



Financing the transition
to a low carbon economy

Bridging the long-term
financing gap

Controlling speculation

Preventing systemic risks

Optimising tax schemes

**CONNECTING THE DOTS BETWEEN CLIMATE GOALS,
PORTFOLIO ALLOCATION AND FINANCIAL REGULATION**

ABOUT THE 2° INVESTING INITIATIVE

The 2° Investing Initiative [2°ii] is a multi-stakeholder think tank that brings together financial institutions, policy makers, research institutes, experts, and environmental NGOs. Our work is dedicated to research, awareness raising, and advocacy to promote the integration of climate constraints in financial institutions' investment strategies and financial regulation. The 2°ii organizes sharing and diffusion of knowledge, and coordinates research projects.

2°ii was created in Paris in 2012 by French and international partners. Other branches will follow in Europe and throughout the world starting in 2013. The name of the initiative relates to the objective of connecting the dots between the +2°C climate goal, risk and performance assessment of investment portfolios, and financial regulatory frameworks.

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The views expressed in this report are the sole responsibility of the authors and do not necessarily reflect those of 2°ii members. The authors are solely responsible for any errors.

EXECUTIVE SUMMARY

In this report, the 2° Investing Initiative proposes to create a framework that connects the dots between climate goals, portfolio allocation and financial regulation.

- The main objective of the 2° Investing Initiative is to build a set of new approaches that integrate climate change issues into mainstream finance. In this context, climate change issues can be seen as the tip of a larger iceberg: the need to finance the real economy and the long term.
- While the goal to limit climate change to +2°C has been officially established by world governments, the “price signal” approach promoted in the last 20 years has yielded limited results. Meanwhile, we are getting closer to a carbon-intensive future every day. It now appears necessary to use other tools that will ‘push’ available capital into financing the energy transition.
- The cornerstone of our initiative is the concept of “2° investing”: a financial environment that promotes financing and investment in accordance with +2°C climate pathways. For this to become possible, new tools and new rules are needed to connect existing regulatory frameworks with emerging performance and risk assessment practices. 2°ii aims to be an open platform where experts and stakeholders who share these objectives can meet and share their ideas.
- The present report raises two questions:
 - How can an investment portfolio’s contribution to financing the energy transition and the long term be measured?
 - What should methodologies and rules that place these indicators and environmental constraints at the heart of daily investment practices and decision-making processes look like?
- The conceptual framework developed by 2°ii follows three pillars:
 - 1. Assessment:** The contribution of financial products and institutions to financing the energy transition and the long term; overall evaluation of climate risk exposure.
 - 2. Disclosure:** Transparency in the risk and impact assessment conducted by companies, asset managers, and financial institutions.
 - 3. Incentives:** Greening of existing schemes, such as incentives, taxes on savings, and capital requirements in order to push asset allocation onto a +2°C trajectory.

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A. WHY DO WE NEED TO DRIVE ASSET ALLOCATION?

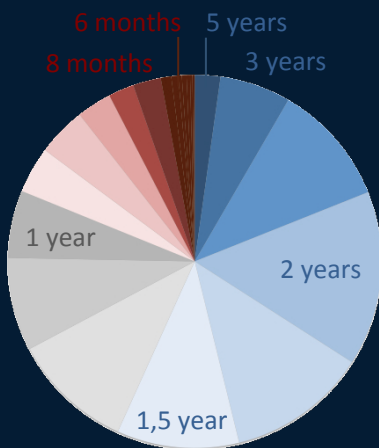
DESIRED GLOBAL INVESTMENT

Source: MGI 2011¹



INVESTMENT HORIZONS OF LONG-ONLY EQUITY MANAGERS (2006-09)

Source: Mercer/IRRC 2010⁶



“Short-horizon investors can help to improve the efficiency of the market, both from an arbitrage perspective and also in terms of market liquidity (...). The potential problems start when long-only investors behave as short-horizon investors” Mercer/IRRC

1. THE LONG-TERM FINANCING GAP

According to the McKinsey Global Institute (MGI), the world is at the beginning of an enormous wave of capital demand, driven by emerging markets and the energy transition. The global demand for capital is expected to rise from ~\$11 trillion today to \$24 trillion in 2030.¹ In particular, demand for infrastructure investments will boom due to a lack of maintenance in developed countries over the past few decades and the expansion of cities in the developing world. At the same time, the global savings rate will likely not follow this trend, due to a change in demographics and lower expected savings by Chinese households. New capital requirement rules (Basel III for banks and Solvency II for insurers) will lead banks to reduce their lending to the real economy and insurers to reduce the weight of long-term assets in their portfolios.²

This new regulatory wave, combined with the existing bias for short-term assets, will create a financing gap for long-term and risky assets, such as infrastructure and company equity, and non-listed SMEs. For instance, McKinsey estimates that the annual equity gap (between offer and demand) over the next ten years will reach \$3.1 trillion at the European level and \$12.3 trillion at the global level.³

At the same time, speculative activities siphon assets away from investment activities and constitute a permanent threat to the price formation function of financial markets. High frequency trading (3 milliseconds) now represents 40% (Europe) to 60% (US) of equity trading. In commodity trading, speculators represent a 70% market share.⁴ The most troubling news however is that a majority of long-term asset managers currently adopt short investment horizons. This disconnects their strategy from the long-term objectives of their clients. It reduces the supply of capital for long-term investments and forces investees to focus their strategies on quarterly results.⁵

These issues will play an increasingly important role in determining the competitiveness of both countries and companies. They will require policy makers to create new regulation that enables investors with long-term liabilities – insurers, pension funds, mutual funds, etc. – to focus on long-term value creation and drive household savings towards ‘investment’ rather than ‘trading’ portfolios. After remaining under the radar for many years, this subject has recently been introduced onto the agenda: the European Commission is currently preparing a Green Paper on long-term financing. In France, a parliamentary committee will be set up in 2013. In the UK, the *Kay Review* has recently called for a reshaping of equity market incentives in order to lengthen investment horizons.⁶

¹. Electricity, gas, water, transportation and communication

2. THE ENERGY TRANSITION: THE CAPITAL REALLOCATION CHALLENGE

The transition to sustainable energy sources will be the key challenge of long-term financing. World governments are committed to limiting global warming to +2°C over pre-industrial levels, the threshold the scientific community identified in order to avoid large-scale climate change, and a -3% to -20% impact on global GDP. If this target is missed, the financing challenge related to adaptation will be even greater.

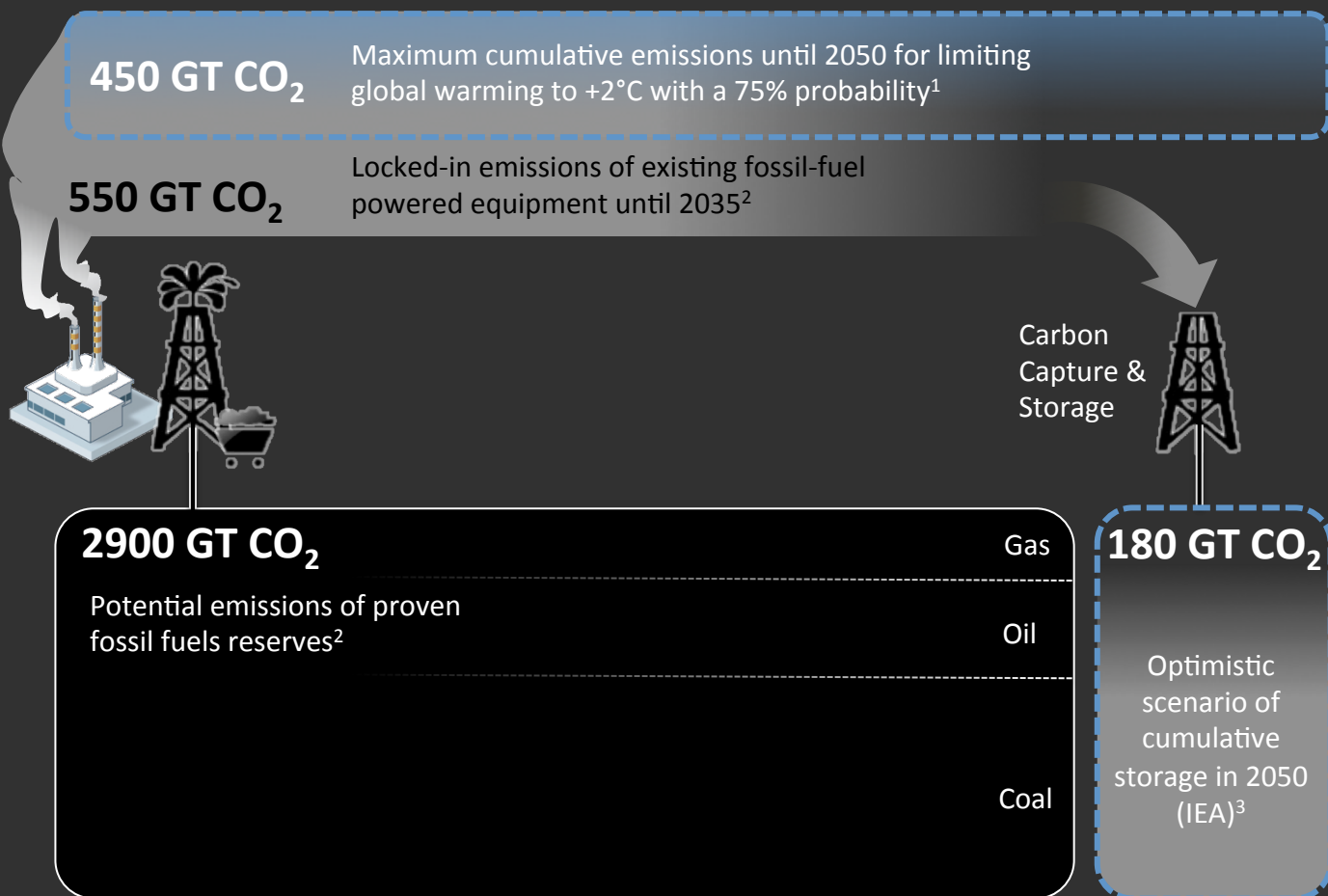
According to the International Energy Agency, the energy transition requires a massive shift in investments, from fossil-fuel based sectors to clean technologies.⁷ For financial markets, this does not only mean financing additional investment in transport infrastructure, low-carbon real estate, and clean technologies. It also requires a sharp cut regarding investments in fossil fuel based industries, such as oil and gas extraction.

- On the one hand, the carbon content of proven oil, gas and coal reserves is already 5 times higher than what we can release into the atmosphere until 2050 in order to meet the 2°C target.⁸ The potential emissions of proven oil reserves alone exceed the 2°C threshold, challenging the economic case for investing \$600 bn each year in exploration and production.⁹
- On the other hand, the locked-in emissions of existing fossil-fuel powered equipment (power plants, factories, cars, buildings, etc.) will also soon exceed our 'carbon budget' [Fig. 1]. Even if carbon capture and storage becomes a reality, which is unlikely to happen before 2030, these devices will have to be replaced before the end of their planned lifetime – and all new devices will need to be carbon neutral.

At the global level, the scale of this capital reallocation is comparable to the industrial effort made during the Second World War.

