **transition risk-related losses are likely to be predictable and avoidable. This sets up a strong public interest case for regulators to intervene to create the regulatory frameworks needed to facilitate an orderly transition to a low carbon economy - because in doing so they take steps to prevent such losses being occurred by investors in the first place.**

Physical losses due to climate change are happening now

Over the past three decades, **Europe has seen a 60% increase in extreme weather events.** This represents a physical threat to infrastructure assets and supply chains that have not been developed in a climate-resilient and resource-smart fashion. For example, in August 2015 water shortages resulting from the combined effect of a heatwave and lack of rain led to the closure coal-fired power plants, from which Poland generates about 90% of its electricity. The knock on effect of this was that at one point the Polish unit of ArcelorMittal was getting the minimum amount of power it required to maintain primary operations, including blast furnaces and steel shops, and halting irreversible infrastructure damage²⁰.

Given that some climate change is inevitable whether a global climate deal is agreed in Paris in December 2015 or not, this indicates **there is an urgent need not just to reduce carbon emissions but to ensure that infrastructure and supply chain assets are constructed in a climate-resilient fashion** (see Box 2). Failure to address these issues risks incurring further losses in the form of litigation to sue for damages from climate change.

Box 2: Physical risks to infrastructure posed by increasingly frequent extreme weather events

Over the past three decades, Europe has seen a 60% increase in extreme weather events. This represents a physical threat to assets that have not been developed in a climate resilient fashion. As examples, in early 2014, flooding and winter storms over an extended period of many weeks caused an estimated €20bn in economic damages in the UK²¹. Going further back still, in November 2005, the region around the German city of Muenster was hit by sudden snowfall of 50cm, which caused a severe blackout. Power lines and communication wires collapsed under the strain, cutting off electricity, landline, cell phone and data networks for 250,000 people for several days. Further consequences included a complete breakdown of public transport and severe damages to buildings. The “snow chaos” resulted in overall damages of around €130m.

New concerns emerge over litigation

The Bank of England’s climate change review identified a further source of risk to investors – liability risk. This is the risk that third parties that have suffered loss and damage either directly

additional cumulative investment in energy efficiency, renewable, bioenergy, nuclear and CCS could be in the range of \$3-5tn (€2.6tn-4.4tn) by 2030.

²⁰ See article both in Reuters and the Financial Times <http://www.reuters.com/article/2015/08/10/poland-energy-heatwave-idUSL5N10L2QJ20150810> <http://www.ft.com/intl/cms/s/0/8ba97b72-3f52-11e5-9abe-5b335da3a90e.html>

²¹ N. Mabey, R. Cook, S Schulz & J. Schwartzkoff (2014) Underfunded, underprepared, underwater: cities at risk. E3G



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or indirectly from climate change seek compensation from those they hold responsible. Cases could be brought against companies/investors on the basis that they failed to mitigate the risks of climate change, failed to account for the damage they cause to the environment or failure to comply with regulations. A comparison was drawn with asbestos – which is expected to cost insurers \$85bn (€74.8bn) in the US alone. This argues for more intervention from governments rather than macroprudential regulators – but nonetheless it will be important in informing decisions about the direction microprudential regulation needs to take.

2b. Wider environmental, social and governance risks are also increasingly visible

The carbon bubble is but one aspect of a range of wider environmental, social and governance (ESG)-related risks that are becoming increasingly visible and material. Most recently Volkswagen has seen its share value plunge 30%²² as it became clear the company had used defeat devices to enable vehicles to meet tight emissions requirements. In Europe nearly half of Volkswagen's vehicles require major hardware changes in order to meet emissions standards²³ and Volkswagen has set aside \$7.3bn (€6.4bn) to cover these costs. But overall costs related to the scandal are likely to be much higher as it has emerged that 11m cars worldwide are affected and the US Environmental Protection Agency, which exposed the rigged testing, could fine the company up to \$18bn (€15.8bn). In a similar vein, in January 2015, a US federal judge capped a potential fine for polluting the Gulf of Mexico in 2010 at \$13.8bn (€12.1bn) rather than the \$18bn (€15.8bn) feared. While the final total has not been determined, it is far higher than the \$3.5bn (€3.1bn) set aside by BP in its accounts to pay off the fine and any figure in excess of this could force the company into selling off more assets to pay for it. In June 2015, **BP's rating outlook was downgraded by Fitch Ratings because it expected lower crude oil prices but also because of fines related to the Macondo oil spill**, which are expected to cut cash flows and drive up debt. BP has already paid out more than \$28bn (€24.6bn) for the Macondo disaster and set aside a total of \$43.8bn (€38.5bn) relating to the spill.

