INVESTOR CLIMATE DISCLOSURE
STITCHING TOGETHER BEST PRACTICES

2° Investing Initiative

May 2016

INTRODUCTION

Climate related financial disclosure has emerged as a key issue, driven both by policy support and voluntary initiatives. Notable policy support includes the French law on the Energy Transition (Art. 173; 2dII 2015a), initiatives in California and Sweden, processes launched by the G20 and the Financial Stability Board, and the impetus from the Paris Agreement at COP21. Voluntary reporting initiatives have also proliferated, notably the PRI Montreal Pledge at international level and initiatives at national level (e.g. Sweden and French asset management association). Voluntary reporting may also respond to civil society pressure (e.g. Divest movement). Given the different drivers, transparency by financial institutions seeks to respond to two key objectives:

• Reporting on the **alignment of financial flows with climate goals**, as agreed to in the Paris Agreement at COP21 (Art. 2.1(c), is defined as an objective by a growing number of investors and as one of the core reporting requirements in the French regulation. The Paris Agreement Art. 9 includes a five year "global stocktake" of national policies, which may also affect the progress towards achieving the objective defined in Art. 2.1(c).

• Reporting on financial risks associated with the transition to a low-carbon economy (**transition risk),** highlighted by a growing body of research, focus of the G20 Green Finance Study Group, the FSB, and a number of research initiatives at national level.

This review is designed to map the current options for investors seeking to disclose on the climate goal alignment and / or transition risk associated with their financial portfolios. It analyzes climate goal alignment and transition risk metrics, as well as proxies for reporting with regard to both objectives. The review then provides key conclusions and an illustrative best practice reporting framework.

Climate Goal Alignment Metrics	*Commonly used proxies*	*Transition Risk Metrics*
• Top-down portfolio level analysis • Sector level analysis • Security level analysis	• Backward-looking carbon footprint • Portfolio avoided GHG emissions • Green/brown exposure metrics	• Forecast actual capital plans & GHG emissions • Voluntary corporate targets • Extrapolation of past trends

SUMMARY: CLIMATE DISCLOSURE OPTIONS

	Metric	Available	Asset class	Pro	Con	Next steps	Cost
Climate goal alignment	Forecast capital plans	✔	Listed equity; corporate bonds (*from Sep 2016*)	Based on actual data; Open source	Only for some sectors & asset classes	Future emissions; other asset classes	Currently free
	Voluntary corporate targets		Listed equity; corporate bonds	Applicable to more sectors than capital plans; Based on 'Science-based targets'	Limited to companies w/ targets	-	-
	Extrapolation				Past trends poor proxy	-	-
Transition risk	Top-down analysis	✔	Cross-asset	Comprehensive, highly developed	Proprietary methodology	Standardized scenarios (ET Risk)	EUR +20,000
	Sector level analysis	✔	Cross-asset	Simple, low-cost; can be done in-house	Doesn't capture intra-sector trends	Standardized scenarios & development of new bottom-up models (ET Risk)	Free
	Security level analysis		Listed equity; corporate bonds;	Highest granularity ensures highest 'accuracy'	Bespoke; potentially expensive		Costs vary
Proxy climate metrics	Backward carbon footprint	✔	Listed equity; sovereign & corporate bonds; alternatives	Can be used for all sectors and asset classes	Can be misleading, only illustrative; in some cases lack of transparency on methodology	Growing Scope 3 estimates	Est. EUR 20,000 – 50,000 w/ some metrics free through Bloomberg
	Avoided emissions	✔	Listed equity; project finance	Ability to measure 'green' using GHG		Expansion of coverage	
	Green / brown	✔	Listed equity; corporate bonds	Cross-sector coverage		-	

CLIMATE GOAL ALIGNMENT

OVERVIEW

Background. Both the corporate and financial sector have recently seen a growing interest in measuring the *alignment* of business plans and investments with global and national climate policies – whether physical assets or projects, companies, investors, financial institutions, and the financial system as a whole are doing their "fair share" of decarbonisation in a "science-based" transition (Figure below; SBTI 2015; NAZCA 2015; PCI 2015; CPI 2015). Assessing such alignment necessarily requires *scenario analysis* and *future targets* rather than *backward-looking* approaches, as the energy transition by definition includes both a starting point and a desired target (i.e. a 2°C compliant scenario). As the next page shows, there are several options for defining alignment, including extrapolating past trends, analyzing company-level targets, and forecasting actual capital plans.

Current supply. For financial institutions, only one methodology currently commercially available in the market allows investors to measure the alignment with climate objectives. The SEI metrics project 2°C alignment test is currently available for listed equities focused on four sectors and has been launched in September 2015. Expansion of the model to other sectors and asset classes is under way. At company level**,** seven approaches have been reviewed and approved by the Science Based Targets Initiative (SBTI), consisting of CDP, WRI, WWF, and the UN Global Compact.

Current demand. Investors with over $600 billion in AUM have committed to decarbonizing their portfolio through the Portfolio Decarbonisation Coalition (PDC). The SEI metrics 2°C alignment check is being tested currently by over 60 investors.

Options for disclosure. At this stage, investors can disclose the 2°C alignment of their listed equity portfolios. Disclosure options in other asset classes are currently being developed..

124 companies SBTI

*50 Investors SEI Metrics;
$600 billion AUM PDC*

**Physical assets/
Projects**

Companies

**Sectors / Portfolios /
Financial institutions**

THREE OPTIONS FOR ASSESSING ALIGNMENT OF COMPANIES AND PORTFOLIOS (SOURCE: AUTHORS)
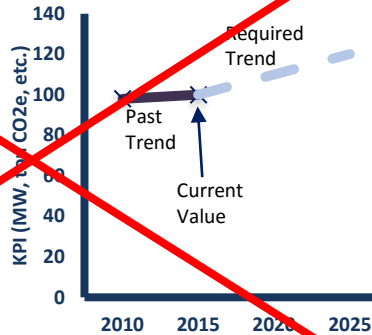
POINT-IN TIME PROXIES (p. 15 and following)

