



# THERMAL COAL IN INVESTOR PORTFOLIOS

## RISKS AND TOOLS FOR INVESTOR STEWARDSHIP

We look into the risks of coal energy assets from an investor perspective and discuss the solutions that Northern Trust Asset Management is offering in the framework of sustainable investing strategies and wider stewardship activities. In the appendix, we summarize the government policies that have contributed to de-risking and increased adoption of renewable energy technologies.

### WHAT DOES COAL-RELATED RISK MEAN TO INVESTORS?

Coal-fired plants are responsible for more than 70% of global energy-sector emissions<sup>1</sup>. Assuming that the Paris Agreement target<sup>2</sup> is to be fulfilled, coal fired electricity generation will need to be substantially downsized.

To achieve the Below Two-Degree temperature goal of the Paris Agreement by 2050, International Energy Agency's (IEA) Sustainable Development Scenario (SDS) assumes that the power sector will have to take net GHG emissions to zero and almost completely phase-out coal generation globally by 2040 and make no further investments in new coal units.<sup>3</sup> The IEA expects coal-fired electricity generation to rise only marginally between 2020 and 2024, at less than 1% a year driven by the demand from emerging Asian countries, while coal's share of the global electricity mix will fall to 35% in 2024 from 38% in 2018.<sup>4</sup>

This trend away from coal generation is gathering momentum, with many developed economies dramatically reducing the share of coal in their energy mix. In the short run, emerging economies like China may still see their coal-fired electricity generation grow and offset the declines elsewhere to keep global production flat<sup>5</sup>. However, as renewable energy presents an increasingly economically viable substitute and carbon taxes are introduced or increased in many large economies, we see substantial risk associated with investing in coal assets.

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**ECONOMIC RISK EXPOSURES ARE SUBSTANTIAL**

We believe investors should be vigilant about increasing risk of coal exposed assets becoming stranded in the medium term, albeit the timing of such events is hard to predict. With further technological progress and enhanced policies, the risk from coal will accelerate significantly.

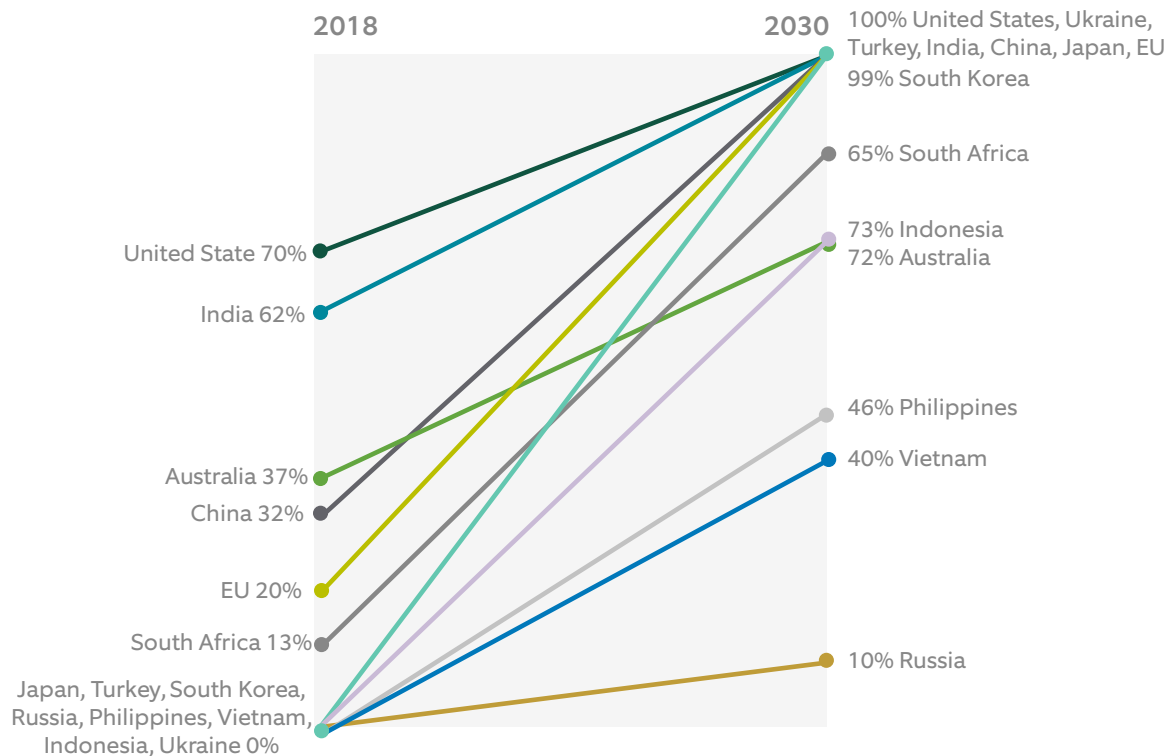
The use of direct and indirect renewable energy subsidies by many governments has resulted in substantial risk reduction of investments into utility-scale solar photovoltaics (PV) and onshore wind, and a sharp drop in costs. For many large listed electric utilities, LCOE (Levelized Cost of Electricity)<sup>6</sup> of renewable energy has become lower than the marginal cost of coal generation. CTI (Carbon Tracker Initiative), an analytical advisor to the Climate Action 100+ Initiative, estimates that nearly 100% of total global coal generation capacity will be more expensive than building new renewables energy plants by 2030. Furthermore, as much as 42% of today's publicly listed utilities' coal capacity is losing money. Further cost pressures can make 72% of the coal power plants' capacity cashflow negative by 2040. CTI estimates that investors risk as much as \$267B in 'stranded assets' in the Below 2°C scenario<sup>7</sup>.