In the EU utility sector, **the top 20 energy utilities in Europe saw over half of their €1 trillion market value wiped out in the period 2008 to 2013**. Disruption to the traditional business model of the energy sector can be traced back to EU climate and energy policies, which in turn have driven technology innovation and declining energy use from a range of sources. Many of the incumbent companies have failed to engage with these drivers in a timely fashion, and have seen very significant erosion of income and share value (see Box 3).

Box 3. Effect of European climate and energy policy and technology innovation on value in the European energy utility sector

During 2008 to 2013, the top 20 energy utilities in Europe saw over half of their €1 trillion market value wiped out. Disruption to the traditional business model of the energy sector can be traced back to EU climate and energy policies, which in turn have driven technology innovation and declining energy use from a range of sources. Many of

²² See <http://www.bbc.co.uk/news/business-34400305>

²³ See for example <http://www.theguardian.com/business/2015/oct/09/vw-scandal-3-6m-european-vehicles-need-major-changes> and see Volkswagen's responses at <http://www.volkswagen.co.uk/owners/dieselinfo>



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the incumbent companies have failed to engage with these drivers in a timely fashion, and have seen very significant erosion of income and share value. Nowhere is this more obvious than in Germany. In the face of 2020 greenhouse gas emission caps, falling electricity demand and a phase out of nuclear, the utility sector commissioned and built increased amounts of renewable energy assets but also GHG-emitting coal and lignite power generation plants.

In 2014 Germany's biggest utility E.On posted losses of €3.2bn to its European business, as the shift to renewables and increased energy efficiency squeezes earning from the traditional fossil fuel based power generating business²⁴. In late November 2014, E.ON announced it would spin off its power generation, energy trading and oil and gas business into a new entity next year, while keeping power grids, renewables and energy services. Significant concerns remain about the future performance even of the remaining E.On business, as it will be saddled with significant debt. Similarly, aware of the changing operational landscape in Germany, also in November 2014 the Swedish state-owned energy utility Vattenfall appointed Citi as advisers to sell its German lignite assets – 4 mines and 9000 MW of power generation capacity²⁵.

These moves by both E.On and Vattenfall have proven prescient. In April 2014 new legislation was proposed by the German government that focuses on curbing emissions from the power sector to meet Germany's domestic 2020 40% GHG target by imposing a levy on coal²⁶. The CEO of Germany's second-largest utility, RWE, has now warned that the proposed German coal levy poses a 'existential threat' to the company²⁷ as it would lead to the immediate closure of the majority of the group's lignite-fired plants. RWE had already forecast a decline in EBITDA from €7.1bn in 2014 to between €6.1bn - €6.4bn in 2015, stating that this was because around 45% of its conventional fossil fuel power generation assets were generating no income²⁸.

Yet these 'existential threats' to German utilities had been known since 1997, when Germany ratified the global Kyoto Agreement to cut GHGs and avoid dangerous climate change. In 2009, Germany further strengthened its commitment along with other European countries by signing up to the EU 2020 climate and energy targets. Despite this, utility companies continued to commission and build coal and lignite-generation capacity, 'betting' that the German government would not stick to its GHG targets. An analysis undertaken by the Smith School Stranded assets programme has found around 6000 MW of coal/lignite capacity has been added to the system in the 15 years since Germany ratified the Kyoto Agreement²⁹.