Pros:
- Only past data required

Cons:
- No future trend available
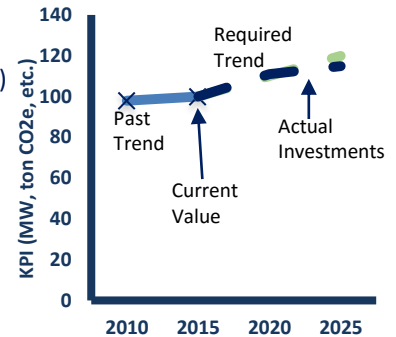- Relies on disclosure

OPTION 1: FORECAST ACTUAL CAPITAL PLANS (pg 6-7)

Pros:
- Future oriented
- Material business data (capex)
- Consistent boundaries
- Covers non-reporters

Cons:
- Incomplete data
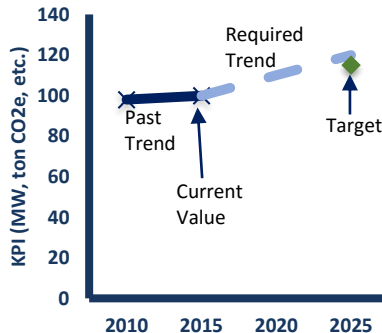- Consolidation of subsidiaries
- Not all sectors covered

OPTION 2: VOLUNTARY CORPORATE TARGETS (pg 8)

Pros:
- Future oriented
- Applicable across sectors

Cons:
- Words Actions
- Relies on disclosure
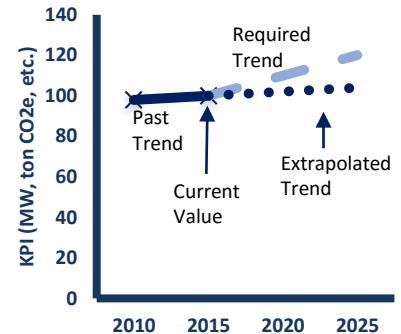- Inconsistent boundaries across companies
- Data coverage (voluntary)

OPTION 3: EXTRAPOLATION OF PAST TREND (pg 8)

Pros:
- Based on actual data
- Applicable across sectors

Cons:
- Past performance future
- Relies on disclosure
- Data coverage (voluntary)
- Inconsistent boundaries across companies

Capital Plans vs. 2D scenario
SEI Metrics model (public)
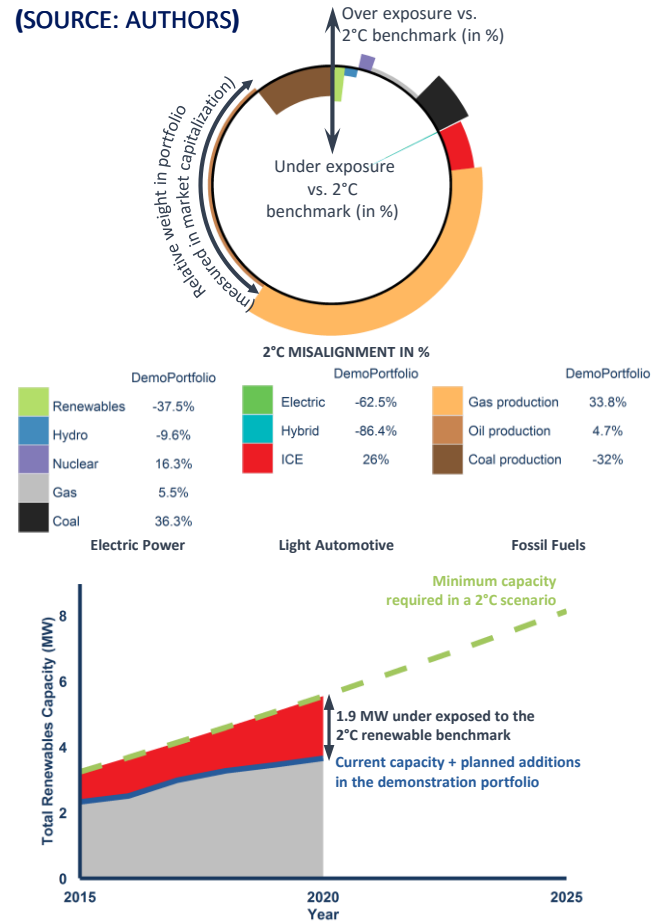*Commercially available*

Summary: The SEI metrics consortium (led by the 2° Investing Initiative) launched the 2°C compatibility test in September 2015. The free test (supported by public research funding) measures the alignment of financial portfolios with the 2°C climate goal, translating economic roadmaps into financial market roadmaps (Fig. 1). The compatibility test is now being offered by at least 4 commercial data providers and is road-tested by over 60 investors. The final model, extended to additional sectors, will be published in the fall 2016.

Pros: The model is a science-based, forward-looking assessment of financial portfolios, relying on actual capacity and production plans by company, using asset level data.

Cons / Gaps: The model is currently limited to four sectors (power, automobile, oil & gas, coal mining) and to equities. Future sector expansion is planned but is limited to sectors where detailed 2°C compliant roadmaps are available.

Cost: The 2°C benchmark is currently offered for free as part of the roll-out of the model. Eventually fees may be charged for this assessment or offered as part of the existing subscription services (e.g. Bloomberg tool, etc.).

FIG 1: SAMPLE RESULTS OF 2°C COMPATIBILITY TEST (SOURCE: AUTHORS)

2°C MISALIGNMENT IN %

DemoPortfolio		DemoPortfolio		DemoPortfolio	
Renewables	-37.5%	Electric	-62.5%	Gas production	33.8%
Hydro	-9.6%	Hybrid	-86.4%	Oil production	4.7%
Nuclear	16.3%	ICE	26%	Coal production	-32%
Gas	5.5%				
Coal	36.3%				
Electric Power		**Light Automotive**		**Fossil Fuels**	

Future emissions vs. Carbon budgets
SEI Metrics model (public)
*Under development*

Summary: The SEI Metrics research consortium and consulting firm EY are currently developing a forward-looking assessment of the carbon footprint of companies' assets utilizing asset-level databases for power, fossil fuels, automotive, steel, cement, and airlines sectors. The analysis is an extension of the SEI metrics model (pg 6) and estimates companies' emissions at physical asset level. This allows relevant breakdowns of company emissions such as by fuel and age and exposure to different countries' policies (Fig. 2).