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**EXHIBIT 1: HIGH COST COAL**

*Nearly all of total global coal generation capacity will be more expensive than building new renewables energy plants by 2030.*

**Coal Capacity with Higher Long-Run Operating Costs than Renewables**



Source: Carbon Tracker Initiative, based on country averages, See Powering Down Coal report for more details. Percentages represent percent of operating and under-construction coal capacity with higher long-run operating cost than new renewables in 2018 and 2030.

The decrease in the cost of renewables has been faster than most analysts predicted. This alongside the falling cost of gas poses a particular risk for coal plants that will be left exposed to the risk of punitive carbon taxes on an accelerated timeline as renewables become economically feasible faster than expected. However, we note that in the regulated jurisdictions, particularly in the U.S., the non-economically viable and largely depreciated plants provide utilities an opportunity to replace these plants with alternative generation sources. Xcel Energy, a large US based utility, coined the term “Steel for Fuel” highlighting its plan to replace coal plants with wind turbines. This would allow the utility to increase its asset base to earn regulated returns without burdening customers with higher electricity costs.

Despite the realistic risk of punitive carbon taxes, investor exposure to coal generation is still substantial. At the end of 2019, coal-fired electricity accounted for 26% of the overall output of large publicly listed electric utilities and multi-utilities in the MSCI World Index, and almost 19% in MSCI Emerging Markets Index<sup>9</sup>. Some companies have very high exposure; coal accounted for more than 80% of overall generation for NTPC (India), Eskom Holdings (South Africa), and PGE (Poland), and more than 50% for Australian AGL Energy and US utilities FirstEnergy, PPL, American Electric Power Company, and Vistra Energy<sup>9</sup>. We believe that a company’s progress on the road to environmental sustainability will largely define its financial performance and, therefore, its investor risks. Due to the lack of any scalable and cost effective clean coal technologies, phasing out the coal-fired generation appears to be the most viable option in our view. As a result, planning retirement schedules for coal plants should become an essential part of a company’s strategy to maintain competitiveness and fulfill its carbon reduction goals.