FIG. 1. CARBON BUDGET vs. LOCKED-IN EMISSIONS

2012 2015 2020 2025 2030 2035 2040 2045 2050



3. THE INADEQUACY OF CURRENT PRICE SIGNALS

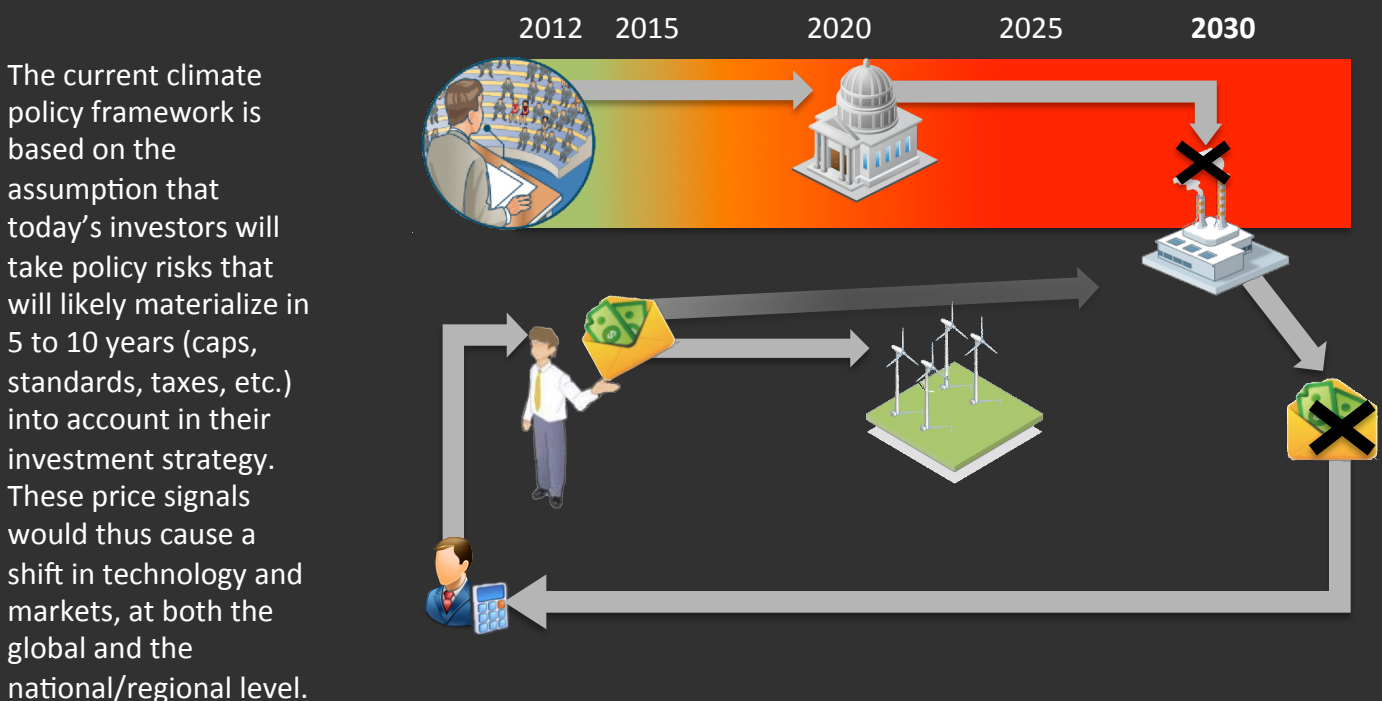
Current climate policies have not been and will not be able to drive this shift alone. The first - and well-documented - reason is the failure of governments to agree on an ambitious and binding framework at international level. Even when impulsion does exist (e.g. the EU “20-20-20” objective), it is not substantial enough to drastically reorient the industry and drive investment.

A second obstacle - less well-documented - lies in the functioning of financial markets. Most current policies aim at setting a price on carbon (via caps, taxes, etc.), which is high enough to create a policy risk for investors and increase the competitiveness of clean technologies and sectors. This ‘bottom up’ approach takes for granted that financial markets will fully anticipate risks and opportunities by adjusting their asset allocation strategy, thus financing the energy transition [Fig. 2].

But this only works on paper, as Nicholas Stern stressed in his Review of the Economics of Climate Change.^{10,11} In the real world, even if policy makers succeed in agreeing on a framework of this kind, the investment horizons of most financial analysts and institutional investors are far too short to capture the associated long-term policy risk [Cf. Section B.1.].

This situation calls for the parallel development of a complementary, ‘top down’ approach: The integration of climate goals, as such, in the regulatory frameworks that directly or indirectly drive capital allocation. These frameworks include a mix of local, regional, national and international regulations (e.g. the taxation on savings, capital requirements, transparency rules, and accounting standards).

FIG. 2. THE PRICE SIGNAL APPROACH



4. A WINDOW OF OPPORTUNITY FOR POLICY MAKERS

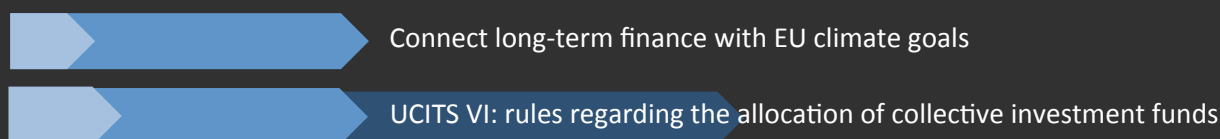
In the aftermath of the financial crisis, most financial regulations that directly impact asset allocation strategies are currently being reviewed or newly implemented [Fig. 3]: Capital requirements for banks (Basel III) and insurers (Solvency II), information on savings products (PRIIPS), reporting and transparency requirements, supervision of rating agencies, rules for the production of benchmarks, tax schemes on savings (national level), etc.

To date, policy makers have not connected the dots between their climate goals (notably Europe 20/20/20 targets) and financial regulation, even though they acknowledge that the energy transition is probably one of the greatest challenges facing our financial systems in the next decades. However, French and European Commission papers on the mobilization of long-term financing and the transition to a green economy, planned for early 2013, seem to be a step in this direction.

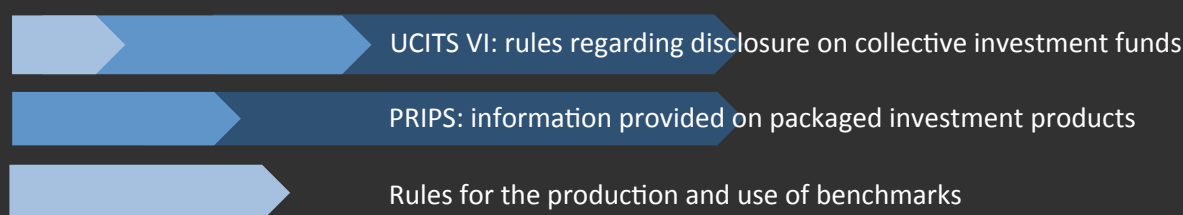
Moreover, the current implementation of Basel III and Solvency II is mobilising huge resources and intelligence needed to reshape data systems and risk assessment models. Given the lack of visibility on future regulatory trends and the high cost of investment in this area, financial institutions have a clear interest in anticipating and setting the agenda constructively. Therefore it seems timely to undertake this kind of investigation now, while doors are still open.

FIG. 3. EUROPEAN COMMISSION AGENDA AND RELATED OPPORTUNITIES

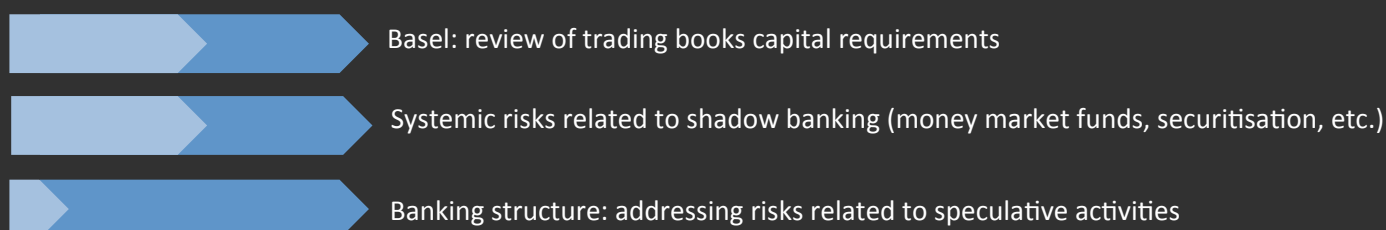
INTEGRATION OF GOALS RELATED TO LONG-TERM FINANCE: CONNECTION WITH CLIMATE SCENARIOS



DISCLOSURE ON INVESTMENT PRODUCTS: REPORTING ON 'FINANCED IMPACTS'



PREVENTION OF SYSTEMIC RISKS: TAKING CLIMATE RISKS INTO ACCOUNT



■ Consultation & papers ■ Proposal ■ Implementation

2013 2014 2015 2016 2017 2018 2019

B. THE BARRIERS TO LONG-TERM INVESTING

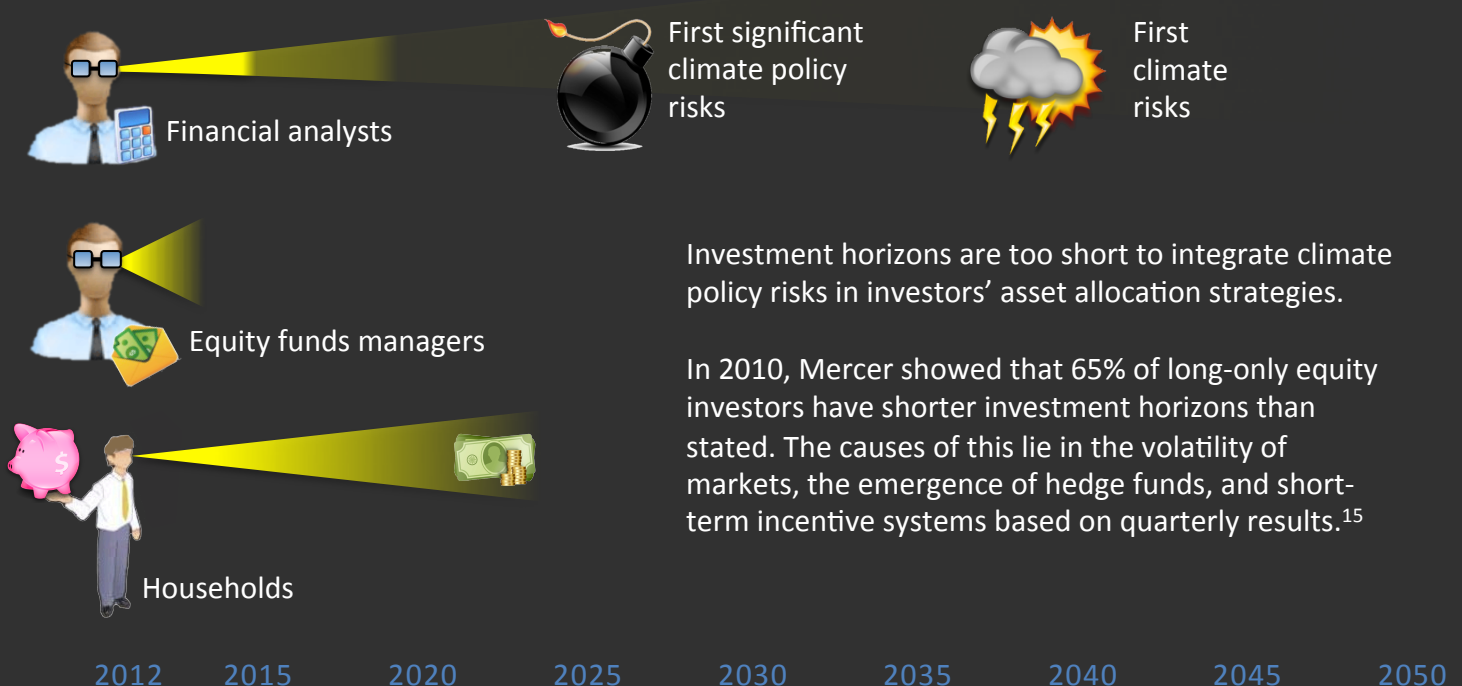
1. DESYNCHRONISED TIME HORIZONS

1.1. Climate risks. The materiality of physical and macroeconomic risks related to climate change is mainly long term (2030-2050 and beyond), even if some recent catastrophic events (e.g. Hurricane Sandy) brought the question of immediate impact back into the spotlight. Current climate policies (caps, standards and norms) aim to produce tangible short term signals, essentially by putting a price on GHG emissions. The lack of visibility on future regulations and the low carbon price to date however have prevented current efforts from having a significant effect on industrial strategies. The policy risks created are not material enough, and in the next 5 to 10 years are unlikely to drive capital allocation more into line with climate scenarios.

1.2. Financial analysis. Traditional financial analysis performs forward modelling up to 3-5 years into the future, for specific activities.¹² Beyond this horizon, only trend extrapolations are carried out. As a consequence, no long term signal, even if credible and possibly radical, is included in risk - and opportunity - assessments. Traditional financial analysis therefore mainly aligns recommendations with business as usual scenarios (e.g. no policy change, no climate impact),¹³ which are the only scenarios that have a 100% probability of not happening.