Pros: The carbon footprint (pg 16) is an indicator that can be used across different sectors and across asset classes. At physical asset level, the metric allows risk- and alignment-relevant assessments of regulated (and potentially regulated) emissions in different markets, geographies, fuels, ages, etc. while removing less material and variable parts of companies' emissions footprints (e.g. company cars, headquarters buildings, etc.). Consistent corporate boundaries and consolidation rules are possible.

Cons / Gaps: The assessment is not yet available. It is only possible for sectors where asset-level data exists and is allocable to parent companies. Some estimation is necessary for most databases.

Cost: Unclear, since assessment is not yet available.

FIG 2: ILLUSTRATIVE FORWARD-LOOKING CARBON FOOTPRINT FOR EU UTILITY, BY FUEL AND LOCATION
(SOURCE: 2°II, GLOBALDATA)

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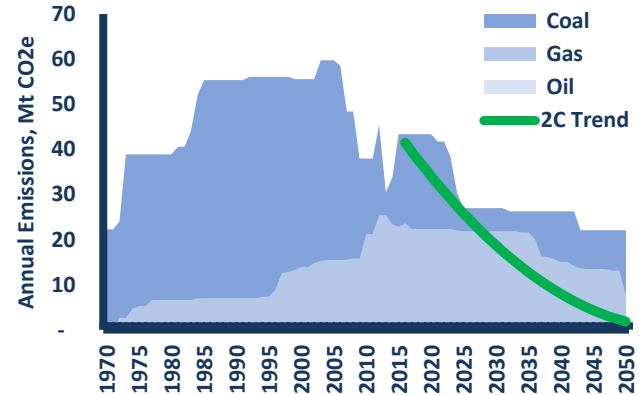
Corporate targets & extrapolation of past trends vs. 2°C Scenarios
Exane BNP Paribas
Bespoke paper

Summary: In 2015, Exane BNP Paribas published the science-based target screening assessment for the listed utilities, automotive, materials, retail, and real estate sectors. The analysis utilized publicly reported data on energy and emissions intensities and targets in these sectors to assess issuer-level alignment based on forward extrapolations and targets (Methods 2 and 3 above; Fig 3) using the Sectoral Decarbonization Approach (SBTI 2015; Fig 4).

Pros: The method is forward-looking and applicable in many sectors. Performing the assessment at issuer level allows both stock picking and a portfolio assessment for disclosing companies in these sectors.

Cons / Gaps: Only applicable in sectors with existing roadmap, though further work could evolve to more general methods. While forward-looking, the analysis relies on either extrapolation of past trends or declared targets. It relies on corporate disclosure of both time series emissions data and emissions targets, leading to potentially incomplete portfolio assessment where disclosure is incomplete.

Cost: No commercial offering currently exists for this technique outside the published equity research.

FIG. 3: SECTORAL DECARBONIZATION APPROACH: STEEL PROFILE (SOURCE: SBTI 2015)
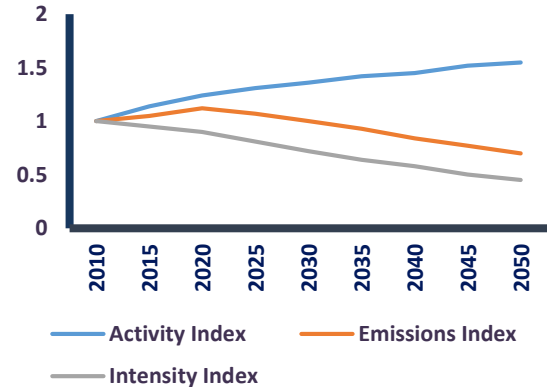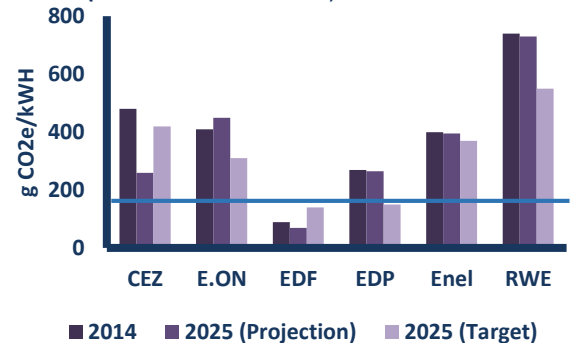

— Activity Index — Emissions Index — Intensity Index

FIG. 4: SAMPLE RESULTS OF ANALYSIS—UTILITY SECTOR (SOURCE: EXANE 2015)

■ 2014 ■ 2025 (Projection) ■ 2025 (Target)
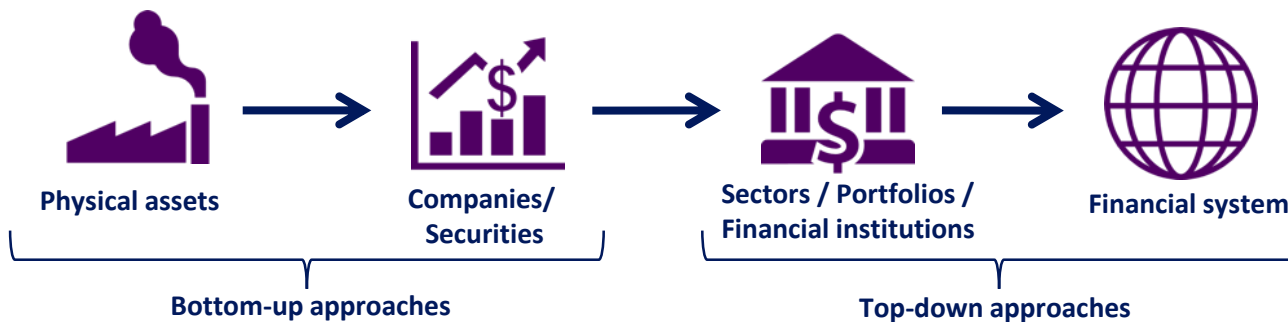
TRANSITION RISK ASSESSMENT

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OVERVIEW

Background. This review is limited to reporting options related transition risk, which has fundamentally different drivers and assessment methodologies than physical climate risk (2dii 2016a). Transition risks and opportunities arise from policy, market, and technological trends associated with the achievement of the 1.5-2°C policy goal.