Despite the economic rationale, we believe that various hindrances to coal replacement may arise from economic ties with legacy establishments, dependence of large communities on existing coal facilities, opposition from powerful coal lobbyists, and strong unions. Shutting down legacy coal plants leads to thousands of job losses that adversely affect the local communities, making it a politically sensitive decision. Additionally, utilities have limited capital to replace marginally profitable or unprofitable plants because half of capex is reserved for maintenance. Such challenges may lead to cost escalation and delays in shutting down coal plants prior to their planned retirement. Shutdowns of plants not only require company efforts, but often substantial administrative and financial commitments from governments, adding further complexity to the process. We discuss Germany as one of the case studies for such commitments in the appendix to this report.

We note that renewables compete with other low carbon technologies such as nuclear and natural gas powered plants. However, the building of new nuclear plants has become quite rare and we would not be surprised if no new nuclear plants are built in the U.S. or other developed economies due to safety concerns and the project risk of undertaking a multi-year construction process that usually takes longer than planned. Unless the renewable energy can be used in combination with cost effective storage, we believe that natural gas may remain a viable option for at least next two decades. This is particularly true in the regions that have limited wind and solar resources, and an abundant and cheap supply of natural gas. However, building new interstate gas pipelines is becoming very difficult due to environmental issues. This limits the scope of building new plants where there is not ready supply of natural gas, rendering renewables a more viable option. Other technologies such as hydrogen are still in their infancy and may take years or even decades to mature.

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As investors we are concerned that coal-exposed companies are not taking timely steps to maximize their value and reduce risks. We believe that better disclosure is needed about considerations that are put into the process, including clearer targets, efforts to negotiate the transition with governments, and proper governance processes.

**STEWARDSHIP OF COAL-EXPOSED COMPANIES IS KEY**

Northern Trust Asset Management is proactively working on minimizing the risks associated with coal exposure in our portfolios. In August 2019, following consultation with our clients, we introduced thermal coal screens into the methodology of our Custom ESG equity index funds and other sustainable investing strategies. In addition to the screens that already exist such as tobacco, weapons and breaches of the UN Global Compact, we set the exclusion threshold for coal mining companies at 5% of total revenues and for coal-fired generation at 30% of revenues. This affected 21 names in the universe in our World Custom ESG Index fund and 35 names in the universe of the Emerging Markets Custom ESG Index fund, with the replaced weights being approximately 0.74% and 1.14%, respectively.

While this initiative had a limited impact on the financial risk-return profile of these indices, with additional tracking error in the range of two basis points, the decarbonisation effect was substantial. The coal-free portfolio of the Emerging Markets Custom ESG Index was 18% less carbon intensive (by Scope 1 and 2) and 65% less exposed to potential carbon emissions than the ESG index prior to the change. For the MSCI World, the reduction was approximately 10% on both parameters<sup>10</sup>.

While divesting from thermal coal is an effective sustainable investing strategy, it may be seen as only one tool. A more effective approach appropriate for all portfolios exposed to coal, including plain vanilla index ones, is to engage in a dialogue with companies' management and directors about their climate risk and strategies to phase-out coal. We see this as a key investor responsibility.

In addition to our efforts of engaging specifically with companies that have substantial coal-exposures, we have an agreement with Equity Ownership Services (EOS) at Federated Hermes, an organization specialized in stewardship, to engage with portfolio companies on behalf of our EMEA pooled funds, on the basis of our engagement policy. In 2019, EOS engaged with 285 companies in NT EMEA pooled fund portfolios on the subject of climate change, including 29 utilities and 37 energy companies; substantial progress has been achieved with 32 companies.

We collaborate with other investors through organizations like the Institutional Investor Group on Climate change (IIGCC) and the Climate Action 100+ Initiative. Climate Action 100+ currently involves over 500 investors with more than \$47 trillion of assets under management and coordinates engagements with 161 high-carbon companies via focused and dedicated investors groups. Northern Trust Asset Management is a co-lead investor in three companies globally, two of which, Glencore and National Grid, have direct or indirect exposure to thermal coal. We are also members of twelve investor engagement groups, six of which, BHP Group, CEZ, PGE, AGL Energy, Origin Energy and South 32, have coal exposure.