1.3. Asset allocation. As recently noted by the OECD,¹⁴ institutional investors are in theory able to take climate policy risks and the expected impacts of climate change into account, given their long-term liabilities (households savings and rights in pension funds). In practice, however, studies have shown that these investments are usually allocated in liquid funds that do not match with their clients' horizons: positions turnovers are frequently less than a year (cf. chart on page 3).¹⁵ Moreover, packaged investment products and insurers' and mutual funds managers' practice of subcontracting their funds management, both align with investment horizons that are much shorter than the related capital lockup periods (e.g. 8 years for households life insurance savings in France).

FIG. 4. THE INVESTMENT HORIZONS OF EQUITY FUNDS



2. ASSET ALLOCATION: DRIVING THROUGH THE REARVIEW MIRROR

2.1. Household savings. Households directly or indirectly (via shares in mutual funds, rights in pension funds, and bank deposits) own most global financial assets including listed equities, bonds, and outstanding loans. About 80% of their financial assets are managed by banks, pension funds and mutual funds.¹⁶ The final allocation of these assets is therefore the result of a primary level of selection (asset class/ type of product) by individual investors, and a secondary level of selection (sector/type of security/investee) by banks and asset managers.

Most economists informing policy makers believe that the final allocation is primarily driven by forward-looking assessments of the risk-adjusted return on investments.^{17, 18, 19} A closer look at the mechanics of the production and marketing chain of household financial products shows that such forward-looking assessments are only a minor correction factor in asset allocation strategies, which are in fact primarily driven by regulation, historic performance, and marketing patterns. This creates a strong invisible barrier to financing the transition to a low-carbon economy.

2.2. Strategic asset allocation. The weighting of households' financial portfolios by asset class (equity, fixed-income, etc.) is usually strongly driven by taxation considerations and by financial intermediaries' marketing. In most cases, the weighting asset classes promoted by financial intermediaries is driven by the historic risk-adjusted return profile of each asset class, usually over a relatively short period. This analysis is usually based on 'business as usual' scenarios, which assume that the economy of the next 10 to 30 years will reflect the fundamentals of the past. The deep implications of future changes, especially the 'energy transition' and climate change, are therefore not taken into account. A recent study by Mercer shows that these unaccounted risks (climate breakdown or policy-driven energy transition) contribute 11% to the overall risk exposure a long-term investor's balanced portfolio.²⁰

2.3. Asset allocation by sector. Equity investments are supposed to play a key role in financing innovation, since they allow investees to finance long-term risky investments. According to portfolio theory (on which the marketing of most funds is based), the geographic and sector allocation of assets is supposed to reflect the global economy.¹⁸ In reality, for practical and marketing reasons, the allocation of most equity funds is driven by the sector allocation of benchmark indices (Dow Jones, FTSE, MSCI, etc.), which have a very strong bias towards large-caps and developed countries.

As far as the energy sector is concerned, mainstream indices have a lock-in effect: 10%-15% is usually invested in fossil-fuel extraction and less than 0.5% invested in renewables.²¹ This does not reflect global investment trends at an operational level²² and is even further from the allocation recommended by the International Energy Agency to reach climate goals [Fig. 5]. Equally, the limited diversification of capital expenditures at energy-company level does not offset this bias.²³

This market bias towards fossil fuel assets is mostly due to marketing and to performance incentive systems: funds are ranked based on their performance against their benchmark indices on a weekly basis. Fund managers are thus incentivised based on their ability to beat the benchmark each week, rather than on the long-term performance of their fund,²⁴ even if their clients' time horizon is five, ten, or more years. To avoid commercial risk, managers are therefore 'obliged' to reproduce the exact industry allocation of the benchmark index, even if this makes no sense from a financial performance perspective [Fig. 6].

FIG. 5. INVESTMENTS IN RENEWABLES vs FOSSIL FUELS

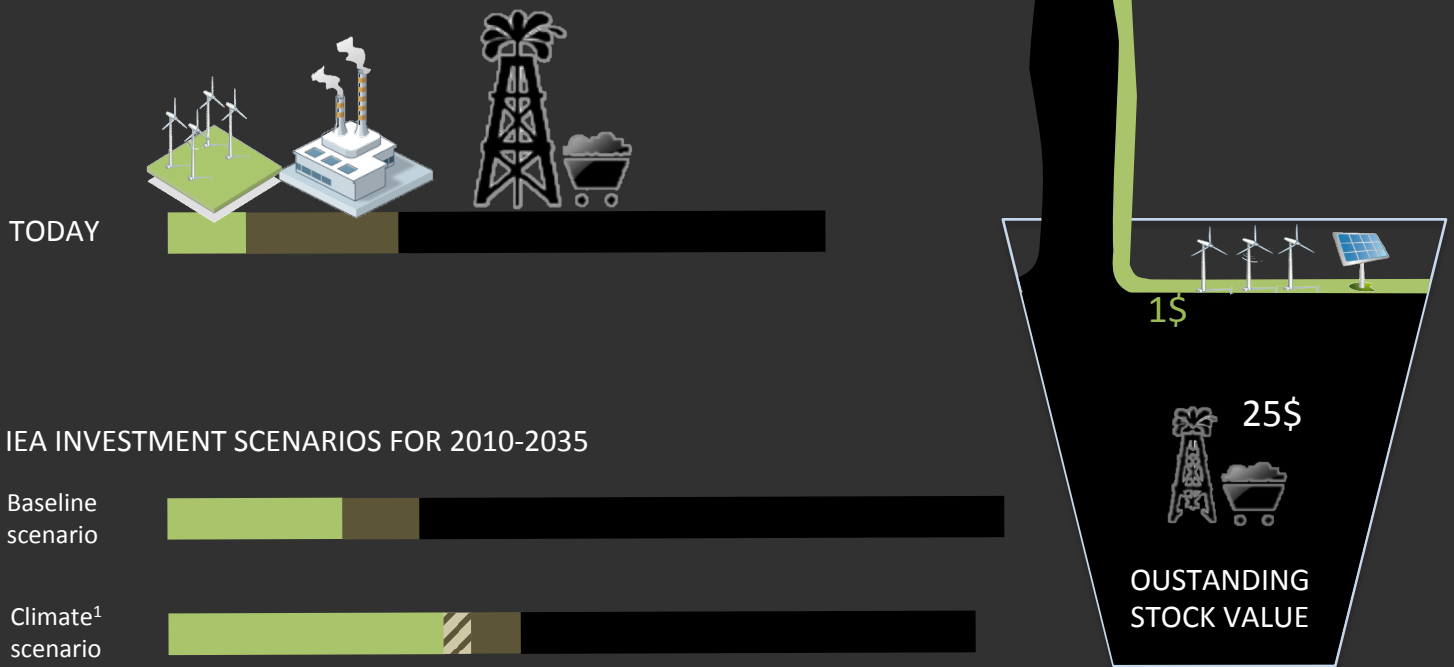


FIG. 6. PERFORMANCE OF RENEWABLES AND OIL STOCKS ARE CORRELATED

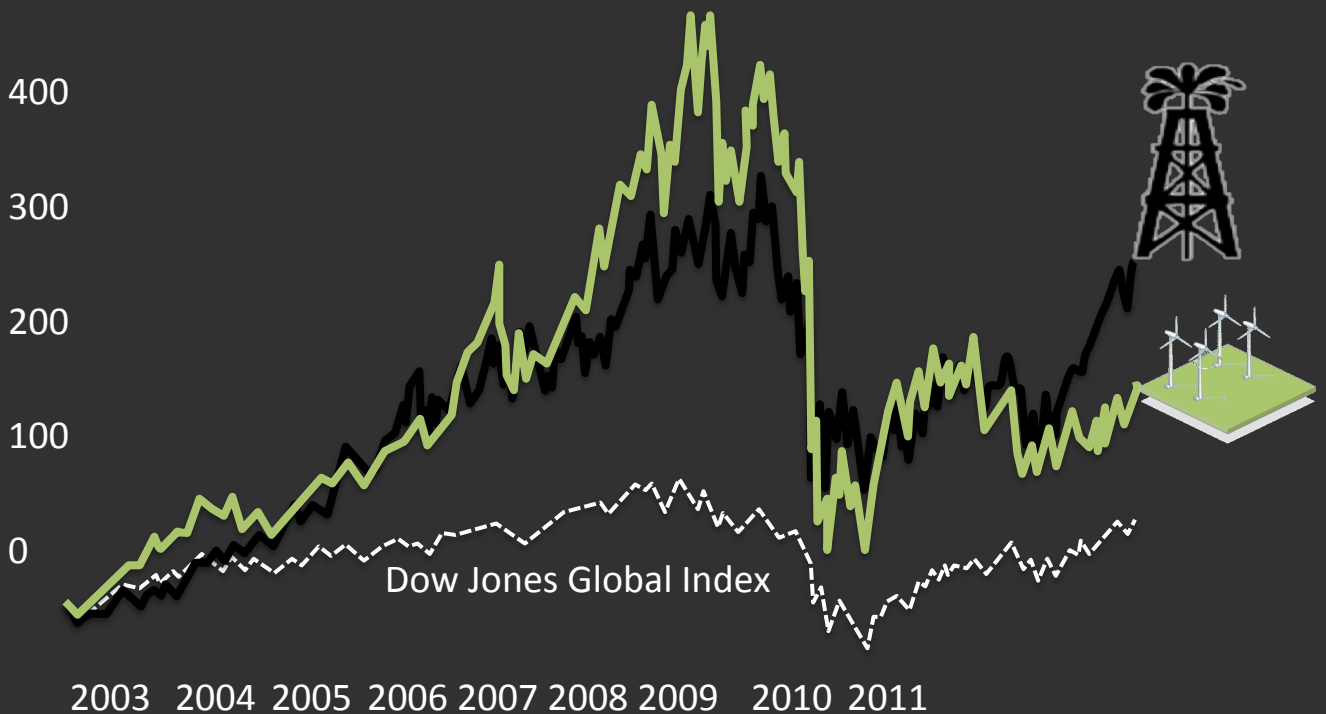


Fig. 5. Sources : IEA WEO 2011. Climate scenario (50% to limit global warming to +2°). Investment universe: 1600 cies of MSCI World Index + 200 European stocks). Data 31/12/2009 (Source: Inrate)

Fig. 6. DJ Oil index, Nex Index. Source: Bloomberg

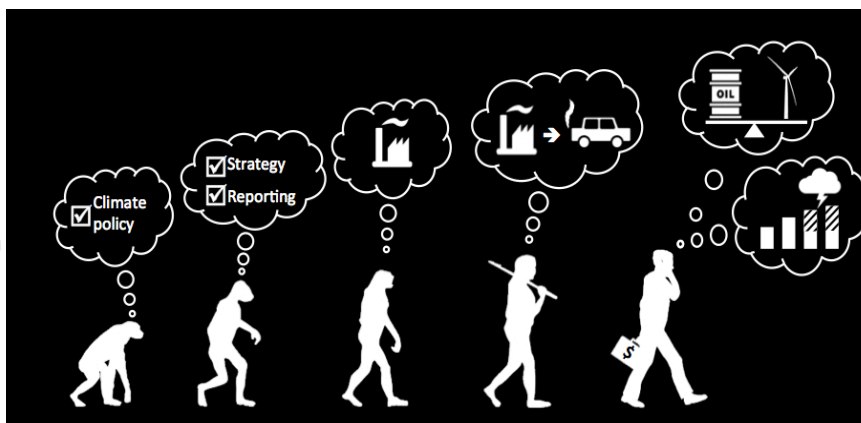
3. THE CASE FOR AN ECONOMIC/CLIMATE PERFORMANCE INDICATOR

3.1. A new paradigm. To date, most regulatory frameworks are based on the assumptions that:

- the market properly allocates private capital to finance the economy,
- ‘bottom-up’ policies, based on price signals, are sufficient to correct market failure,
- traceability of investment portfolios is unnecessary and unachievable.

The financial crisis on the one hand, and the failure of carbon markets on the other hand, have challenged these deeply rooted certainties, opening the way for a new paradigm based on the traceability of investments, impact assessments, and ‘top-down’ incentives that target investors.

3.2. The case for a cross-assets performance indicator. The conventional approach of regulators when exploring new ways to drive asset allocation is, first, to determine additional financing needs associated with specific segments (infrastructure, clean energy, SMEs, etc.), and second to try to develop targeted incentives and/or investment vehicles that address these needs. This works well for segments requiring centralised planning, such as smart grids and railroads, but the approach reaches its limits when used to tackle the broader challenges associated with financing the energy transition.