Current supply. At investor/portfolio level, existing transition risk assessment techniques can largely be classified into two categories:

- *Bottom-up approaches*: Alternative credit rating & cash flow models applied at company/security level.
- *Top-down portfolio (cross-asset) approaches:* Portfolio level models used for high-level risk exposure and strategic asset allocation based on a top-down assessment of exposure to asset classes and sectors;

Options for disclosure. Recent evidence suggests that investor demand for both approaches is relatively low but may be growing in response to regulatory initiatives and market drivers (Ceres/2dii/ETA/CTI 2015). Given their nature, these different assessment approaches lead to different types of disclosures—top-down approaches presenting results at sector, portfolio, or institution level (pg 11) and bottom-up approaches at security level (pg 12-13). Each is described in the following pages.

Physical assets → **Companies/ Securities** → **Sectors / Portfolios / Financial institutions** → **Financial system**

Bottom-up approaches   **Top-down approaches**

TOP-DOWN PORTFOLIO LEVEL ANALYSIS
Mercer TRIP Model (Mercer 2015)
Commercially available

Overview: Cross-asset, portfolio-level transition risk models allow investors to identify risk hotspots in their portfolio and identify potential financial opportunity. The Mercer TRIP is currently the only model that delivers such an assessment. It is a top-down model that allows investors to assess transition and physical climate risks at asset class and sector level for equities (Fig. 5 & Fig. 6). The model has a time horizon of 10 to 35 years. It builds on the first assessment developed in 2010. There are over 30 investors that have used the model, including the 18 participants in the study.

Pros: The standardized nature of the model ensures commercially scalable application. It integrates a comprehensive set of risk factors, including both physical (out of scope in this review) and transition risk.

Cons / Gaps: The methodology is proprietary with limited transparency. Sector-specific exposure is only estimated for listed equity – with limited granularity / differentiation for other asset classes. The relatively short time horizon of the model may fail to capture more long-term transition risks

Cost: Costs will differ depending on size of investor, but are estimated to start at around EUR 20,000 for an investor.

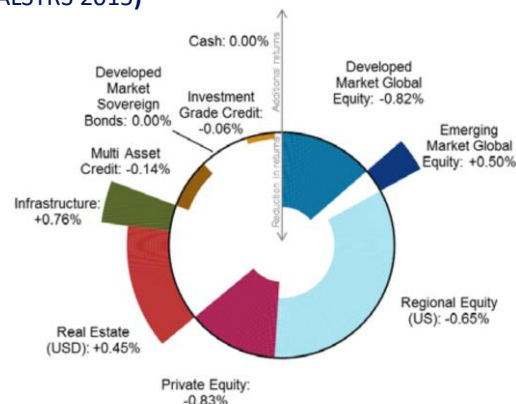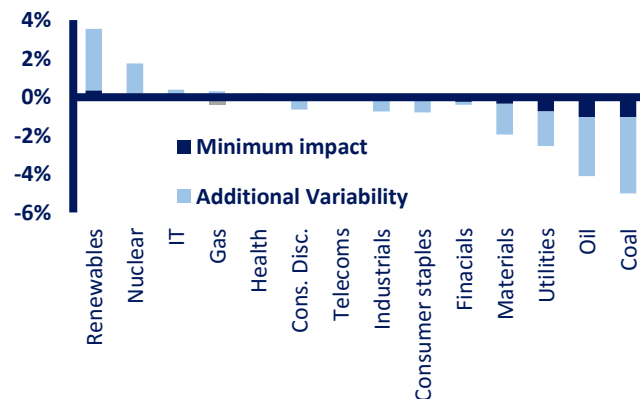**FIG 5: IMPACT ON CALSTRS PORTFOLIO AT 10 YR UNDER TRANSFORMATION SCENARIO (**SOURCE: CALSTRS 2015**)**

FIG 6: CLIMATE IMPACT ON RETURNS BY SECTORS OVER 35 YEARS (SOURCE: MERCER 2015**)**

SECTOR-LEVEL ANALYSIS
Moody's (credit), various authors (equity)
Bespoke papers

Overview: Sector-level risk assessments can act as a screening tool for many types of climate-related and broader ESG risks. Moody's has released a 5-10 year horizon credit risk "heat map" (Fig. 7) and sector-level risk results are available for equities in top-down portfolio level models (Fig. 6 & Fig. 8).

Pros: Sector-level screening is relatively quick and easy compared to some other techniques and can help to isolate areas of the portfolio for further analysis. Sector-level disclosures can be a useful semi-quantitative indicator of actual risk exposure.

Gaps: Most available publications/methods rely on proprietary methods and do not isolate climate-related risks from broader environmental risks. Granularity is limited to sector and cannot distinguish issuers. For Moody's heat map, given the lack of commercial service availability, there is no guarantee of further update.

Cost: Sector-level exposure screening can be done in-house by investors, either through in-house categorizations or based on external classifications (e.g. Moody's heat map). This can be complemented by putting value or risk figures on the exposure, done either in house or through external estimates.

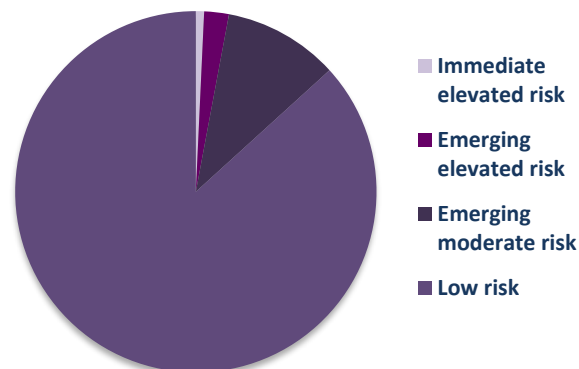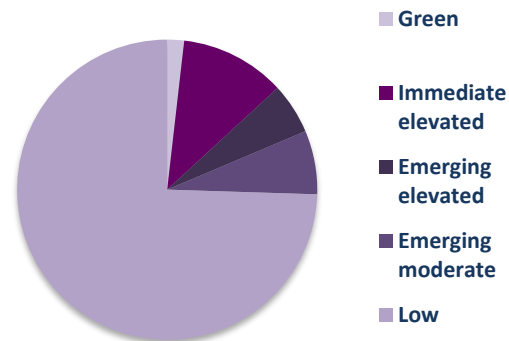**FIG 7: SHARE OF MOODY'S RATED UNIVERSE AT RISK** (SOURCE: MOODY'S 2015)