We use our proxy voting power to enforce our risk-related concerns, particularly when stakeholder engagement has not delivered the desired result. According to our Proxy Voting Guidelines, Northern Trust generally supports proposals requesting increased disclosure on the environmental impact of a company's operations, products, and initiatives to curtail the risks of negative impacts. We

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vote case by case on proposals requesting adoption of GHG reduction goals from products and operations. In 2019, we supported 100% of proposals to publish climate scenario analysis and those related to renewable energy and energy efficiency. For example, in 2019, Northern Trust voted for the proposal to produce reporting on coal risks at Duke Energy.

### **OUR ENGAGEMENT OBJECTIVES INCLUDE PLANS FOR PHASING OUT COAL**

We built our objectives for engagement with coal-exposed companies on the basis of certain frameworks such as the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD) published in July 2017, Public Expectations of Climate Action 100+ Initiative, and the Oxford Martin Principles for Climate-Conscious Investment<sup>11</sup>. We expect companies to commit to net zero emissions for supply chains and products sold by a 2050 or sooner based on a clear transition plan and profitable net zero business model. We want them to formulate quantitative short, medium, and long-term carbon reduction targets and disclose their progress.

We want to see evidence of a strengthened governance system with strategic responsibility for climate risks assigned to the board or its committee. Management structure should assume accountability for climate risk management and management incentives should incorporate KPIs (Key Performance Indicators) linked to carbon reduction targets.

We believe that all companies should perform analysis of their specific transition risks under credible climate scenarios, including the IEA's SDS and the Beyond 2°C Scenario. Companies should disclose the assumptions they have made under various climate scenarios; i.e., carbon budgets and future carbon price.

Coal-fired electric utilities need to formulate a comprehensive strategy to replace coal, disclosing the retirement schedule for coal plants, MAC (marginal abatement costs) of specific technologies, and green capex plan. We are proponents of power utilities disclosing the EBITDA of their individual coal units and the methodology used to estimate the profitability of each unit over time. We encourage them to disclose the year when the LRM (Long-Run Maintenance Costs) of every individual coal unit is forecasted to become higher than the LCOE of utility-scale solar PV or wind plants.

When we engage with companies, we want to see clear progress, which we measure against four key milestones<sup>12</sup>. If we don't see progress within a year of our engagement, we will evaluate voting against the head of the relevant board committee or the board chairman to record our dissatisfaction with the company's policies.

As part of the Climate Action 100+ Initiative, we also engage with companies that have indirect exposure to thermal coal, such as electric grids with upstream exposure and coal miners with downstream use-phase exposure. We encourage them to disclose risks associated with such indirect emissions under plausible climate scenarios, carbon reduction targets, and capex plans. An example of our successful collaborative engagements is National Grid, which has set a net-zero emissions target by 2025 for its UK electricity system (ESO) and for its own emissions across the group (Scope 1 and 2) by 2050. However, it is yet to disclose its Scope 3 reduction targets.

We work with mining companies such as Glencore and BHP Group by urging them to 'manage decline' of their thermal coal mining and ensure their capital expenditure and investments are aligned with the Paris Agreement's goals.

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Positively, as a result of such engagements, Glencore has come up with a projection that their products-related (Scope 3) carbon emissions will decline by 30% by 2035. BHP has committed to Net Zero carbon on its Scope 1 and 2 emissions and has come up with important initiatives to reduce its Scope 3 footprint.

We also believe it is important to engage with companies in the manufacturing, consumer, and tech sectors to ensure progress in managing their electricity-related CO2 emissions (Scope 2) by switching to renewable energy providers. As a result of the coordinated stewardship efforts of numerous investors and investor groups, 241 companies from across the globe become members of RE100 Initiative and making a commitment to go '100% renewable'<sup>13</sup>.

In the financial sector, we see risks emanating from investment, financing, and underwriting thermal coal related activities. We have engaged with several banks regarding their plans to restrict exposure to coal companies and projects. For example, our collaborative engagement with Barclays focused on addressing the ambiguity in the bank's policy regarding financing the needs of fossil fuel and energy sectors. A group of shareholders filed a motion at the 2020 AGM asking the bank to phase out financing for fossil fuels and utility companies that are not aligned with the Paris Climate Agreement goals. As a result, Barclays made a counter proposal, pledging to become a net-zero emission banks by 2050 and superseding the demands of the investor-backed proposal. Northern Trust supported both proposals to signal our views on the need for setting clear targets and thresholds for financing "dirty" activities. We also supported similar motions at QBE Insurance in Australia and Mizuho Financial Group in Japan where we saw dangerous exposures to coal and other fossil fuels.