The reasons are threefold:

- The investment dimension of the energy transition requires a *reallocation* of capital from capital and carbon-intensive technologies (oil & gas exploration and production, road infrastructure, thermal power plants, coal mining, etc.) to low-carbon alternatives, rather than just *additional* investments.^{25, 26} This reallocation should occur both at company level (technology switch in capital expenditures) and at investors’ portfolio level (sectorial reallocation associated with creative destruction). The market therefore requires cross-asset incentives and disincentives rather than only support measures targeting green investment vehicles.
- Depending on the level of ambition of the underlying climate scenario, incremental technologies in carbon-intensive sectors can be considered *low-carbon* or not (e.g. advanced internal-combustion engines for cars or energy-efficient cement plants). In most cases, the conceptual framework used by policy-makers to develop incentives is based on the *best available technologies* and on *emission reduction projects*, leading them to support technologies that are ‘low-carbon’ compared to a baseline scenario, but not necessarily aligned with a +2°C scenario. In order to avoid such inconsistencies, regulatory incentives need to be based on a new conceptual framework: the ‘alignment with a +2°C scenario’.
- In many segments of the economy, low-carbon technologies remain either controversial (e.g. carbon capture and storage, nuclear power, biofuels), immature (e.g. marine energy), or still to be invented (e.g. low-carbon alternatives to cement and steel). In this context, where subsidies play such a major role for both high- and low-carbon alternatives, the technological risks are high for both investors and policy-makers. All the various climate scenarios, even those advanced by the environmental movement, are based on different bets and the future will undoubtedly be a mix of solutions. Policy-makers therefore need to adopt assessment frameworks that allow them to strongly incentivise investors to align investment practices with +2°C pathways, while at the same time leaving investors free to bet on one technology or another.

4. ESG RATINGS, FINANCED EMISSIONS, AND BEYOND

Mobilising private capital to fund the energy transition and the long-term will require new indicators that assess long-term and climate performance, both positive and negative. Such indicators would then allow regulators to incentivize investors accordingly.

4.1. ESG ratings. In theory, ESG (Environmental, Social, Governance) ratings could be a proxy for such climate/economic performance indicators. In the last 15 years, various different rating agencies and in-house analyst teams have developed assessment frameworks, data collection processes, commercial networks, etc., based on ESG criteria. The global market for ESG ratings is now estimated to be worth €40-50 mi (vs. €18 bn for the global financial data market). In the last few years, mainstream financial information players such as Thompson Reuters and Bloomberg have started to get involved.²⁷

In practice, the ‘conventional’ ESG ratings do not measure the quantitative impact of a portfolio on financing the economy. The reasons are threefold:

- Most ratings are based on qualitative assessment of companies’ management frameworks, disconnected from financing goals and climate scenarios.
- Although some rating agencies publish sector level ratings, most asset managers apply a *best-in-class* approach within each industry sector,²⁸ only comparing oil & gas companies to other oil & gas companies, whereas the climate challenge in the energy sector demands a shift in investments, from energy supply sectors to innovations in energy efficiency at end-user level.
- ESG rating frameworks are specific to individual asset categories (equities, corporate bonds, real estate, sovereign bonds) and do not adequately cover certain categories such as bank bonds and derivatives. They are therefore inappropriate tools for informing the strategic asset allocation decisions that represent up to 90% of the variation of a balanced portfolio’s returns over time.²⁹

ESG ratings therefore already provide a good infrastructure (agencies, datasets, etc.), but still require further methodological developments in order to become a genuine economic/climate performance indicator.

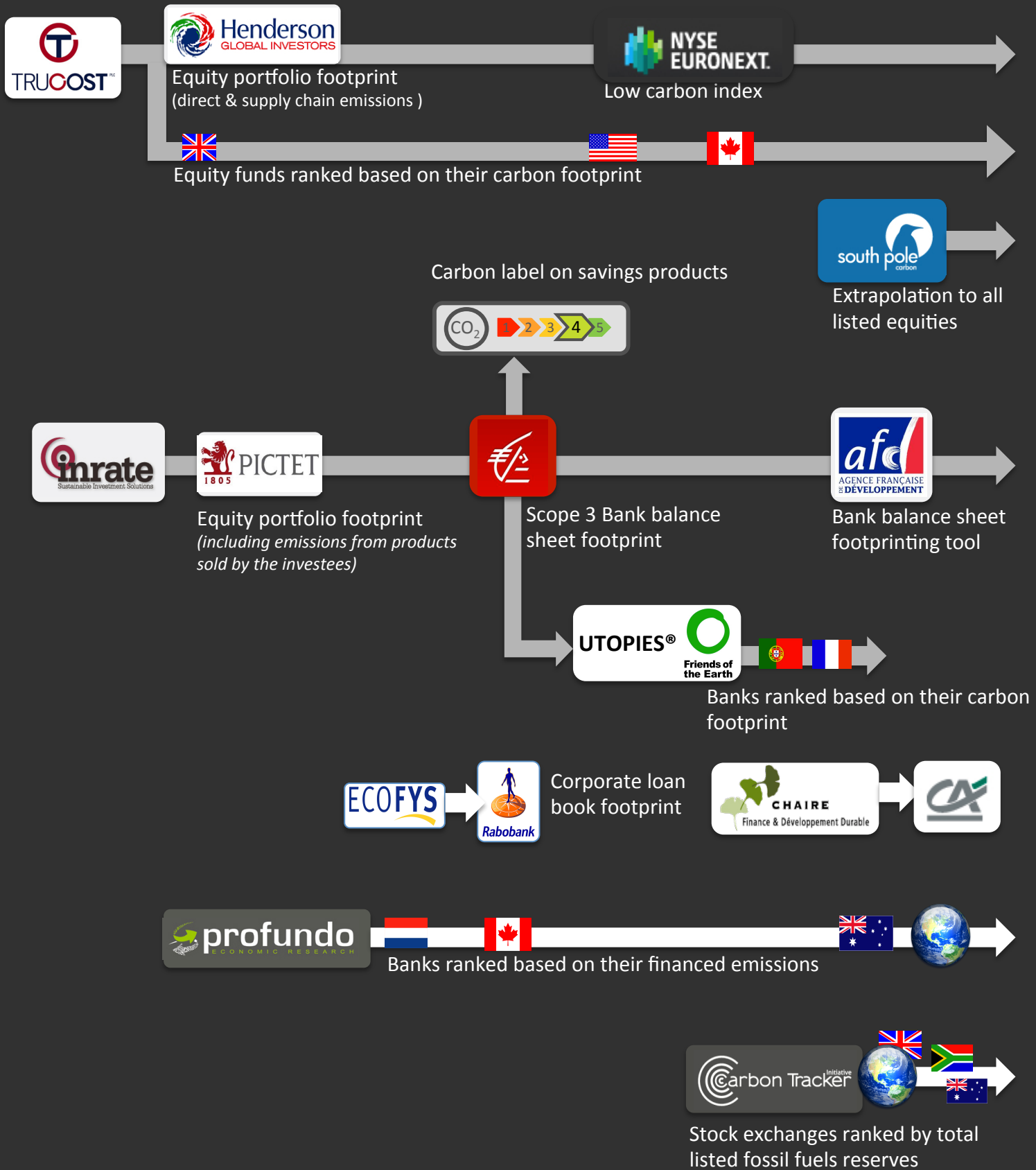
4.2. Towards impact assessment. For about 5 years now, various financial institutions, rating agencies and NGOs have developed and tested methods to calculate the ‘financed emissions’ of investment portfolios (GHG emissions linked to investees’ activities) [Fig. 7]. To date, these assessment frameworks are still at a pilot-test or niche-market phase (ten times smaller than conventional SRI frameworks). Furthermore, the GHG emissions related to the investees activities are not connected to broader climate and financing needs.

The current methods cannot distinguish between a ‘low-carbon’ portfolio that contains non-industrial assets (software, the service sector, etc.) with no significant impact – positive or negative – on climate change and another portfolio composed of low-carbon industries that are part of the solution, such as renewables or certain types of public transportation. But, given the limited R&D budgets invested on this topic so far, the margin for fast progress is significant. These approaches are receiving a growing interest from banks and investors, as shown by the new project recently launched by the GHG Protocol to release guidelines and eventually to provide a standard in 2014 . Based on the current state of practices and trends, a reliable economic/climate performance indicator could very likely be developed in less than two years.

4.3. Integrating ESG considerations in financial analysis. Based on GHG emissions data and economic forecasts, some analysts have already developed models to assess the impact of different climate scenarios on financial risk, for equities or by asset class [Fig. 8]. So far these models are still at the R&D stage and face technical obstacles. But here again, there is substantial room for improvement. Moreover, the more predictable future policy reforms become, the easier it will be to integrate them into risk assessments. The same can be said for physical climate change risk, which only needs a few more extreme climate events to be fully accounted for in global risk assessments (e.g. insurers and reinsurers are currently reconsidering premiums after Hurricane Sandy).

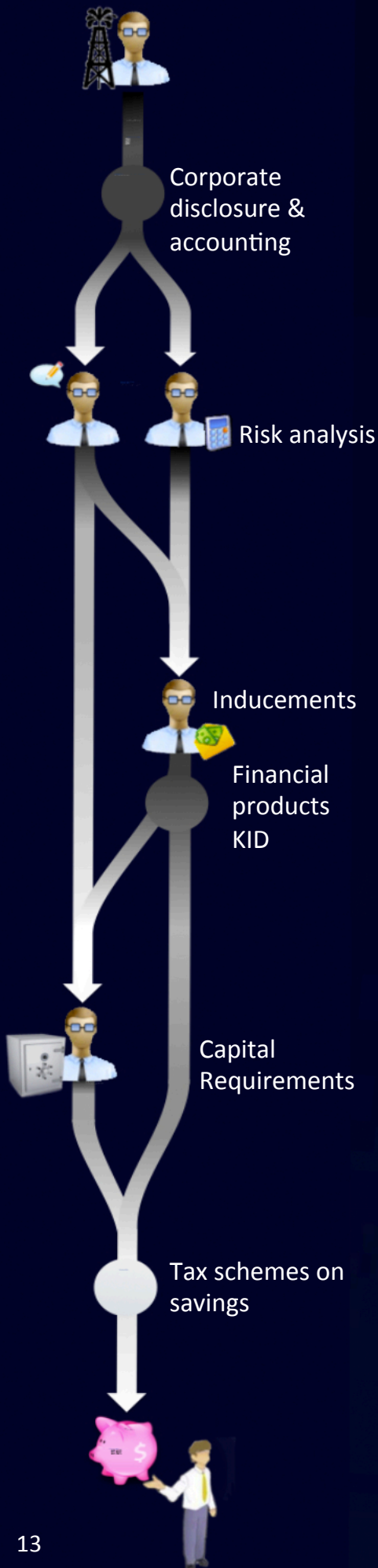
FIG. 7. A SHORT HISTORY OF 'FINANCED EMISSIONS' METHODOLOGIES

2005 2006 2007 2008 2009 2010 2011 2012



Extract from 'From financed emissions to long-term investing metrics'

C. WHAT WOULD A 2° REGULATORY FRAMEWORK LOOK LIKE?



OVERVIEW OF THE 2° FRAMEWORK

The framework suggested in this section aims to remove the barriers to the alignment of asset allocation strategies with climate goals and long-term financing needs. It is called the '2° framework' in reference to the objective of limiting global warming to +2°C, but it more broadly covers the integration of all externalities in investment strategies. This framework applies to all financial products and institutions, including households-savings.

The core objective is to align regulatory incentives that influence investment strategies with the non-financial performance of financial portfolios. The framework relies on the 'greening' of both disclosure requirements and incentives at each stage of the financial information chain, from companies to final investors.

The 2° framework is based on three pillars:

1. Assessment

The framework requires the development of cross-asset performance indicators and assessment methodologies.

This assessment has two purposes:

- Measuring a given asset allocation strategy's contribution to financing the energy transition and long-term needs (short run),
- Assessing the exposure to climate-related financial risks (long run).

2. Disclosure

The assessment of investment portfolios' impact on the economy requires traceability of financial assets. To achieve this, reporting and disclosure requirements at both company and investor level need to be enhanced.

3. Incentives

Beyond risk-adjusted returns considerations, investment strategies are influenced by a combination of commercial and regulatory incentives. These incentives need to be aligned with climate and other long-term financing goals.