- Immediate elevated risk
- Emerging elevated risk
- Emerging moderate risk
- Low risk

FIG 8: ILLUSTRATIVE SECTOR SCREENING RESULTS FOR DIVERSIFIED PORTFOLIO (SOURCE: AUTHORS)

- Green
- Immediate elevated
- Emerging elevated
- Emerging moderate
- Low

SECURITY-LEVEL ANALYSIS
Various authors
Bespoke papers

Summary: Bottom-up fundamental financial analysis at company level can be used to assess the impact of different scenarios on the company's revenues, margins (Fig 10), etc. and in turn its valuation (Fig 9) or credit risk. Many reports have been published over the past 5 years, including from HSBC, Kepler-Chevreux, S&P, Moody's.

Pros: Alternative discounted cash flow (DCF) and credit risk modeling builds on fundamental analysis and is thus broadly understandable by financial players. Because it is performed at issuer level, it distinguishes issuers based on their asset profiles and exposures. Results can directly be used in valuation models and for stock-picking or detailed credit risk modeling.

Gaps: Bottom-up analysis is labor and time-intensive due to the reliance on detailed data and modeling at security level. Absolute impacts on revenues and margins are highly dependent on assumed scenario. Most analysis is bespoke and no easy mechanism exists for investors to "order" such an analysis.

Cost: This type of assessment remains bespoke and so costs differ widely. Investors can use the results of previous analysis for free if publicly available, but the coverage may not fit to the investor. The exception is the relatively simplified Bloomberg tool for fossil fuels, which is available for free on the Bloomberg Terminal.

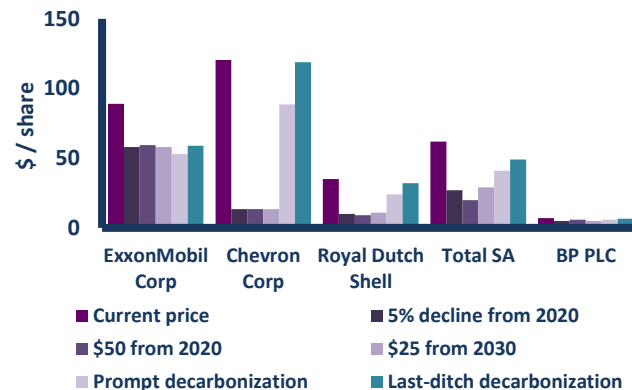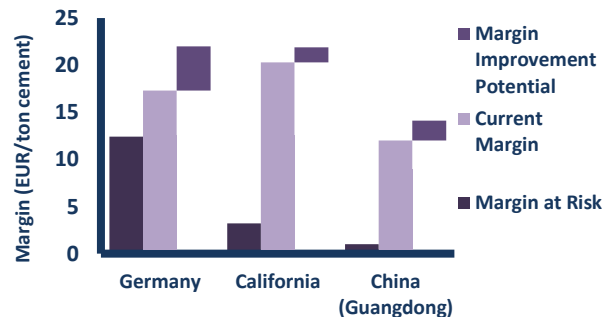**FIG. 9: CHANGES TO SHARE PRICE AS A RESULT OF DIFFERENT PRICE SCENARIOS (**SOURCE: BNEF 2014**)**

FIG 10: NET MARGIN IMPACT OF CARBON REGULATION IN CEMENT SECTOR (SOURCE: THE CO-FIRM 2015)

COMMONLY USED PROXIES

OVERVIEW

Background. Due to both the difficulties and relative newness of some risk and alignment techniques, a diverse group of metrics have been developed over the past decade to track point-in-time "climate friendliness" of portfolios (2015). While these metrics are designed to act as measurement proxies, their shortcomings suggest they cannot be used as key performance indicators for either transition risk or climate goal alignment, acting as more illustrative indicators. They are thus particularly relevant for use in those asset classes or sectors where actual transition risk and / or climate goal alignment metrics are missing.

Current supply. As reviewed by (PCI 2015), climate proxies and their providers are growing in prevalence, with at least 10 commercial providers. Many major providers have expanded their offer recently (e.g. Bloomberg footprint tool, MSCI).

Current demand. Over 110 investors and asset managers have signed the Montreal Pledge, involving the disclosure of their portfolio carbon footprint. Beyond, a growing number of investors are looking at 'green / brown' metrics, in particular related to fossil fuel reserves or share of revenues derived from fossil fuels.

Options for disclosure. Options are quite extensive given the variety of metrics, though have generally been limited to disclosure of carbon footprint for equities portfolios and some limited 'green' exposure metrics to date.

	Applicable asset classes	*Commercial Availability*	*Connection to Risk?*	*Connection to Alignment?*
Portfolio Carbon Footprint / Intensity	-Equities/Corp. bonds -Real Estate -Bespoke: Private Equity, infrastructure	**Broad**; >10 providers and free tools available	**Limited** (2dII 2015c) due to: • Backward-looking nature • Point-in-time nature • Inclusion of all GHGs rather than regulated GHGs • lack of risk-relevant variables (geography, market power, etc.)	**Limited** due to point-in time nature and lack of relevant benchmark
Avoided Emissions	-Infrastructure, -Mortgages, -Equities/Corp Bonds	**Small**; approach in its infancy for financial assets		**Limited** due to lack of relevant benchmark
Green/ Brown Exposure	-Equities/Corp. Bonds	**Broad** (segmentation); **Small** (proprietary approaches)		**Limited** due to point-in time nature and lack of relevant benchmark

Backward-looking carbon footprint
Offered by at least 12 providers
Commercially available

Summary: The carbon footprint is arguably the most prominent climate indicator – both for companies and financial institutions. The assessment is cross-sectional and relies on varying methods across asset classes (PCI 2015).

Pros: Can be used for all sectors and several asset classes (equities, corporate bonds, real estate; development in sovereign bonds and alternatives). The metrics are highly commoditized. Some providers have started integrating Scope 3 GHG emissions, at least in part (Fig 11).