²⁴ <http://www.ft.com/intl/cms/s/0/307a0008-c7c2-11e4-9226-00144feab7de.html#axzz3ZkQOZDIA>

²⁵ <http://uk.reuters.com/article/2014/11/24/vattenfall-germany-idUSL6NOTE2X120141124>

²⁶ See E3G & Oxfam Deutschland (2015) Coal in Germany: State of Play

²⁷ <http://uk.reuters.com/article/2015/04/23/rwe-agm-idUKL5N0XK1WG20150423>

²⁸ <http://www.reuters.com/article/2015/04/23/rwe-agm-idUSL5N0XK1WG20150423> Lignite is RWE's most important energy source, accounting for about 37 percent of its power generation in 2014.

²⁹ <http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/SAP%20Report%20Printed%20Subcritical%20Coal%20Final%20mid-res.pdf>



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2c. Infrastructure investments are particularly vulnerable

Infrastructure assets are long-lasting capital investments. As such they are especially attractive to institutional investors as they match their long-term liabilities. However, while **demand for infrastructure investment opportunities is growing, poor infrastructure planning makes returns on investment vulnerable to a range of risk factors**. These are related to demographic shifts along with technology innovation and climate and environmental policy. Without a sufficient focus on how these risks can be managed for investors, what look like good investments can turn out to be very poor ones.

For example, **poor forecasting of traffic demand** has put in jeopardy the repayment of a €2.4bn investment Italy's new Brebemi (A35) motorway between Milano-Brescia³⁰. Opened in 2014, failure of the expected level of toll revenue to materialise due to low traffic volumes has seen the company behind the project seek taxpayer support to write off losses in the form of tax relief worth €498m (see Box 4). Similarly in the energy sector, EU gas demand is falling - and is now 23% below its peak. This is due to structural changes to the European economy, changing consumption patterns and significant progress on energy efficiency. **Falling demand raises important questions about the economic viability of new gas import infrastructure** and the risk of entirely preventable asset stranding³¹.

Box 4: Failure to factor in realistic demand projections into infrastructure planning decisions: example of roads

In July 2014 Italy's Brebemi (A35) motorway between Milano-Brescia was opened. It was conceived based on a reasonable set of aims – to serve a territory including Treviglio, Caravaggio and Melzo without a motorway and to reduce congestion on the A4 between Milan and Brescia, the busiest motorway in Italy, carrying 270 thousand vehicles per day, including 55 thousand trucks. Yet demand is well below that expected for two reasons, poor connections and facilities and high costs. One of the first issues is that the road was conceived and built 'in a vacuum'. The network of roads and motorways that revolve around the Brebemi A35 is still incomplete meaning that it is poorly connected and therefore unattractive alternative route to the well connected A4 route for motorists. In addition, there are no service areas. Tenders for their construction (two service areas in each direction) failed to attract bidders on three occasions, mostly likely due to concerns about how revenue would be generated with such low volumes of traffic.

Since the road opened relatively modest predictions of traffic volumes (40,000 compared to the A4's 270,000) have been halved. This is in part due to the lack of connectivity and services - but also due to a further factor of high costs. Tolls on the existing A4 motorway range between €6.30-€15.30 vs € 10.50-€29.10 on the A35. The failure of the expected level of toll revenue to materialise due to low traffic volumes (18,000 vehicles on its

³⁰ driveeuropenews.com/2014/07/24/brebemi-open/

³¹ D. Jones, J. Gaventa, M. Dufour (2015) Europe's Declining Gas Demand Implications For Infrastructure Investment And Energy Security http://www.e3g.org/docs/E3G_Europes_Declining_Gas_Demand_10_6_2015.pdf



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opening day³²) has placed in jeopardy repayment of the €2.4bn investment. As such the company behind the project is now seeking taxpayer support to write off losses in the form of tax relief worth €498m.

3. Governments are moving: the EU will need to respond

Prompted by the work by the Bank of England, in April 2015 the G20 asked the Financial Stability Board in Basel to convene a public-private inquiry into the potential risks to global financial stability posed by climate change, including regulation aimed at limiting temperature increases to 2°C. All member countries – which includes the EU - have agreed to cooperate or carry out internal probes, including the United States, China, India, Russia, Australia, and Saudi Arabia. **The G20 review is being modelled on the work by the Bank of England. The FSB's conclusions on the issues at stake will be reported at the G20 summit in November 2015 – when it will also become clear what the next steps are.** Going forward, it is expected that in 2016 the People's Bank of China will co-chair a G20 green finance study group with the Bank of England³³.