1. PILLAR 1: ASSESSMENT

1.1. Financial portfolios' contribution to financing the energy transition

The proposed framework requires the development of a performance indicator. As described in the second section above (page 11), most assessment frameworks currently used for ESG ratings are not designed to assess the role that financial products play in financing the economy.

But despite their current shortcomings, the development of ESG rating and non-financial reporting in the past ten years has paved the way for the quick development and implementation of such a performance indicator:

- Regulators can rely on an existing infrastructure of rating agencies, data providers, information systems, and auditors if they introduce mandatory assessment and disclosure.
- The new generation of quantitative 'impact' assessments is a first step towards connecting the dots between investment strategies and the 'desired investment' forecasts of the 2° climate goal (cf. page 3).

Regulators can build on this foundation by introducing mandatory assessment of financial products' and institutions' contribution to financing the economy, long-term needs, and the transition to a low-carbon economy.

The diagram below shows an example of a set of quantitative criteria that can be developed to examine a portfolio. This indicator can be based on 1- the investment horizon (portfolio turnover/debt maturity), 2- the translation of asset allocation into actual investment flows matching the long-term needs of the real economy, and 3- the impact of the financed activities on future carbon emissions. Such a framework could be developed and road-tested at national or European level in less than two years, based on existing methodologies and datasets. During this period, governmental support could take several forms, such as funding the research, pilot testing the criteria on state-owned financial institutions, and publicly supporting the creation of 2° funds and stock indices.

WHERE DO WE STAND ON CLIMATE PERFORMANCE ASSESSMENT?

For about 7 years, various financial institutions, data providers, and NGOs have developed and tested new methods to calculate the 'financed GHG emissions' of equity portfolios, loan books, life insurance products, and bank balance sheets [Fig. 7]. These methods link the assets held by investors with the investees' activities and the related GHG emissions. Innovation in this field is developing fast. Data providers are currently extending the metrics to environmental impacts, job creation, etc. Research shows that these approaches can be enhanced to measure not only the carbon footprint of financial portfolios, but also the extent to which investment strategies are aligned with the investment goals set by climate scenarios.³⁰ Such a framework is currently being developed by the 2° Investing Initiative, and will be the main topic of our next publication.



WHERE DO WE STAND ON CLIMATE RISK ASSESSMENT?

EQUITY RESEARCH

Current methods for assessing climate risks rely on adjusting discounted cash flow (DCF) calculations to account for higher prices on direct or induced CO₂ emissions.³¹ These approaches have been pilot-tested by brokerage houses and researchers on climate-sensitive industries. According to several studies (see Figure 8 below) the impact of a 2°C scenario on companies' valuations can reach up to 35% for oil companies, 44% for pure players in coal mining, and 65% for car manufacturers and aluminum producers.^{32, 33}

STRATEGIC ASSET ALLOCATION

In 2010, Mercer translated climate scenarios into economic impacts (inflation, investments, etc.) to simulate the risk-adjusted return of various asset classes. The results show that climate risks represent about 11% of a balanced portfolio's risk exposure.³⁴

1.2. Exposure to long-term climate risks

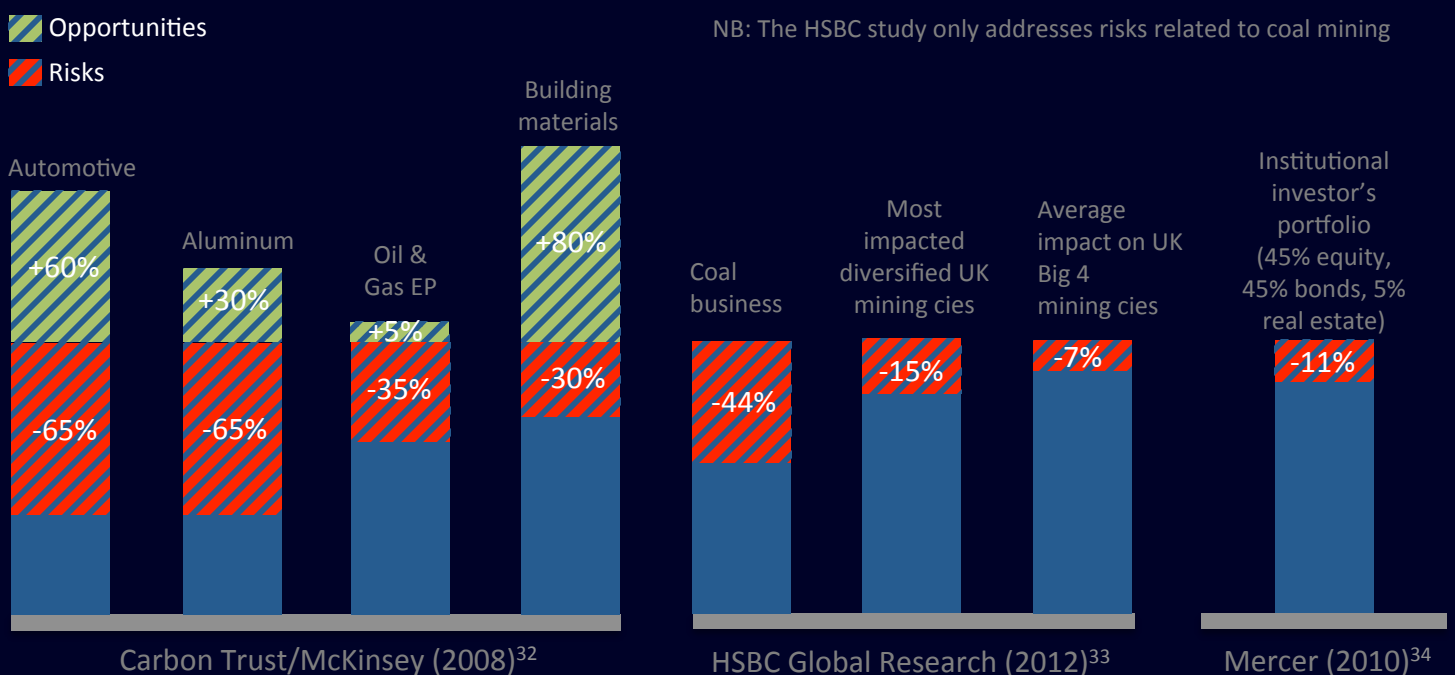
Financial institutions are experts in managing risks. But some kinds of risks, such as climate change related risks, although credible and possibly major, appear to be almost completely ignored due to discrepant time horizons. Changing the time-horizon related responsibilities of banks could therefore result in considerable risk management mutations. Nevertheless, the question of the materiality of climate risk exposure remains open.

To resolve this uncertainty, financial institutions and regulators can stress-test cash flows and portfolio returns based on climate scenarios.³¹ This approach can be applied to both credit and market risks (cf. boxes). However, contrary to 'performance assessment' (cf. previous page), risk assessment frameworks face major methodological obstacles:

- Calculating the impact of a climate scenario on an organisation's future cash flows requires an understanding of the climate-related risk exposure across its supply chain. Usually the information disclosed by issuers on their activities, assets, investment plans and the related GHG emissions is insufficient for such an analysis. This is all the more true for sovereign debt issuers.
- Most risk assessment frameworks are based on short-term investment horizons (e.g. less than a year for the calculation of capital requirements). Either this reference horizon needs be extended or assessment methods must integrate simulations of future climate policies and extreme climate change-related events. This could be methodologically coupled with mandatory stress tests from the Basel framework.

Nevertheless, research shows that these barriers can already be overcome for highly exposed industries such as coal, oil & gas or automotive manufacturing [Fig. 8], or at asset allocation level.

FIG. 8. IMPACT OF A 2° SCENARIO ON ASSETS VALUE



2. PILLAR 2: DISCLOSURE

Connecting regulatory incentives to investment portfolios' climate performance or climate risk exposure requires a minimum level of easy and cost-effective traceability across the intermediary chain [Cf. box page 17]. To this end, three types of practices would principally need to change: corporate reporting, the reporting of financial institutions, and information disclosure on financial products.

2.1. Reporting requirements for companies

Today, companies are, at best, required to report their annual GHG emissions and other output indicators. This information is almost useless to mainstream investors. To assess companies on climate performance or risk, investors need forward-looking data allowing a comparison of companies' performance with climate scenarios, as well as 'integrated performance' indicators:

- For industries highly concerned with the energy transition (energy and power, transport, heavy industries, construction, etc.), it is necessary that companies report on the breakdown of their fixed assets, capacity additions, capital expenditure, and R&D by type of technology (business-as-usual, incremental innovation, radical innovation) in the context of climate scenarios. It is also essential that they report on the total associated locked-in GHG emissions.
- Companies with high climate-policy risk exposure need to conduct climate stress tests: what would be the impact of climate policies aligned with 2°C scenarios on their future cash flows? How would they affect the valuation of the companies' assets?

The necessary reporting guidelines could be designed by existing multi-stakeholder international organisations (e.g. GHG Protocol,³⁵ the Global Reporting Initiative,³⁶ the International Integrated Reporting Council³⁷), or by public authorities at national level.

In this process of the evolution of reporting requirements, industry by industry, climate change will only be a starting point:

- In the future, reporting requirements may also be extended to other long-term material risks, such as those related to the acceptability of risky technologies (nuclear, hydraulic fracking, bio fuels, nanotech or GMOs for instance) and externalities more generally (threats to biodiversity, water resources, etc.);
- Disclosure could also pave the way for an evolution of accounting standards, especially regarding rules for accounting provisions and depreciations.

WHERE DO WE STAND ON GREEN ACCOUNTING?

REPORTING ON EXTERNALITIES

GHG reporting practices are based on annual emissions covering past years and sometimes forecasts or objectives. Most companies only report direct emissions (from factories). In the last few years, some companies have started to extend the scope of reporting to supply chains and product lifecycles. In 2009, the GHG Protocol issued guidelines to standardise these practices.³⁵ Reporting on other environmental impacts more or less follows this pattern. So far, efforts to connect these figures to financial accounts have been minimal and limited to calculating the external cost of environmental impacts.³⁷

FORWARD-LOOKING REPORTING

GHG emissions alone are not sufficient indicators of climate performance or of climate risk exposure. To assess the alignment of a company's strategy with a climate scenario, an investor needs to connect the company's fixed assets and investment plans with future emissions.

Ideally, a company should provide an analysis showing how its investments fit into climate scenarios, and the impact of potential climate policies on its future cash flow. At the very least, an analyst needs to have a clear overview of the company's investments and of its exposure to potential climate policies across the supply chain. To date, almost no company reports on these items.³⁹

WHERE DO WE STAND ON DISCLOSURE?

INVESTMENT CRITERIA

Since 2002, several countries, including Australia, Denmark, Belgium, Germany, the UK and, recently, France, have introduced mandatory reporting, for pension funds and investment products, on the ESG criteria taken – or not – into account in investment decisions.⁴⁰ A similar obligation is currently being debated at European level, for all packaged retail products (PRIIPS regulation).⁴¹

TRACEABILITY

Basel II and III requirements indirectly obliged banks to identify the economic activities financed by their assets. However, disclosure is limited to the credit exposure by top-level sector and asset type.⁴² Only a few small ‘ethical’ banks, such as Triodos⁴³ (NL) or NEF (Fr), report fully on the activities that they finance. In 2012, the retail bank Crédit Coopératif⁴⁴ (Fr) introduced a ‘green current account’ only associated with green financing, as utility companies did some years ago for renewable power.

PRODUCT LABELING

In 2008, the Caisse d’Epargne (French retail bank) introduced a labelling system on all its savings products, displaying the ‘financed emissions’ and the ‘socio-economic’ rating of the products based on the economic (or speculative) activities financed.⁴⁵ This practice ended when the bank merged with a competitor.

2.2. Reporting requirements for financial institutions

Today, institutional investors and banks do not report on the economic activities financed through their investments. Even in the best cases, disclosure is limited to exposure by top-level sector (in line with Basel II and Pillar III disclosure requirements).

Financial institutions implementing the new framework will report on the breakdown of their assets:

- by economic activity and - when relevant – by technology;
- by investment horizons (maturity or portfolio turnover);
- by country (already done partially in the “Large Exposures” regulation).

They will also report the level of alignment of their asset portfolio with climate goals set in eligible 2° scenarios (cf. Pillar I).

The reporting boundaries will include:

- balance-sheet items;
- underwriting (shares and bond issuance) and securitisation;
- the retail of financial products (savings products and loans).