## CONCLUSIONS

Coal-fired electric utilities and coal mining companies are exposed to economic risks due to dramatic shifts in political and economic trends. The imposition of carbon taxes and emissions trading schemes, coupled with the sharply falling cost of green energy, have already made coal a more costly energy source for electric utilities and prompted a decrease in global demand for coal. Increased competitiveness of the renewables sector has accelerated the decline in new coal plant construction and early retirement of existing plants in the U.S. and Europe. These same trends can decelerate the current growth of coal in China, India and other developing countries in Southeast Asia.

Many utilities have started retiring their coal capacity. Northern Trust believes that companies will be able to better manage their risks associated with the transition to low carbon energy when they are actively planning to replace coal with greener and more economical sources of energy.

Northern Trust Asset Management has developed sustainable investing strategies that limit exposures to thermal coal. As one of the leading investor supporters of the Climate Action 100+ Initiative and the recommendations of the TCFD, we are engaging with coal-exposed companies on time-bound and realistic objectives. Our objectives include increased disclosure of strategies that reduce companies' exposure to thermal coal as a pathway to achieving net carbon emissions. We are prepared to take voting action on companies where we see a lack of progress.

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## APPENDIX GOVERNMENTS' CLIMATE AMBITION HAS LARGELY LED TO WEAKENING ECONOMICS OF COAL ENERGY

Climate ambitions of governments globally have largely led to weakening the economics of coal energy. On the way to fulfill legally binding individual countries' commitments (Nationally Determined Contributions or NDCs) in line with the international climate action agreement, more than 40 national governments and more than 30 sub-national jurisdictions worldwide have adopted some form of carbon tax or cap-and-trade program<sup>14</sup>. This has already made coal a more costly energy source for electric utilities in these parts of the world and led to decreasing overall demand for coal in developed markets.

Policies in Europe<sup>15</sup> have put coal under severe economic pressure and have been instrumental in pushing coal plants to halt production. Coupled with increasing energy efficiency, coal generation in Europe reduced by 30% in 2018 compared to 2012 levels, roughly half replaced by wind and solar, and half by natural gas. Despite the COVID-related crisis, prices on the EU carbon market established in 2005 have risen to around €28 per tonne of CO<sub>2</sub> at the end of August 2020 from around €15 in 2018. However, it was the weakening of gas prices that drove a particularly large switch out of coal in 2019; coal generation in the EU collapsed by 24%<sup>16</sup>. Compared to the global average of 38%, coal ended up as 2% of the electricity mix in Ireland, France, and the UK, and 6% in Spain and Italy in the first half of 2019<sup>17</sup>.

The EU Green Deal puts an emphasis on phasing out coal: "A power sector must be developed that is based largely on renewable sources, complemented by the rapid phasing out of coal and decarbonising gas"<sup>18</sup>. Seven European countries, the UK, Portugal, Spain, Italy, France, Austria, and Finland, have committed to closing down coal capacity by the mid-2020s. Netherlands, Denmark and Portugal have committed to phase out coal by 2030<sup>19</sup>.

The new [2030 Climate Target Plan](#) presented by the European Commission in September 2020 sets out how the EU will reduce greenhouse gas emissions by at least 55% by 2030 from 1990 levels. It states that large emissions reductions have come from closing coal power stations and predicts that by 2030, coal consumption (including both thermal and metal coal) would be reduced by more than 70% compared to 2015<sup>20</sup>.

The UK has the most far-reaching policies. Its Climate Change Act of 2008 introduced carbon budgets that were in line with a dramatic greenhouse gas emissions reduction target. After the adoption of carbon tax in 2013, coal-fired electricity plummeted by 93% from 13.1 TWh in to 0.97 TWh in September 2019<sup>21</sup>. In 2019, the UK managed to switch off all its coal plants for two weeks, a first since the industrial revolution began.