The most probable next steps will need to include better quality and more consistent disclosure on risk factors – which will need international coordination – and stress testing of the resilience of both business models and investments to environmental exposures. Ahead of the G20 meeting, some Governments are already moving.

Climate change is already part of the Bank of England's research agenda and the **UK Government has agreed to set up an internal task force to look at taking the Bank's findings forward**³⁴. France is already pushing ahead with regulation to manage systemic risk to its finance sector. **Pension funds, insurance companies and other institutional investors in France will be required to disclose how they are managing climate change risks.** The announcement was made by France's finance minister Michel Sapin at the Climate Finance Day conference in Paris in May 2015. It is the first country in the world to introduce a carbon reporting obligation on financial institutions. As such it paves the way for other countries to follow suit³⁵.

³² driveeuropenews.com/2014/07/24/brebemi-open/

³³ Announced by the Deputy Governor of the People's Bank of China in Lima October 2015.

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See Bank of England, One Research Agenda Discussion Paper, 2015.

³⁵ In July 2015, France strengthened mandatory climate disclosure requirements for listed companies and introduced the first mandatory requirements for institutional investors as part of Article 173 of the Law for the Energy Transition and Green Growth. The implication is that France's lead will strengthen the drive among investors worldwide to consider the environmental impacts of their investments and the risks to their businesses of failing to do so. See <http://www.environmentalleader.com/2015/06/01/france-first-to-introduce-mandatory-carbon-reporting-for-investors/#ixzz3ltaFidQc> and

https://gallery.mailchimp.com/fa7c2eeaec9493b326ccd9cb4/files/Energy_Transition_Law_in_France_Briefing_Note_FINAL.pdf



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4. Creating a Capital Market Union that builds trust and facilitates investment in a prosperous Europe

The European economy is changing. Even before the financial crisis, **structural changes resulting from policy, technology and behavioural drivers** - many of which are related to issues of sustainability – were beginning to have a material impact on what a ‘good’ long-term investment looks like. Shifts in conventional fuel consumption driven by declining energy use; the adoption of new technologies driven by innovation, new business models and behavioural changes that affect demand; modal shifts in transport use; highly volatile commodity prices; resource scarcity; and the physical risks to growth posed by the effects of a changing climate in Europe all affect the performance of long-term infrastructure investment.

There are growing doubts of the future viability of the business model of oil and gas majors, which because of their sheer size is a major concern. But elsewhere in the energy sector significant changes are also afoot. For example, technology innovation and consumer preferences are shifting the energy system away from large centralised infrastructure to distributed energy supply, smart infrastructure and energy efficiency.

For example, more than half the investment in renewables globally in 2014 was in distributed solar energy and increased renewables penetration on the global energy system has seen regulators push forward with significant reforms both to utility business models and grid infrastructure. In Europe, along with Japan, Australia and North America there has been significant growth in numbers of residential “prosumers”- electricity customers who produce their own power³⁶. In Europe, around €2.5tn needs be invested in delivering an Energy Union in line with 2030 climate goals. Given that energy company balance sheets are shrinking, capital markets will need to play an increasingly central role in connecting capital to the right energy projects and innovate in how finance is provided to support the investment need. The Capital Markets Union cannot be agnostic about these changes. **The reforms that emerge from the Capital Markets Union initiative must align with the need to find new ways to support investment in forward-looking energy infrastructure that supports delivery on an Energy Union in line with 2030 goals.**