Future guidelines and assessment frameworks could also be designed by existing organisations, in collaboration with public authorities.

In a second wave of regulation, disclosure requirements could be extended to other items currently associated with less mature assessment methodologies and datasets, such as:

- induced impacts such as contribution to economic value and job creation by country, biodiversity, etc.;
- the calculation of credit and market risks related to climate change and to other long-term cross-sector issues (Cf. Pillar I).

2.3. Key information documents (KIDs) for financial products

Until now, mandatory disclosure in KIDs on the activities financed by financial products has usually been limited to the investment universe (asset class, stock index, etc.) and in the best case the integration – if any – of ESG criteria in management processes.

- The implementation of a 2° framework would require disclosure of the same items as for financial institutions (see above) for all savings products (savings accounts, funds, life-insurance products, etc.). This information could simply be fully disclosed and reported as standardised labels in simplified KIDs.
- In addition, the framework would require KIDs to disclose the consolidated fees and asset management costs across the entire chain of intermediaries, thus encouraging the simplification and shortening of this chain.

3. PILLAR 3: INCENTIVES

Beyond the risk-adjusted return profile of assets, investment strategies of asset owners are mostly driven by incentive schemes across the chain of intermediaries, tax schemes on savings, and rules on the calculation of capital requirements.

Greening these incentives constitutes the third pillar of the 2° framework.

This “greening” could take three forms:

- banning counter-productive and short-term focused incentive systems;
- integrating objectives that contribute to the energy transition into incentive schemes;
- expanding the scope of financial risks considered in capital-requirement frameworks and future regulation of credit-risk agencies to include climate risks and other long-term risks.



3.1. Investor remuneration schemes

Asset managers’ and sales teams’ remuneration schemes are usually aligned with sales, the volume of transactions, or at best short-term financial performance against a benchmark. All these elements have something in common: They are almost entirely disconnected from final investors’ returns over their full investment horizon.

This structure is a strong driver of short-termism. Most aspects of remuneration schemes are invisible to customers and policy-makers and are usually not addressed by regulations. Nevertheless, this issue has now started to appear on policy makers’ agendas, especially in Europe (notably through UCITS VI, currently being debated). Greater transparency and the alignment of incentives with final investors’ interests should be an elementary requirement in any new overarching regulatory initiatives (such as the EU work on long-term investment) and all future reviews of financial markets regulation. This would include banning misleading product advertising based on short-term past performance.

3.2. Taxation on savings

Household savings represent the bulk of global assets. The main part is managed by financial intermediaries. In many countries, the taxation of revenues from savings or of outstanding amount is one of the main drivers of investment strategies.

Tax schemes are decided at country level. Fiscal incentives in favour of the economy’s financing needs are usually indirect (e.g. lower taxes on long-term savings) and/or limited to specific investment vehicles (e.g. lower taxes on “green” accounts). Under the 2° framework, the taxation of all savings products (funds, accounts, life-insurance contracts, etc.) should be modulated based on the underlying asset portfolio’s contribution to financing the energy transition (cf. Pillar 1.1).

This progressive system would, first of all, act as a carbon tax on investments, resulting in lower capital costs for low-carbon investments (green bonds, funds, loans, clean-tech companies, etc.) and higher capital costs for industries and projects not aligned with the goals of the energy transition (such as coal mining or the construction of coal-fired power plants). It would therefore encourage investors to design green investment vehicles and companies to raise capital for green capital expenditures and R&D projects.

The system’s second effect would be to reduce the net return on speculative investments that don’t directly contribute to financing the real economy’s needs, such as high-frequency trading portfolios and derivatives.

ARE WE FACING A CARBON BUBBLE?

The carbon content of proven coal, oil, and gas reserves represents 5 times the amount of CO₂ that we can release into the atmosphere while limiting global warming to +2°C. In 2011, the Carbon Tracker Initiative calculated that reserves owned by listed energy companies alone exceeded this ‘carbon budget’.⁴⁶ Since the energy sector directly represents about 10% of stock capitalisation, 8% of corporate bonds issuance, and usually more in portfolio allocation, Carbon Tracker believes that investors are exposed to a ‘carbon bubble’. Following the publication of their report, a coalition of investors has urged the Bank of England to investigate this potentially systemic risk. The issue is also being raised in South Africa, Australia, the US, and other markets.

NEW IDEAS TO ‘GREEN’ CAPITAL REQUIREMENTS

The main objective is to lower the risk premium for the investments that are most needed to finance the energy transition. One proposal (cf. Hourcade et al. 2012)^{47,48} is to create carbon certificates that can compensate the higher risk premium for such investments. A bank receiving those certificates from a project investor would exchange them for a concessional loan, using the certificates as a reserve asset to reduce its capital costs and respect legal-reserve regulatory constraints, while making more loans.

3.3. Calculation of capital requirements

The loan stock of many banking institutions is a rather illiquid asset and highly climate-change sensitive. In the same way, institutional insurers who underwrite portfolios and other contingent liabilities are potentially a climate change “pain point”. Integrating criteria related to long-term needs and to climate change mitigation into capital requirement frameworks could go part of the way to offsetting this issue’s negative impact on long-term financing (cf. section A.1).

Thinking in this area is still in its infancy. There are three ways to integrate climate goals into capital requirement frameworks:

3.3.1. The first approach would be to integrate climate goals *as such* into capital requirement frameworks,⁴⁹ given that it is necessary for economic and financial stability avoiding the amplification of the carbon bubble [cf. box]. Capital requirements could be adjusted based on an assessment of the contribution to the energy transition made by banks’ and insurers’ assets (cf. Pillar 1.1). From a technical point of view, this approach would be quite simple to implement and would have a similar effect to the modification of the tax scale on savings (cf. Pillar 3.1). It would, however, assign capital requirement frameworks with a second objective (financing the economy), thus requiring a new consensus among the concerned countries.

3.3.2. The second approach would be to integrate *climate risks* into existing risk-weighting systems. The assessment could to a certain extent rely on existing methodologies.^{50,51} However, this approach would require significant methodological improvements, the full implementation of the Disclosure Pillar (item 3.2.3), and the collection of related data by rating agencies. Following it would still face a major barrier: the short-term focus of existing capital requirement frameworks. Indeed, the global and mainstream risks related to climate change are expected to materialize in 5 to 40 years, while most assets of banks and insurers are invested with much shorter time horizons. Therefore, only very long-term loans and bonds that are held until maturity, which represent a fairly limited part of most financial institutions’ assets, are concerned here. Overcoming this barrier would thus require adjusting the time horizons of capital requirements frameworks, a change that cannot occur before Solvency III and Basel IV.

3.3.3. The third approach, somewhat simpler, would be to couple the potential short-term effects of climate change with the existing mandatory stress test framework, and to adjust capital buffer requirements accordingly. The idea here is to examine all significant climate change-related events that could occur in a time frame coherent with financial institutions’ investment horizons. These events principally include climate change policy risks, weather catastrophes, and public or political reaction, which can be tremendous after high-impact events. The literature is full of examples that need to be translated into economic and financial parameters (GDP, inflation, exchange rates, volatility, etc.) so that such scenarios can be plugged into the existing stress-test frameworks of financial institutions.

4. THE 2° INVESTING ROADMAP

Advancing towards 2° investing requires corporations, financial sector players and policy makers to create a mix of innovation and new regulations. The road map highlights examples of key actions that would help to shape a 2° framework.

Each action is associated with symbols to illustrate the level of difficulty and the time horizon for implementation:

Players



Companies reporting
(especially carbon intensive industries)



Financial institutions
(especially long term investors and investment banks)



Economists / climate experts
(e.g. international and governmental organizations)



Financial analysts
(especially brokerage firms and rating agencies)



Data providers and index producers (both specialized ESG agencies and mainstream financial data providers)



National governments, EU, Basel committee

Time frames



Practices related to 'climate performance' (contribution to financing the energy transition and the long term)



Practices related to 'climate risk'
(impact of climate scenarios on financial performance)



Arrows in light colors indicate a 'beta' version of the assessment methodology for voluntary testing



Arrows in dark colors indicate a 'robust' version of the assessment methodology that can be used as a basis for mandatory requirements

Cost of implementation

The following symbols illustrate the level of investment required to implement the actions:

\$

Just a few days from the right people

\$\$

A tiny investment at global level (< \$1M)

\$\$\$

No significant expense per company concerned (< \$1M)

\$\$\$\$

A significant expense per company concerned (> \$1M)

The road map is an invitation to brainstorm and debate, rather than a definitive set of recommendations.

The cost estimation for development and implementation is based on the experience of the authors and the analysis of similar processes.

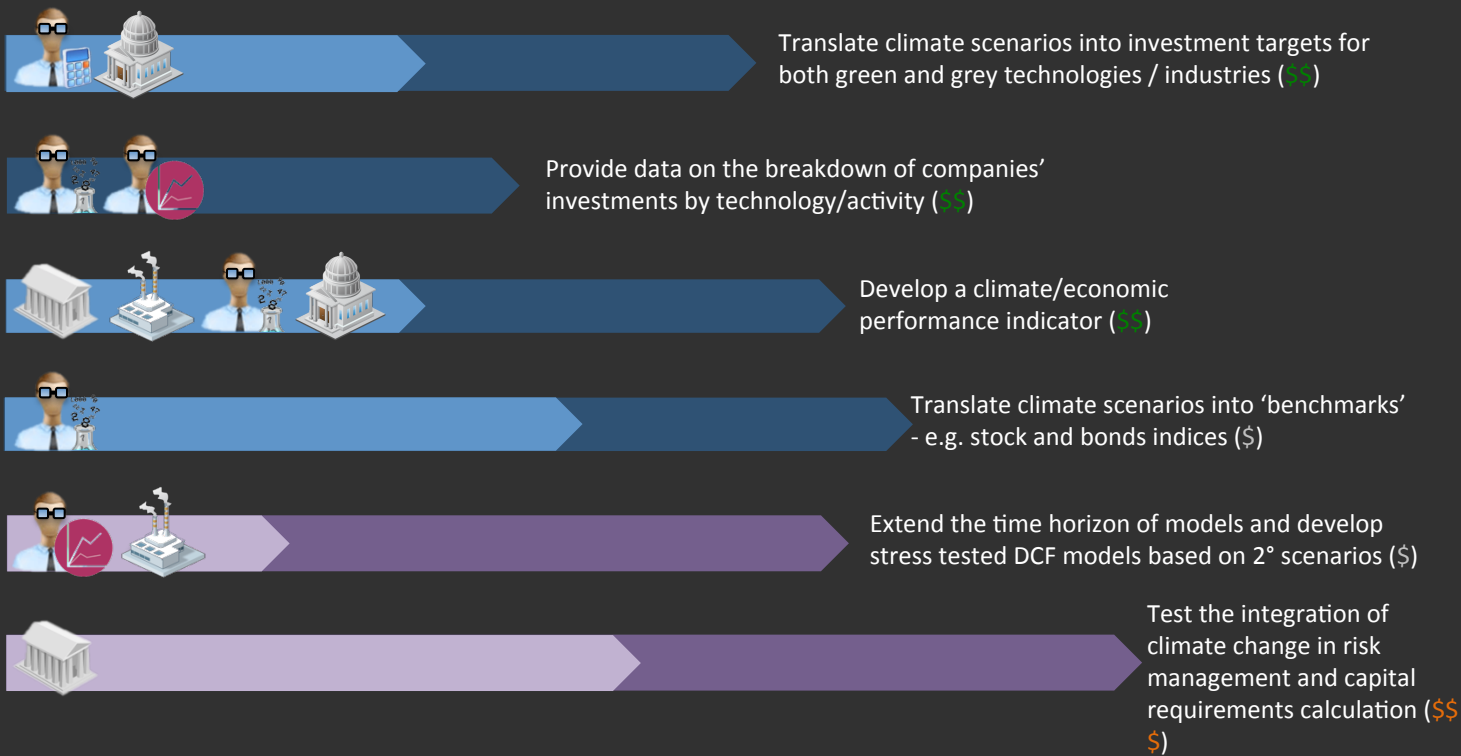
Most actions recommended are based on best available practices, mentioned throughout the report, including:

- Climate risk assessments developed by Mercer, FRR (strategic asset allocation) and HSBC, CA Cheuvreux, McKinsey, etc. (climate stressed DCFs).
- Portfolio and bank "climate footprinting" developed by Trucost, Inrate, Profundo, CA-CIB, Carbon Tracker, etc.
- Investment targets published by IEA, UNEP, Greenpeace, Barclays, etc. (climate scenarios) and McKinsey, Global Insight, etc. (economic forecasts).
- Transparency and labeling programs implemented by retail banks, such as Caisse d'Epargne, Triodos, Crédit Coop, NEF, etc.