Germany is still the largest coal-fired power generator in Europe with 36% of the EU coal demand, but it has the largest wind and solar capacity installed and has seen the biggest absolute fall in coal based generation in 2019. Under a new German law legislated in 2019, the government is providing assistance in planning the retirement of coal plants and offering compensation to the coal power plant operators to accelerate the decommissioning of old plants.

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In contrast to the developed European economies, emerging European economies are making slower progress towards renewables and remain largely reliant on coal; Poland has 80% of coal in its energy mix, Bulgaria has 50%, and the Czech Republic as 40%<sup>22</sup>. However, we note that presently almost 60% of Polish energy infrastructure is over 30 years old and, for the government's plans to reduce emissions as per the Paris Agreement to materialize, half of coal-fired power plants will need to be shut down by 2035. In the Czech Republic, a multi-stakeholder Coal Commission's has been set by the government with the objective to develop future plans to move away from coal for electricity generation.

Similar trends are seen in other geographies. Canada and some states in the U.S., California, Connecticut, New York, Oregon and Washington, have announced their intention to move away from coal combustion by 2025. The majority of U.S. states have adopted renewable electricity mandates that dictate minimum thresholds of power from green sources. Due to government support and the strengthened economics of wind and solar, coal-fired capacity in the U.S. has declined by double-digit percentages annually in recent years, with more than 20 coal plants shutting down each year on average<sup>23</sup>.

Similarly in Australia, record-high renewables growth is transforming the electricity landscape, pushing out coal plants and lowering prices despite the fact that there are no comprehensive government carbon reduction policies.

Still, 15 members of the G20, including China and India, have no binding coal phase-out plan. China, India, Indonesia, and Vietnam coal fleets will grow by 22% from 2018 levels if all 446 GW of planned or approved coal plants are built in the next two years<sup>24</sup>.

China is the world's largest coal producer, consumer, and importer, with domestic coal production and cheap seaborne coal imports growing as the government eases some import restrictions. China has more coal fired power plants under construction than the rest of the world combined at 148 GW, or 48.1% of the global capacity under construction<sup>25</sup>. That said, IEA forecasts flattening of coal growth in China, and expects China's energy policy decisions for its next five-year plan could lead to significant changes. Fossil fuels face rising public opposition due to concerns over air pollution and the worsening of climate. Approvals for new coal plants are slowing year over year. New coal investment is banned in 21 out of total 38 regions in China<sup>26</sup>. Moreover, 2019 was the first year that saw contracts for wind and solar plants that generate power at the same price as coal power plants, putting China on a path to 'grid parity' for renewable energy.

India, which nearly surpassed the U.S. in coal power generation by 2030, is on track to see its coal power output fall for the first time in three decades. Growth in renewables has outpaced thermal capacity. The National Clean Air Programme released in 2019 aims to reduce carbon emissions by shutting down old coal power plants. It remains to be seen whether the political environment will be strong enough to ensure implementation.

Globally, 260 GW of coal power, representing 13% of world capacity, predominantly located in the US and Europe, is set to retire before 2030<sup>27</sup>. Prior to the UN Climate Conference COP 26, which has been postponed to 2021 from 2020 due to COVID-19, the governments are supposed to review their NDC commitments, which should prompt more effective carbon regulations and lead to further decline in coal demand.

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In contrast to the developed European economies, emerging European economies are making slower progress towards renewables and remain largely reliant on coal



### FOOTNOTES

<sup>1</sup>Vivien Foster, Daron Bedrosyan. Understanding CO2 emissions from the global energy sector. 2014

<sup>2</sup>The Paris Agreement's long-term temperature goal is to keep the increase in global average temperature to well below 2 °C above pre-industrial levels; and to pursue efforts to limit the increase to 1.5 °C, recognizing that this would substantially reduce the risks and impacts of climate change.