Cons / Gaps: Backward-looking carbon footprint cannot directly be used for transition risk or alignment measurement. It relies on corporate disclosure or uncertain estimation models, particularly due to consolidation rules across issuers (CDP 2015). Inconsistent metric definitions exist across providers (Fig 11). It cannot be used for measuring 'green' exposure (pg 17). Coverage of several asset classes remains mostly bespoke, notably for sovereign bonds, private equity, and alternatives.

Cost: A basic listed equity footprint can be accessed through various data platforms (e.g. Bloomberg) at no extra cost or from providers for €10-20k. Corporate bond portfolios increase costs. Cross-asset footprints remain a bespoke service so costs can differ widely.

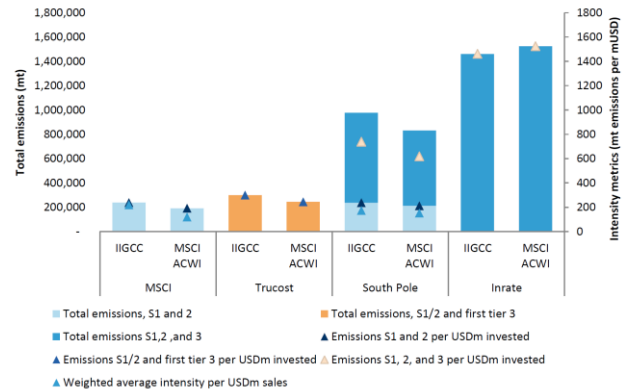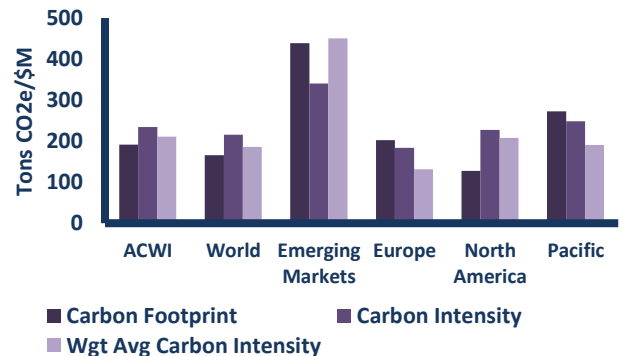**FIG 11: CARBON FOOTPRINT RESULTS (SOURCE: IIGCC 2015)**

FIG 12: CARBON METRICS ASSOCIATED WITH MSCI INDEXES (SOURCE: MSCI 2015)

Portfolio Avoided GHG Emissions
Offered by Carbone4, Ecofys
Bespoke analysis

Summary: Due to the inability of carbon footprinting to track 'green' investments, some commercial providers have developed 'avoided emissions' solutions that track GHG emissions reductions from an assumed baseline for green investments. Estimates are available for asset classes with known use of proceeds (mortgages, green bonds) and for green products in listed equities. Although functionally identical to the green metrics described on the next page, they are described separately, given their distinct use.

Pros: The method allows measuring 'green' investments with GHG emissions, creating similar units as carbon footprint approaches.

Cons / Gaps: The method requires comparison to a baseline, for which no standard exists. This also makes most analysis bespoke to the company or specific asset. This generally results in limited coverage (geography, number of companies, etc.). Unlike for carbon footprint, there is no common understanding as to what qualifies as an 'avoided emission' - investors cannot create a system of equivalence across sectors. Comparability across financial institutions is thus even lower than for carbon footprint.

Cost: Due to the bespoke nature of avoided emissions accounting for non-corporate asset classes, costs can be variable to portfolio size and complexity.

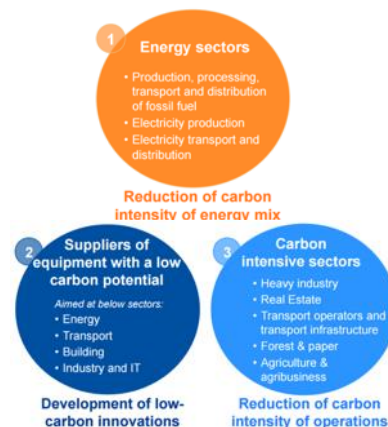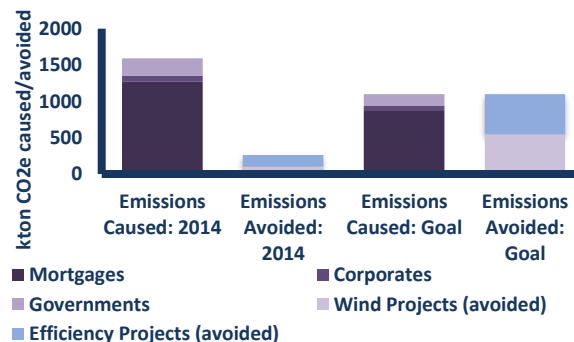**FIG 13: "HIGH STAKES" SECTORS WITH ESTIMATED AVOIDED EMISSIONS (**SOURCE: CARBONE 4 2015)

FIG 14: SNS BANK 'CARBON PROFIT AND LOSS' (SOURCE: SNS 2015)

Green/brown exposure metrics
Offered by Bloomberg, FTSE, MSCI, Trucost…
Commercially available

Summary: Green/brown exposure metrics are indicators distinguishing between climate solutions and climate problems. Such metrics measure activities like company revenues in exposure ($, ,etc.) terms using either industrial classification schemes (Fig 15) or proprietary 'green' taxonomies (Fig 16).

Pros: Given a taxonomy, tracking 'green' activities is relatively easy and can be done across nearly any asset class. Taxonomies can be used to track both current (e.g. revenues) or forward-looking metrics (e.g. R&D, capex). Data is usually of high quality as it stems from financial reporting.

Cons / Gaps: Green taxonomies are inherently normative, and many types of activities can be argued to be 'green' or not (e.g. large hydropower, nuclear, etc.). Binary distinction masks the actual impact or relative 'greenness' of different activities. Green cannot properly be consolidated across sectors / technologies.

Cost: Revenue segmentation is a common financial analysis technique and thus data is available in many standard data packages (e.g. Bloomberg, Thomson Reuters, etc.). Proprietary green share data is usually sold alongside carbon or other ESG metrics, with packages costing an estimated EUR 10,000 – 50,000.