The European Commission has made a start down this road. The Action Plan released in September 2015 does make the point that well informed investment decisions are needed to analyse and price long term risks and opportunities arising from the move towards a sustainable and climate friendly economy. **It also notes that such a shift in investment can contribute to delivering the 2030 climate and energy policy objectives and the EU's commitments on the Sustainable Development Goals³⁷.** Support for the growing green bonds market is also mentioned. However, green bonds are but one financial product and it is questionable whether at such an early stage of market development, as the Action Plan makes clear, there is much the European Commission could or should do now to support market growth. In driving sustainable outcomes in the broadest sense, there needs to be a focus more

³⁶ See REN21 (2015) Renewables 2015 Status Report <http://www.ren21.net/status-of-renewables/global-status-report/>

³⁷ European Commission (2015) Communication – Action Plan on Building a Capital Markets Union. See http://ec.europa.eu/finance/capital-markets-union/docs/building-cmu-action-plan_en.pdf



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widely on ensuring incentives across the capital markets are properly aligned to deliver long-term value through sustainable outcomes.

Moves to facilitate increased levels of direct investment in infrastructure, especially energy infrastructure, are welcome. The introduction of the European Long Term Investment Fund (ELTIF) Regulation, which creates a new cross-border fund vehicle for long term investment, could be useful in connecting smaller investors (local pension plans, municipalities, corporate pension plans) to projects. Moves to reform prudential regulation for insurers (Solvency II) to facilitate infrastructure investment at a price that fairly reflects risk will also be critically important. **A similar approach is also needed for Pensions Funds under IORP II, although concerns about EIPOA's Holistic Balance Sheet proposals impairing the ability of pension funds to invest in long-dated assets including infrastructure will need to be reconciled** within that process.

The Capital Markets Union Action Plan also announced a forward review of the cumulative impact and coherence of the financial legislation adopted in response to the financial crisis. The purpose is to assess the overall coherence of the existing regulatory framework. If clear evidence is provided to justify specific and targeted changes, this could follow. **As part of this review it will be important to ensure the emergent regulatory framework not only helps manage risk but creates the conditions to enable investors to participate fully in the range of emerging financing structures that will be key to supporting delivery of a transformed EU economy.**

Moves to reboot securitisation markets are also welcome³⁸ – and will be especially important for refinancing clean energy infrastructure. Scaling up of green-asset backed securities could transform the green bond market in a material way. But the **proposed securitisation regulation should include provisions to require Securitisation Special Purpose Entities, originators and sponsors of energy-related infrastructure projects to set out within standardised disclosure templates how securitised assets fit with the delivery of national and EU climate goals** to manage the risk of investors being sold securities backed by assets that become stranded under forward climate policies. Yieldcos are also likely to be increasingly important as is investment via infrastructure equity and debt funds and via joint ventures with energy companies. **As such the Capital Markets Union will need to ensure emergent reforms are structured in a way to manage risk prudently for investors and savers – but also enable these new products and assets classes to develop and support investment in the real economy.**

In the context of the Energy Union, it will be particularly important to ensure that **regulation to support prudent development of these financial structures and products does not disadvantage investment in energy efficiency and distributed energy systems and the small and medium-sized businesses likely to play a significant role in developing these sectors.** As such, intermediaries that can perform a variety of aggregation functions will be important investment facilitators for the capital markets. Aggregation functions need to be undertaken to bundle both capital and projects. The aforementioned ELTIFs could form one such structure

³⁸ See draft regulation at http://ec.europa.eu/finance/securities/docs/securitisation/com-2015-472_en.pdf



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– so too does the UK Pensions Infrastructure Platform³⁹. Examples of project aggregators include the London Energy Efficiency Fund⁴⁰.

Moving forward this type of integrated approach to matching demand for supply of finance in the EU will become all the more obvious and necessary as the Member States move to agree and implement an Energy Union that is in line with a forward looking climate and energy policy. **Failure to align the Capital Markets Union with these wider strategic EU agendas will put at risk a successful outcome for all these initiatives**, which are – at their heart – all linked by the fact they are about **the selection and financing of infrastructure and supply chain choices**.