<sup>3</sup>IEA World Energy Outlook (WEO) 2019

<sup>4</sup>IEA. Coal 2019. Analysis and Forecast 2024

<sup>5</sup>IEA. Coal Report 2019

<sup>6</sup>LCOE represents lifetime total fixed and variable costs of a power generation plant divided by total power production.

<sup>7</sup>CTI. Powering Down Coal. 2018. A positive stranded asset risk value means, based on existing market structures, investors and companies could lose this value in the below 2°C scenario as coal capacity becomes uneconomical to utilize. Profitability is defined as revenues minus long-run operating costs. Northern Trust believes that the estimates are prior to the impact of the government subsidies and capacity payments.

<sup>8</sup>MSCI ESG Manager. December 20, 2019

<sup>9</sup>CTI. Making It Mainstream. 2019

<sup>10</sup>Northern Trust data, August 2019

<sup>11</sup>Richard J. Millar, Cameron Hepburn, John Beddington, Myles R. Allen. Principles to guide investment towards a stable climate. January 2018

<sup>12</sup>Milestone 1 is when we articulate our objectives to the company; Milestone 2 is when the company admits they have understood them; Milestone 3 is when the company has set the plan to address the issues; and Milestone 4 is when the relevant changes have been implemented.

<sup>13</sup><http://www.there100.org/companies>. The list includes tech and FMCG bellwethers such as Apple, Microsoft,

<sup>14</sup>[https://carbonpricingdashboard.worldbank.org/map\\_data](https://carbonpricingdashboard.worldbank.org/map_data)

<sup>15</sup>These include the Large Combustion Plant Directive (LCPD) of 1988 (re-issued in 2001), the introduction in 2005 of The EU Emissions Trading System (ETS), and the Industrial Emissions Directive (IED) that came into force in 2011, all applying the 'polluter pays' approach. The EU Renewable Energy Directive of 2009 established required the EU to fulfil at least 20% of its total energy needs with renewables by 2020. The EU has put in place legislation to reduce emissions by at least 40% by 2030.

<sup>16</sup><https://www.euractiv.com/section/electricity/news/power-shift-eu-coal-output-falls-24-in-2019/>

<sup>17</sup><https://www.euractiv.com/section/emissions-trading-scheme/news/european-coal-power-output-saw-unprecedented-drop-in-2019/>

<sup>18</sup>European Green Deal Communication. Dec 2019. [https://ec.europa.eu/info/sites/info/files/european-green-deal-communication\\_en.pdf](https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf)

<sup>19</sup>Bloomberg. Coal Demand at Risk as Emissions Targeted: 2020 Policy Outlook. Jan 02, 2020

<sup>20</sup>Stepping up Europe's 2030 climate ambition. Communication from The Commission to The European Parliament, The Council, The European Economic and Social Committee and The Committee of The Regions. September 2020

<sup>21</sup>University College London. British carbon tax leads to 93% drop in coal-fired electricity. Jan 27, 2020

<sup>22</sup><https://euractiv.cz/section/all/news/poland-and-the-czech-republic-how-to-renewable-the-energy-mix/> and [https://energyfutureslab.blog/2019/12/12/bulgaria-from-fossil-fuel-hostage-to-clean-energy-champion/?mc\\_cid=cb7a9becb3&mc\\_eid=3a8752acef](https://energyfutureslab.blog/2019/12/12/bulgaria-from-fossil-fuel-hostage-to-clean-energy-champion/?mc_cid=cb7a9becb3&mc_eid=3a8752acef)

<sup>23</sup>UNEP. Emissions Gap report 2019

<sup>24</sup>Bloomberg Intelligence. ESG: How much coal capacity do we need to cut? Jan 22, 2020

<sup>25</sup>China ramps up coal power in face of emissions efforts Financial Times (FT), Nov 21, 2019

<sup>26</sup>UNEP Emissions GAP report 2019

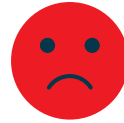
<sup>27</sup>Bloomberg Intelligence. ESG: How much coal capacity do we need to cut? Jan 22, 2020



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