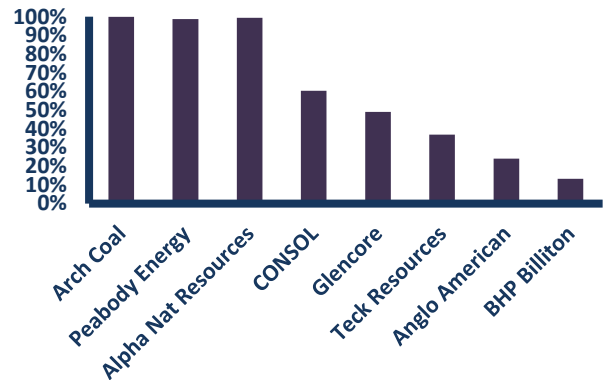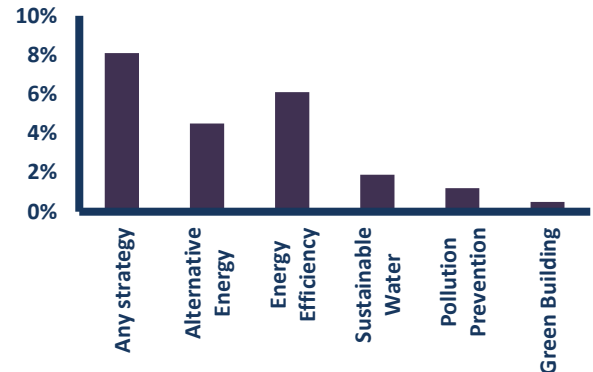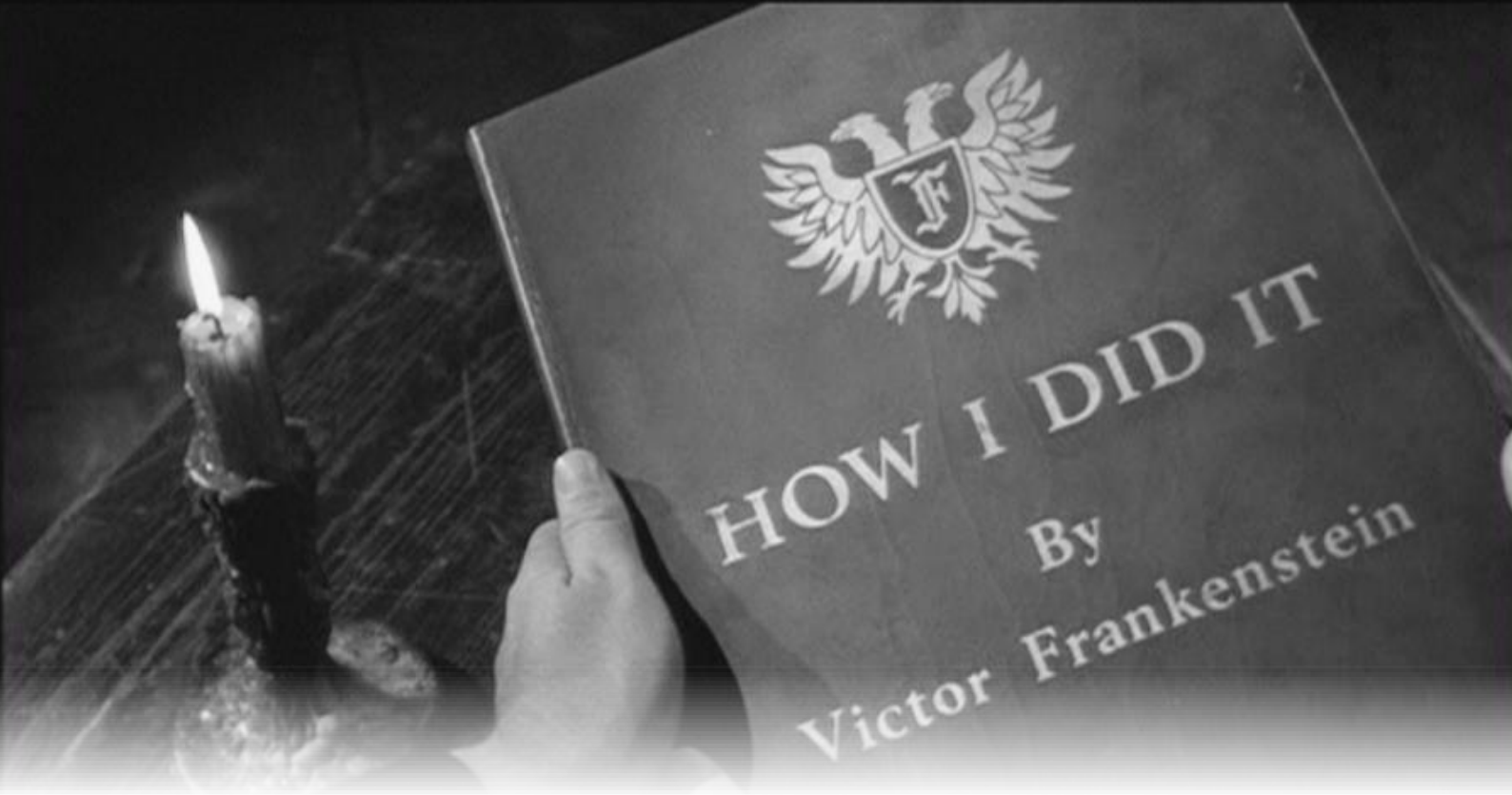**FIG 15: FRACTION OF REVENUES DERIVES FROM COAL MINING** (SOURCE: BLOOMBERG)

FIG 16: WEIGHT OF COMPANIES OFFERING 'GREEN' SOLUTIONS IN MSCI ACWI (SOURCE: MSCI 2015)

COMBINING BEST PRACTICES

CHALLENGES FOR CLIMATE DISCLOSURE

OPTIONS FOR POLICY MAKERS

Frankenstein's creation needed for meaningful reporting. Investors have to contract with different data providers & consultants to report towards different objectives, increasing search and service costs for investors.

Support market actors in identifying best practice. Guidance on best practice elevates reporting – emphasizing 'quality' over 'quantity' and reducing uncertainty, particularly relevant for small / medium-sized asset owners

Current reporting emphasis limited to basic metrics. Current voluntary reporting initiative focus on 'least common denominator' metrics that are not material nor comparable. Reporting thus remains illustrative.