5. In the global race to attract capital, it will pay to develop future-proofed prudential regulation

The carbon bubble and wider ESG risk management is a growing international concern. Across the globe it is estimated that US\$90tn (€79.2tn) in infrastructure investment will be deployed globally in the next two decades. The infrastructure choices made in the next decade will determine whether future climate stability can be achieved⁴¹ and whether a significant part of this investment will become stranded as climate policy tightens in the faces of increasing impacts. Avoiding high carbon lock-in and related asset stranding risk – either due to policy or physical risks – is a priority. **Achieving this will require an orderly transition to a resilient and low carbon economy** shaped by significant financial reforms which effectively redirect flows of public and private investment away from high risk, high carbon infrastructure towards low risk, low carbon and resilient infrastructure options.

In China, green credit guidelines were introduced in 2012 to require banks to both promote green credit to support the green economy and establishing environmental and social risk management systems⁴². In Brazil, in May 2014 the central bank BCB published guidelines for requiring the banks it regulates to develop and implement Social and Environmental Responsibility Policies. The purpose is to require banks and other regulated financial entities to develop governance strategies to understand and manage social and environmental risk that might otherwise lead to financial losses⁴³. Finally, in 2014, a UNEP-FI-led Inquiry into the Design of Sustainable Financial Markets was set up in recognition that the financial reforms enacted since the financial crisis have not included within scope a focus on how systemic risk from climate change can be managed or how a positive ‘green’ investment agenda can be encouraged. The steering group consists of leading global finance experts and central bankers⁴⁴. The final report states that aligning the financial system with sustainable

³⁹ <http://www.pipfunds.co.uk/>

⁴⁰ <http://www.leef.co.uk/>

⁴¹ New Climate Economy (2014) Better Growth Better Climate: Synthesis Report

⁴² See Notice of the CBRC on Issuing the Green Credit Guidelines (2012)

<http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>

⁴³ <http://www.mayerbrown.com/brazilian-central-bank-publishes-guidelines-for-the-social-and-environmental-responsibility-policies-of-financial-institutions-05-06-2014/>

⁴⁴ <http://unep.org/inquiry/>

development will require a systematic approach that goes beyond business-as-usual approaches to financial market development⁴⁵.

What emerges in terms of global innovation in financial regulation to manage systemic climate and wider ESG risks will determine which regions are more or less attractive to invest in. **To remain an attractive place to invest, the European Union needs to move forward and develop cutting edge financial regulation to manage these risks while expanding opportunities to connect capital to a sustainable real economy** through the Capital Markets Union initiative. This is likely to require:

- a mix of greater disclosure both by companies and investors to facilitate a shift toward mainstreaming responsible investment practices;
- facilitating new approaches to investment through the Capital Markets Union; and
- effective risk management frameworks for infrastructure, some of which will need to be developed outside Capital Markets Union initiative.

6. Moving forward

Several detailed papers have put forward ideas for building a sustainable Capital Markets Union. The most comprehensive of these is Aviva's Sustainable Capital Markets Union Manifesto⁴⁶ and also EUROSIF's publication of the same name⁴⁷. It is not feasible to load every proposal into the Capital Markets Union initiative. However given the increasing international spotlight on sustainability risks and opportunities, there does need to be a focus now on creating a process to build sustainability into the initiative. The following approach is suggested.

Creating a process to mainstream climate and wider ESG-related risk management into the Capital Markets Union

Recommendation 1 – Set up an EU-focused task force on climate risk: Pending the Financial Stability Board report to the G20 on climate risk, a dedicated Task Force focused on climate risk could be set up. Its aim should be to report to DG FISMA within 6 months on the materiality of climate and related ESG risk to capital market stability and options for addressing this within the Capital Markets Union. It should draw on the existing evidence base available in the academic and publicly available literature but also draw on international experience of assessing and managing such risk in jurisdictions including the UK, Brazil and China. As part of the remit of the task force, consideration should be given to:

- **Whether and how the European Systemic Risk Board (ESRB) would play a strengthened role**, including managing and monitoring emergent risk in the capital

⁴⁵ UNEP-FI (2015) The Financial System We Need. <http://web.unep.org/inquiry/publications>

⁴⁶ <http://www.aviva.com/media/news/item/aviva-launches-its-sustainable-capital-markets-union-manifesto-17381/>

⁴⁷ <http://www.eurosif.org/a-sustainable-capital-markets-union-manifesto/>

markets in conjunction with efforts led by the Bank for International Settlements and Financial Stability Board at the global level⁴⁸.