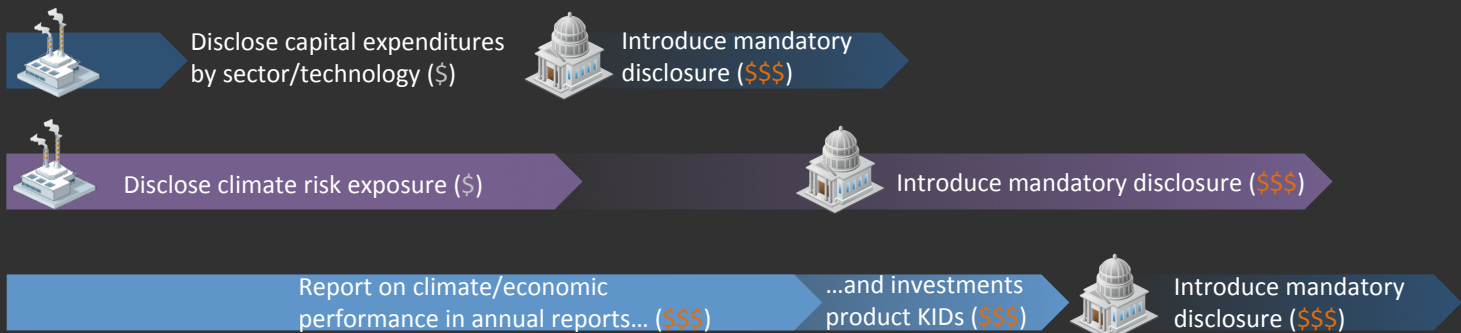


FIG. 9. THE 2° INVESTING ROADMAP

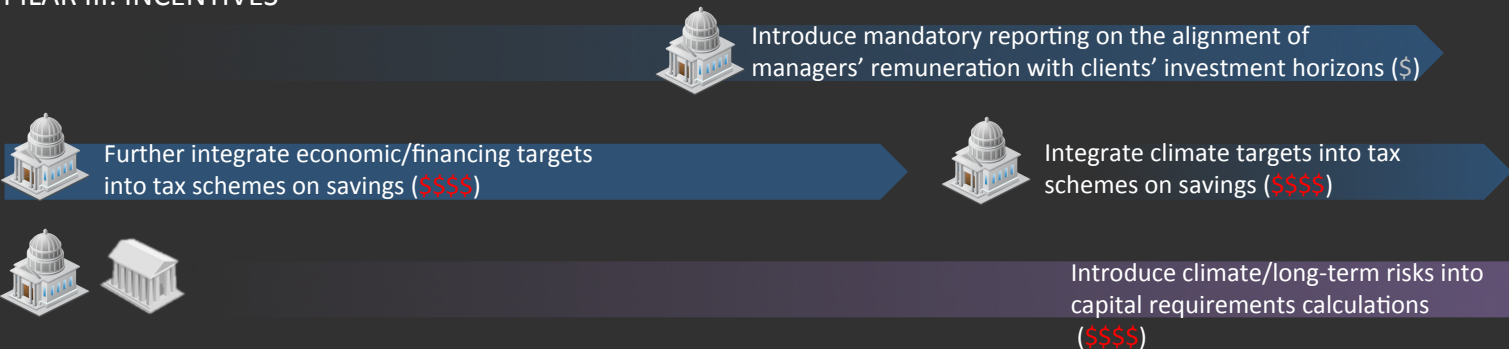
PILLAR I: RESEARCH ON ASSESSMENT METHODOLOGIES



PILAR II: DISCLOSURE



PILAR III: INCENTIVES



2013

2014

2015

2016

IS IT A UTOPIA?

According to the Global Language Monitor, “Climate Change” and “Financial tsunami” rank as top phrases of the first decade of the century and continue to resonate into its second decade.⁵² The 2° Investing Initiative targets the two phrases in one go. It may sound unrealistic to simultaneously have in mind both saving the planet and revolutionising the financial system, but in reality both crises probably share the same root cause: short-termism. Re-evaluating the role of long-term thinking, especially in the financial industry, could reconcile the economy with the environment. This is the central belief on which the 2° Investing Initiative has built its approach: long-term financing of the real economy to fuel the unavoidable energy transition and to limit global warming.

Too complex to work? The biggest challenge facing the 2° Investing Initiative is certainly the need to bring different worlds together: different disciplines, different industries, different economic sectors, different players, different levels of action, different kinds of decision makers. But we have no alternative if we are to succeed in addressing such global and systemic issues. Another level of complexity will be the required economic assessment, especially in relation to the development of a 2° investing indicator. Such a tool, linking financial allocation, real industrial investment and consequent GHG emissions, may seem quite abstract to readers not familiar with this type of approach, but it is actually less complicated than certain existing assessment frameworks, such as those used to calculate the taxes on savings or capital requirements. Finally, inertia and conservatism could be perceived as a huge obstacle. While this is not completely wrong, goodwill and appetite for change are actually very present inside institutions, carried by pathfinders, inspirers, and experts of all kinds. The 2° Investing Initiative aims to serve as a catalyser and emulator, by spreading this knowledge and clear-sightedness both vertically, within organisations, and horizontally, through whole sectors and types of stakeholders.

Too early to act? “2° regulation” could be seen as political fantasy. So far, emerging assessment frameworks are still at the pilot test phase. Nevertheless, this does not justify a wait-and-see approach:

- Given the poor level of investment in these fields to date, the room for improvement is huge and tremendous progress could already be made in one or two years;
 - Given the length of implementation schedules for financial regulation, the assessment frameworks and the related infrastructure (agencies, information systems, etc.) have enough time to ‘catch-up’.
- Furthermore, the agenda for banks and investors is adequate to introduce new ingredients, as some doors are still open in the wake of Basel and Solvency rules.
- The challenge of the energy transition requires a major redirection of capital allocation in less than ten years, a task which cannot rely entirely on a price-signal based approach. Whatever the future of climate negotiations, the financial aspect of this challenge needs to be addressed now.
- Therefore, it is high time to integrate these aspects into current regulatory debates and voluntary practices.

Too idealistic to be politically achievable? The framework requires a political consensus on two key elements:

- The relevance of integrating economic goals into financial market regulatory frameworks;
- A shared target to limit climate change below a certain level of warming (+2°C being the safest).

In Europe, or at least in some European countries, this consensus already seems to be almost reached. Unlike cap-and-trade approaches, the framework proposed by the 2° Investing Initiative does not necessarily require consensus on which economic players and countries should carry financial burden. The implementation can start at national level without weakening the competitiveness of domestic companies or financial institutions.

It does not require consensus on which technologies should be prioritised, unlike subsidies, public financing or tax incentives at operational levels. Investors would therefore remain free to bet on technologies based on the investment’s expected positive climate contribution to portfolios.

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E. EXPERTS' VIEWS ON 2° INVESTING

DIDIER JANCI, Caisse des Dépôts, Member of the Sustainable Development Economic Council (France)

“The transition towards a more sustainable model of development needs massive flows of long-term investment, especially to limit climate change due to human activities. Filling this gap depends not only on the mobilization of private savings but also on the effectiveness of the financial institutions in terms of intermediation and transformation of savings. Moreover the regulatory framework has to be adapted to take into account these challenges. In this context, the 2° Investing Initiative which aims at connecting the dots between climate goals, portfolio allocation and financial regulation is very much welcome.

This initiative, supported by Caisse des Dépôts, faces at least three challenges:

- Choose scenarios underlying asset long term allocation corresponding to plausible visions of the future.
- Build a consistent encompassing framework for portfolio allocation including extra-financial indicators using research already performed asset class by asset class.
- Last but not least, convince a sufficient number of key players to change their strategic portfolio allocation in order to trigger a progressive alignment of interests towards a better world.”

NICK ROBINS, Head of HSBC's Climate Change Centre of Excellence (UK)

“The 2° Investing Initiative is at the core of two major issues: long-term financing and climate change risk management. The case of investment in the mining industry provides a good illustration of the situation. Through history, investment in mining companies has been driven a mix of short-term volatility and longer-term commodity cycles. To date, however, investors have not considered the strategic implications of climate constraints for mining stocks, particularly those with a large exposure to coal, the most carbon intensive fossil fuel.

This needs to change – not least because of the long lead times for investment, which means that capital expenditure today on new coal assets is designed to generate returns far into the future. But this future could be a very different place for fossil fuels, as keeping warming below 2°C would need to dramatically shift away from carbon intensive energy. The International Energy Agency's 2011 World Energy Outlook, for instance, estimates that the global coal demand will need to fall 3.5% per annum in the 2020s to meet the 2°C target.

For investors, these long-term climate risks place a premium on mining companies with a diversified mix of mineral assets (including those that could benefit from low-carbon growth) and with management teams that effectively integrate carbon into capital expenditure decisions. The long lead time for mining projects (often 5-8 years or longer) means that the carbon question has real relevance for capital allocation decisions nearer term. This is a very current debate – with investors in mining stocks beginning to complain vocally about the allocation of corporate cash flow towards additional investment rather than capital return to shareholders; in the case of coal, the climate factor could tip the balance. Stewardship is the new mantra for investors in their relations with the companies they own – and in the case of coal shows why confronting the long-term risks of carbon really does matter.”

HERVÉ GUEZ, Head of ESG Research & Engagement, Mirova/ Natixis AM (France)

“The 2° Investing initiative is at the core of the key challenge for the coming years: to drive long-term savings towards financing the energy transition, helping to achieve a low-carbon economy. Beyond the principals behind such an approach, it is necessary to rethink the whole value chain from savings to investment and create adequate mechanisms, tools and measuring instruments to support this revolution. Once the guiding principles have been transformed, it is vital that players, savers, institutional investors, portfolio managers, companies, regulators and legislators have access to indicators to ensure that their investment processes are adequate enough to achieve their desired objectives. In order to emerge from this simplistic view of the economy, a view which is governed by the “invisible hand” of the market, the challenges to overcome are numerous if we are to determine the best way of allocating capital to invest in building the ideal world. This ideal world would be a world which, including facing climate change, reorients the development of an economy to blend into its natural environment.”

STEPHANE VOISIN, Head of Sustainability Research & Responsible Investment, CA Cheuvreux (France)

“Our collaboration with the 2° Investing Initiative aims to improve the quality of methodology for better assessing main financial instruments' direct and indirect impact on climate change. A major step for shifting the trend towards the global 2° target trend is in our view to make all market participants aware of the environmental consequences of their investment decisions. This reflects Cheuvreux's ambition to integrate both climate change mitigation and adaptation issues at the heart of its research model. Since we endorsed specific carbon research in 2005, we have pursued two concomitant objectives: 1) making investors aware of the risks and changes involved in the climate challenge; and 2) measuring the impact of climate change on European sectors and companies. To this goal, Cheuvreux already contributes to initiatives with the greatest legitimacy such as the IIGCC and to the CDP and we believe it is our responsibility today to also work alongside 2DI and sharing there experts, stakeholders and other market participants' view to defining a framework that could help monitoring the financing of assets and business models that support the necessary transition to sustainable growth. While our own climate change and ESG research is progressing in terms of its financial accuracy and pertinence, the challenges we continue to face in finding and interpreting information in the banking and financial services sectors do not reflect the considerable risk and consequences that we see with regard to not taking the 2° target trend into account. By doing so we are convince that Banks and Finance is not just another risk factor but that it is certainly one of the most important solutions driver.”

JAMES LEATON, Research Director, Carbon Tracker Initiative (UK)

“Carbon Tracker is delighted to see the 2° Investing Initiative take on some of the structural issues in the financial system which we have identified as critical for diverting capital to a low carbon future. We share the belief that further research and evidence is required to challenge the assumptions on which current analysis is based. This will provide investors with better tools to understand their exposure to climate risk, and map a path to developing 2° compatible portfolios. Disclosure and transparency can only improve the capacity of the capital markets to deal with the issue of climate change. And it will allow regulators and investors to monitor the number of degrees of global warming which markets and portfolios are backing. This thermometer for the financial markets will be an indicator for when the markets are aligned with global emissions targets. We believe that governments need to regulate capital in a way which demonstrates long term systemic risks such as climate change must be factored in.”