Create transparency on finance alignment with climate goals. Policy support can both support meaningful reporting and act as a 'user' of reporting to track alignment of financing with the Paris Agreement and potential associated capital misallocation.

Metrics still under development. Research initiatives are under way to improve models, scenarios, data, and indicators for reporting, suggesting the reporting landscape will likely continue to evolve in the next years.

Coordinated international & national policy guidance can help reduce costs. Standards and policy guidance can support the 'commoditization' of reporting practices, reducing costs for market actors, and creating one-stop shop reporting options.

What is a Frankenstein reporting framework and why is it needed?

To our knowledge, no commercial provider can currently provide the entire package of best practices highlighted in this report. While we expect that the offer on reporting services will consolidate eventually, for now best practice requires investors to create a 'Frankenstein' report sourcing from different service providers, which increases both search and 'service' costs.

How much does a Frankenstein's creation report cost?

All in all, we estimate that given the current market offering, a small-midsize institutional investor could produce a comprehensive report (c.f. following page) assessing both portfolio-level risk and alignment as well as some limited bespoke and/or issuer level analysis for **€30,000-50,000** in external costs (assuming the investor already has a financial data terminal). These costs are obviously variable and depend strongly on the portfolio and the desired split of internal vs. external work. Policy guidance on voluntary and mandatory reporting frameworks will likely reduce reporting costs for investors by reducing search and service costs. As an example, in 2013, the cost of a basic listed equity carbon footprint was around EUR 50,000. In 2016, a basic listed equity carbon footprint is de facto free through Bloomberg terminals and available for very low cost from specialized carbon footprint providers. Policy-driven guidance (at national level and by the FSB) and voluntary initiatives are responsible for this trend and are likely to put further downward pressure on the suite of reporting options outlined in this report. Especially policy initiatives can help mobilize 'laggards' that lack capacity on how to respond to climate change issues.

What are the gaps?

For both alignment and risk, but particularly for alignment, many more options exist for assessing listed equities and corporate bonds than for other asset classes, given the richer history of ESG data associated with corporate nonfinancial disclosure. An investor with significant holdings outside the listed equity and corporate bond space will likely be more reliant on primary data collection and bespoke analysis. However, it is in the alternatives space (infrastructure, green bonds, real assets) where potential climate 'impact' of portfolio allocation decisions may be highest (PCI 2015), so investors should not neglect these asset classes.

What does the future of investor reporting hold?

Despite projected market consolidation, reducing costs will require a policy signal converging around a 'reporting standard', which could lead to service providers positioning themselves as "one-stop shops". This trend is already visible in response to the French investor disclosure law and is likely to continue as initiatives proceed elsewhere. Eventually, this process may allow investors to continuously assess their portfolio for risk and alignment through a software package or online data tool as a part of the standard services provided by platforms like Bloomberg, S&P Capital IQ, or similar financial databases.

BEST PRACTICE: TODAY'S COMPREHENSIVE 8 PAGE CLIMATE REPORT ALIGNED WITH FRENCH REPORTING REQUIREMENTS

1) **Asset allocation & Strategy**: A high level overview of the investor's strategy with respect to climate change and the asset allocation of the portfolio

2) **Portfolio Transition Risk**: An overview of the effects of a 1.5-2°C scenario on the portfolio, broken down by asset class (pg 11)

3) **Transition Risk: Equities**: A breakdown of the effects of a 1.5-2°C scenario on equities portfolio (or other at-risk asset classes; pg 12-13)

4) **Transition Risk: Bonds**: A breakdown of the effects of a 1.5-2°C scenario on credit risk of bonds portfolio (or other at-risk asset classes; pg. 12-13)

5) **Portfolio Climate Goal Alignment**: An overview of the contribution of the portfolio to climate goals (e.g. a 1.5-2°C scenario, national decarbonization plans, etc.). Currently limited to equities but expansion in progress to other asset classes (pg 6-7)

6) **Climate Goal Alignment: Sector**: Sector detail on the contribution of the portfolio to climate goals (e.g. a 1.5-2°C scenario, national decarbonization plans, etc.). Currently limited to equities and corporate bonds but expansion in progress to other asset classes (pg 6-7)

7) **Engagement Strategy and Voting Practices:** Summary of how the investor pursues risk management and/or climate goal contribution through engagement and shareholder voting.

8) **Proxy metrics for sectors/asset classes lacking alignment & risk metrics:** Carbon footprint, avoided emissions, or green/brown revenue share to provide a more complete picture of climate performance where alignment and risk metrics are currently lacking

Asset allocation & strategy — 1

Portfolio transition risk — 2

Transition risk: Equities — 3

Transition risk: Bonds — 4

Portfolio climate goal alignment — 5

Climate goal alignment: Sector — 6

Engagement strategy & Voting — 7

Proxy metrics for sectors/ asset classes lacking alignment & risk metrics — 8

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ABOUT 2° INVESTING INITIATIVE

The 2° Investing Initiative [2°ii] is a multi-stakeholder think tank working to align the financial sector with 2°C climate goals. We are the leading research organization on climate-related metrics for investors. Our research work seeks to align investment processes of financial institutions with climate goals; develop the metrics and tools to measure the climate friendliness of financial institutions; and mobilize regulatory and policy incentives to shift capital to energy transition financing. The association was founded in 2012 and has offices in Paris, London, Berlin, and New York City.

The 2° Investing Initiative currently leads a EUR 2 million research project on developing 2°C benchmarks for financial portfolios, involving Kepler-Cheuvreux, SMASH, the Frankfurt School of Finance, University of Zurich, CDP, WWF European Policy Office, WWF Germany, EY, Accenture, Beyond Ratings, and Energy Transition Advisors. 2°ii also leads a project on developing standardized stress-test scenarios and risk models in partnership with S&P Capital IQ, S&P Ratings, S&P Dow Jones Indices, Kepler-Cheuvreux, Oxford Sustainable Finance Programme, I4CE, Carbon Tracker Initiative, and the CO-Firm. 2°ii also has a number of disclosure partnerships, including with the Swiss and French Environment Ministry.

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