Facilitating disclosure to enable stress-testing and accelerate a shift to mainstreaming responsible investment

Recommendation 2 – Avoiding asset-stranding risk due to climate policies in the asset-backed securities market – Include provisions to require Securitisation Special Purpose Entities, originators and sponsors of energy-related infrastructure projects to set out within standardised disclosure templates how securitised assets fit with the delivery of national and EU 2030 and 2050 climate goals.

Recommendation 3 - Consider implementing regulations based on the new French law, to require institutional investors to disclose how they consider ESG issues in decision-making processes. Issues covered could include the risks of climate change associated with carbon-intensive assets and the opportunities to invest in low-carbon and renewable energy. Regulations could also require investors, on an ‘act or explain basis’, to set targets to measure progress and explain if they are not achieved. This could also be extended to banks and other credit providers. Options for cascade legislation to enable further asset owners to achieve this include:

- **Encouraging a longer term view from the asset management industry:** Introducing an EU stewardship standard for asset managers modelled on the EU Eco-management and audit scheme (EMAS), which paved the way for ISO 14001. It should allow for full transparency on all costs, remuneration structures and principles including time horizons over which rewards are made. Using a voluntary approach, it would allow asset owners easily differentiate between asset managers that are well positioned to exercise responsible investment and stewardship commitments.
- **Encouraging a longer term view from investment banks:** The Non-Financial Reporting Directive legislation must be finalised through EU level 2 technical measures, with guidance being made available as soon as is possible to over 6000 companies in scope across Europe. This information needs to be embedded in long term investment analysis to ensure that conflicts of interest and market inefficiencies in analysing this information are overcome. To inform this thinking, DG FISMA should establish a Task Force to look at options for incorporating ESG consideration into investment bank buy and sell side analysis and introduce requirements for analysts to take a 5-year or longer view on company outlook. The conclusions of this work can then be incorporated into the 2017 review of Markets in Financial Instruments Directive (MiFID) II.

Recommendation 4 – Raising ambition through better benchmarks: A task force should be set up to report to DG FISMA on the value of developing robust and authoritative benchmarks of corporate ESG performance that clearly target the creation of an inclusive and sustainable

⁴⁸ This draws on ideas presented by N. Véron & G. Wolff (2014) Capital Markets Union: A vision for the long term. See <http://bruegel.org/2015/04/capital-markets-union-a-vision-for-the-long-term/>



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society⁴⁹ and making the result publicly available. In this way, the Non-Financial Reporting Directive would be given ‘teeth’.

Facilitating new approaches to investing in the new economy

Recommendation 5 - Appropriately reflecting and pricing risk for infrastructure investors: It is welcome news that European Insurance and Occupational Pensions Authority (EIOPA) has a new workstream on infrastructure investment by insurers. In particular there should be a focus on the risk profile of infrastructure investments and a review of the appropriate treatment of infrastructure investments within Solvency II (applied to insurers) but also the Directive on Institutions for Occupational Retirement Provision (IORP II) to enable pension funds to invest larger volumes of capital in infrastructure. Particular attention should be paid to the track record of the performance of infrastructure debt, which over longer time periods is more stable than corporate debt⁵⁰. There must also be a focus on ensuring investment in all scales of infrastructure, including for example energy efficiency and distributed energy systems, through these reforms.

Effective risk management frameworks for infrastructure investment

Recommendation 6 – Getting assessments of climate risk exposure and demand projections right: Cities and regions should be given greater direct capacity and budgetary support to undertake local level climate risk assessments and implement resilience planning to better protect infrastructure and supply chains. They currently do not have the capacity or the financial means to build and budget for a warmer world. Local authorities will need direct financial support from national governments and the EU to do climate risk assessments in collaboration with local partners and share this information with investors⁵¹. Similarly infrastructure needs to be planned in a much more systematic way based on robust forecasts of demand. Public forecasts of forward oil prices as well as projections for road traffic demand and gas and electricity demand should be published by a centralised European entity. This function could be developed as part of the Energy Union initiative and take the form of an EU Energy and Climate Security Observatory. This would be set up to provide independent oversight to help the EU address unprecedented risks and keep it on track to deliver multiple policy objectives under the Energy Union but also wider Investment Plan⁵².