THIERRY PHILIPPONNAT, Secretary General, Finance Watch (Brussels)

“Finance Watch is an independent, non-profit public interest association dedicated to making finance work for society. We welcome the 2° Investing Initiative and see strong synergies with our own assessment and mission.

We note as well that the bulk of the financial reform agenda so far has been about setting a framework to restore a stable and trustworthy financial system. A key priority in this regard is to discourage what we call ‘betting’ or ‘speculation’, as opposed to ‘investing’. The development of high-frequency trading and massive inflow of capital in commodities-related financial products are just two examples of so-called ‘financial innovation’ that is in fact detrimental to society.

While this exercise of restoring stability and trust is quite a challenge in itself, it is only the ‘negative’ or ‘reactive’ part of the job : what matters most is that the financial system delivers indispensable services and value to real economy. The urgent necessity of incentivizing investments in long-term projects, of which the energy transition is probably the best example, should be reflected in the current effort to reform the financial system. Useful financial innovation contributing to this objective shall be welcomed and should be seen as an opportunity by all stakeholders, including the financial industry.

We look forward to work together with the 2° Investing Initiative in researching and advocating financial practices, regulation and products that benefit society and the key challenges it faces today. ”

YANN LOUVEL, Climate and Energy Campaign Coordinator, BankTrack (The Netherlands)

“This first report by the 2° Investing Initiative is more than welcome as it is innovative and opens many work areas for future progress to link finance and climate issues. As a global network of NGOs tracking the activities of their national banks around the world, BankTrack can testify that international banks are not taking the right path to limit global climate change to 2 degrees. We are indeed confronted with the financing of more and more fossil fuel dodgy deals around the world, from tar sands to coal fired power plants through arctic drilling. As our latest “Bankrolling Climate Change” report showed, the biggest international banks have for instance doubled their investments in the coal industry from 2005 to 2010, which translates into total disaster in climate terms, despite their climate speak. What’s even more frightening is to realize, from the answers we get from the banks, that most of them don’t even track or check their involvement and global exposure in these sectors. If we need to continue to fight and expose those fossil fuel dodgy deals around the world, it is also crucial to think about the best way to make the “big shift” happen as quickly as possible, with not only way more investments in energy efficiency and renewables, but also way less investments in new fossil fuel capacity. For this to happen, we need a new regulatory framework to drive asset allocation in the right direction, with different tools and incentives, on top of a strong price signal. If our experience tells us that we are still far away from this reallocation, this report shows us the way to go. Come on! ”

BEN COLLINS, Research and Policy Campaigner, Rainforest Action Network (USA)

“In our work on climate finance, Rainforest Action Network has advocated for banks to reduce the climate footprint of their financing portfolio and phase out their involvement with the worst-of-the-worst fossil fuel industry practices such as mountaintop removal mining and tar sands extraction.

While these issues remain urgent, they are only two components of the broad and complex climate-related challenge facing the global financial sector: To avert catastrophic climate change, banks and investors will need to shift trillions of dollars of investments out of fossil fuel-based energy sources and into low-carbon infrastructure. As part of this challenge, the financial sector must overcome complex market failures that call for nuanced government regulations and incentives as well as new disclosure and asset allocation tools for financial institutions. This report balances a clear-eyed assessment of the financial obstacles that stand in the way of a future low-carbon economy with an ambitious vision for aligning the financial sector with a two-degree climate target. The political and practical barriers to realizing this vision are formidable. However, we believe that the framework and tools outlined in the report provide a solid foundation for coordinated action by public, private, and nonprofit organizations on climate finance. ”

JEAN-PAUL NICOLAÏ, Head of Economic and Financial Affairs Department, Centre d'Analyse Stratégique (France)

“The banking sector plays a key-role in the dynamics of an economy. It creates "new possible paths" for households and for corporates. Where some territories or some futures are inaccessible, the action of the banking system - it supports risks, transforms risks, intermediates risks - opens new paths. This responsibility is major and owes be supervised. Some trajectories might be unwished socially. Others might be “inefficient”. Some "possible paths" might be forbidden; others forced or corrected. The organization of our economic system is based not only on a statutory system which authorizes and which forbids but on a decentralized system which gives to the actors the signals onto what is socially preferred and the free possibility to rationally decide. That is the principle of pigouvian taxes which incite people to rearrange their allocations and sometime their preferences. That is also the logic of the Basel prudential regulations.

The price-decentralization mechanism in an “incomplete markets” universe and in the presence of risk-aversion has to be built on rules modifying the criteria of choices of the agents. The Basel rules started by differentiating the costs of the risk of assets on the basis of their individual risks. The recent crisis demanded to take into consideration the systemic dimension. Other risk factors, even more systemic, as those linked to the sustainability of the economy as a whole, and specially the climate risks, can then be incorporated into the prudential rules in the same logic. That is one of the most interesting ideas of the 2° Investing Initiative. Anyway, the banking sector, in its role of intermediation, has to develop the valuation of these climatic risks in the valuation of assets. The still distant horizon and the huge uncertainty related to these climate risks demand a work of systematic cartography to help all the actors to better estimate their assets, and climate stress testing, as emphasized by the 2° Investing Initiative, could provide a good estimate of the potential impact on assets and portfolio returns. ”

ROMAIN MOREL, IAN COCHRAN AND BENOIT LEGUET, CDC Climat Research (France)

“In recent years, many actors – policy makers, NGOs, negotiators, etc. – and international institutions have called for more innovative financial tools to leverage private climate finance. The 2° Investing Initiative’s report presents a clear assessment of stakes in terms of further leveraging of climate finance. Assessing the currently insufficient financial flows dedicated to the transition to the low-carbon economy, it identifies a key element that to date has received little attention: the background dynamics of sectoral asset allocation and their links with climate change. Thus, this innovative approach acts on the supply of finance. Currently, the majority of solutions discussed elsewhere focuses rather on adapting the demand of climate finance, such as providing adapted financial tools or subsidizing low-carbon technologies. The strength of this report lies in identifying the “right” questions to analyze the climate finance conundrum, even if it is unable for the moment to provide in depth and definitive responses. Financing climate mitigation as well as adaptation is highly complex and thus requires a mix of policies and tools. Tackling the supply of climate finance should not, however, mean abandoning the improvement of the demand for the said finance. Enhancing current policies including regulation and carbon pricing is essential and the only efficient and applicable way to integrate the cost of climate change externalities and thus foster demand. The 2° Investing Initiative suggests several policies complementary to investment and the 2°C target. Some, such as the disclosure, appear to be applicable in the short term while the strongest, such as the modification of capital requirements, call for time and political will to be implemented. In its analysis, the report often hypothesises that complementary climate policies will be in place. However, it is important to recognize that that these policies are required to ensure the effectiveness of these tools. For example, integrating the valuation of the “climate policy risk” works only if climate policies are actually implemented in a widespread manner. As such, governments must continue to build the full policy and regulatory framework within which leveraging private climate finance to its full potential becomes possible. This paper makes important steps to clearly describing the issues and promoting the level of general awareness necessary to confront the challenges that lie ahead of us. For this reason, CDC Climat is proud to support this innovative report and the 2° Investing Initiative. ”

GERTJAN STORM, Honorary Advisor, International Centre for Integrated Assessment and Sustainable Development at the University of Maastricht and European Partners for the Environment

“Climate scenarios, investment portfolio risk and performance and financial regulatory frameworks are about a “big agenda” to drive the urgent solutions that are needed. The initiative of “2° Investing” to deal with the issues in a “multi-stakeholders” setting is timely, welcome and necessary!

Issues to consider for debate and action:

1. The global, worldwide nature of the agenda, with the climate issue enhanced by a number of related issues, that could be seen together in the context of the transition towards a “green economy in the framework of sustainable development and poverty eradication” global: the “2Degree”- Climate goal is part of a broader set of global issues where “interdependencies and complexity” are a strong binding factor: the analysis of “Planetary Boundaries” (2009) provides nine focal areas for a “safe operating space for humanity” - climate change, biodiversity loss, land use, water, the nitrogen- and phosphorus-cycles ... - to be addressed by the transition of the economy
2. Risk and uncertainty apply to the “Planetary Boundaries”-issues and provide both a relevant link and the opportunity to consider a broader range of issues - next to climate - by the “2° Investing”-process, in the near future.
3. “Interdependencies and complexity” on the one hand and “risk and uncertainty” on the other carry the message of the urgency to review current risk-assessment methodology and risk management practices in finance.
4. Scientific analysis can and should play a further role in supporting the initiatives to be launched and driven by the 2° Investing Initiative. The recently launched “Global Systems Science”- EU-sponsored initiative - “GSS”- is a relevant example of what “science” may have to offer to the agenda and the action of the 2° Investing Initiative: “climate policy and financial markets” is among the priority issues of the “GSS”-project.”

JAN WILLEM VAN GELDER, Director, Profundo (The Netherlands)

“This study provides a very useful contribution to the debate on the roles the financial sector should play in the necessary transition towards a sustainable economy. The study is right in identifying three pillars needed for an effective framework to align asset allocation with climate goals: assessment, disclosure and incentives. Based on our broad experience in analysing the investments of financial institutions from all over the globe in the oil & gas, coal mining and electricity sectors, I would like to make a few complementary remarks.

With regard to the first pillar, assessment, a crucial methodological question is how to assign responsibility for a company’s GHG emissions to the various financial stakeholders of the company (shareholders, bondholders, banks and other creditors). This issue cannot be resolved by research alone, some kind of global consensus is needed. This also applies to a second major assessment question: how to consolidate a bank’s GHG footprint through very different types of financial services such as lending, proprietary trading, underwriting and asset management. While a bank influences asset allocation through all these financial services, they are difficult to compare and consolidate as they differ in the level of responsibility of the bank and the permanence of the investment link between company and bank.

Finally, we would like to stress the importance of the second pillar, disclosure. It is of strong importance that financial institutions report on the break-down of their assets. This will allow research organizations like Profundo to compile comparisons and rankings of financial institutions, on how they align asset allocation with climate goals and long-term financing needs. Such rankings can be used by both NGOs and the shareholders of these financial institutions, to stimulate these financial institutions to take further steps. More disclosure will thereby complement the third (and most problematic) pillar, incentives.”

SIRPA PIETIKÄINEN, Member of the European Parliament, President of Globe EU, former Finnish Minister for the Environment and Member of the Economic Affairs Committee

“The biggest challenge facing us humans is the one of turning our economies and societies sustainable - away from the patterns of production and consumption that are eating out our planet. Financial system is the blood line feeding our societies, it should thus be in the frontline of this change.

Game theories are very useful in explaining how rules of action affect people's decision-making and choices. Sensible and well-meaning people make choices that affect them and their surroundings negatively, if the incentives and rules are tuned in to support such behaviour. If greediness and short-sighted action is rewarded by the system, in the same time as long-span stability and altruism are repelled, the results will in turn not favour long-term solutions benefiting us all.

The global environmental crisis highlights the crisis of the current way of thinking and acting. The lack of global rules and regulations means that the real costs of human action - the way we produce and consume - are not included in the prices we pay. The profits are enjoyed by few, while the costs and risks are borne collectively by all of us. The market has failed to incorporate the huge cost of climate change created by the use of fossil fuels. Unfortunately those less capable of reaping the benefits of the current system are the ones most affected by the adverse effects.

What the 2 degrees initiative in this report does is trying to show how things can be different, in a very understandable and coherent manner. Us policy makers can draw concrete lessons from the thinking driving this welcomed initiative.”



The 2° Investing Initiative is a multi-stakeholder think tank that brings together financial institutions, policy makers, research institutes, experts and environmental NGOs. "Dedicated to research and awareness raising to promote the integration of climate constraints in financial institutions' investment strategies and financial regulation, 2°ii organizes sharing and diffusion of knowledge, and coordinates research projects."

Created in 2012 by 20 French and international partners, the 2° Investing Initiative is funded by the Caisse des Dépôts Group, the ADEME (French Agency for the Environment and Energy Management) and the French Ministry of Ecology and Energy.

The name of the initiative relates to the objective of connecting the dots between the +2°C climate goal, risk and performance assessment of investment portfolios, and financial regulatory frameworks.

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