Recommendation 7 - Ensuring realisable long-term value from long-term infrastructure: Proposals for an EU-level website or ‘infrastructure hub’ as part of the Capital Markets Union’s sister initiative ‘the Investment Plan’ are welcome. This aims to support European project pipeline development. As a risk-management function for investors, project developers should be required to screen for asset stranding risk as a tangible means setting out policy risk for investors. In addition to this could be key information about the investment offer to

⁴⁹ An example of such a framework is that proposed by the Future Fit Business Benchmark. See <http://futurefitbusiness.org/>

⁵⁰ See for example analysis by Moody’s

http://cib.natixis.com/flushdoc.aspx?filename=How_is_Infrastructure_different_from_other_asset_classes_Andrew%20Davison_Moody%27s.pdfhttp://cib.natixis.com/flushdoc.aspx?filename=How_is_Infrastructure_different_from_other_asset_classes_Andrew%20Davison_Moody%27s.pdf

⁵¹ See http://www.e3g.org/docs/E3G_Underfunded,_underprepared,_underwater._Cities_at_risk.pdf

⁵² See http://www.e3g.org/docs/E3G_7_propositions_for_the_new_Commission_September_2014.pdf



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institutional investors, including details of any concessional cofinancing on offer from government/national banks as a means to reduce the due diligence needed. This is a similar approach that successfully trialled with the European Investment Bank's Project Bonds Initiative.

6. Conclusions

The European Commission's renewed focus on getting the EU economy growing again is welcome and much needed. The topline focus on returning the EU to prosperity through linking savers and investors with growth is the right one. However, in working to achieve Europe's return to prosperity, serious consideration needs to be given not only to mechanistic reforms but also to qualitative aspects. That is, that **the Capital Markets Union – to be effective in delivering a sustained and sustainable recovery – cannot be 'agnostic' about the type of investment it seeks to deliver**. As such it would be a mistake not to consider how the Capital Markets Union can be designed to ensure how risks to investors related to structural changes in the economy can best be managed. **It would be a clear missed opportunity not to ensure the emergent Action Plan** is clearly linked to how best **to manage risk and facilitate the estimated €2.5tn⁵³ in investment needed to deliver an Energy Union in line with 2030 climate and energy targets**. Failure to do this would contravene the commitment made by the EU, when it signed up to the UN's Sustainable Development Goals, to building resilient infrastructure and promote inclusive and sustainable industrialization⁵⁴.

As we have seen very clearly in the last few years, if the framework conditions are not right in terms of risk-adjusted returns, **investors will always have an option not to invest directly into the EU economy**. Moving forward with a Capital Markets Union Action Plan that encompasses wider qualitative dimensions would ensure the initiative can enable capital to flow better across the EU but also contribute to ensuring a lasting positive effect for the Investment Plan, including ensuring Europe can deliver a secure Energy Union in line with 2020, 2030 and 2050 climate goals.

Financial ecosystems change slowly and the European Commission has already said that the Capital Markets Union initiative will run over several years. **As such it will be critically important to include options to identify and manage these risks – particularly in the wake of announcements from the Bank of England and the G20 probe**. Initial analysis suggests that these risks can be managed, but that it will require a purposeful move toward creating opportunities to better align interests between all market participants over the long term. In this way the EU can create capital markets that are well informed, have investment practices that are transparent and accountable and institutions that are flexible enough to make the **real economy investments savers and society need to create a sustained and sustainable recovery**.



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⁵³ See DIW. European Energy Sector: Large Investments Required for Sustainability and Supply Security

⁵⁴ These goals were agreed in September 2015. See <https://sustainabledevelopment.un.org/topics>