

# TCFD REPORT 2021

*Navigating climate-  
related financial  
risks and  
opportunities*

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# FOREWORD

Climate change represents perhaps the most defining challenge of our times.

The sixth assessment report issued by the Intergovernmental Panel on Climate Change ('IPCC') Working Group is a 'code red to humanity'. The unprecedented levels of greenhouse gas emissions and deforestation show irreversible effects on our planet, with global warming affecting every region in the world.

We all must act decisively today to limit a global temperature rise to 1.5 °C above pre-industrial levels. More than ever, we need to invest responsibly and contribute to a sustainable transition towards Net Zero.

Capital Dynamics has a long-standing commitment to responsible investment. Our strong expertise in Clean Energy investments positions us to play a leadership role in the global energy transition. All of Capital Dynamics' business lines integrate responsible investment ('RI') and material environmental, social, and governance ('ESG') factors in the investment process. We consider ESG attributes as an important driver for tail risk reduction and opportunity for value creation in our investments. Therefore, our investment appraisal, due diligence and monitoring process takes into account a comprehensive set of ESG attributes and follows an ESG Alert process to respond appropriately to risks in our underlying investments and supply chains.

As a private market investor, we are acutely aware of our responsibility to allocate capital in line with the goals of the Paris Agreement. This is why Capital Dynamics is a Co-Lead of the Private Equity Working Group for the "Paris Aligned Investment Initiative" developed by the Institutional Investors Group on Climate Change ('IIGCC'). In collaboration with experts and members of the IIGCC, the Working Group has steered the project to provide the foundation for identifying recommended methodologies and approaches for the Net Zero implementation for Private Equity.

As we are working towards the implementation of our own Net Zero action plan to achieve both operational and portfolio Net Zero in line with the latest scientific guidance, it is becoming increasingly clear to us that our goals of delivering strong risk-adjusted returns to our clients and achieving broader environmental and social goals cannot be disintermediated. The best performing investments will be those that align with achieving positive results for a broader set of constituents.

With these dual objectives in mind, we remain resolute in our commitment to taking purposeful action on climate change today for a better tomorrow.

## AUTHORS

To obtain additional information or to share your views, please contact the authors of the report or visit our website [www.capdyn.com](http://www.capdyn.com).



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# ABOUT US

Capital Dynamics is an independent asset manager, one of the earliest signatories to the Principles of Responsible Investment, and has a strong track record of delivering attractive returns with a deep focus and commitment to ESG considerations. We operate across the globe in 14 offices and offer tailored solutions for our clients in Private Equity, Private Credit and Clean Energy.

## CAPITAL DYNAMICS BY THE NUMBERS

- Roots go back to 1988
- More than USD 13 bn in AUM
- 1500+ Clients Worldwide
- 14 Offices Worldwide
- 160 Professionals
- 60 Investment Professionals

## 3 CORE STRATEGIES

PRIVATE EQUITY

PRIVATE CREDIT

CLEAN ENERGY

As a responsible investor, Capital Dynamics is firmly committed to investing in managers, companies and projects that align with our core ESG values. All investment decisions at the firm are guided by our responsible investment policy based on four foundational principles:

- Principle 1** | Responsible Investment (RI) leads to **enhanced long-term financial returns** for our investors
- Principle 2** | The Capital Dynamics investment platform, across all strategies, is required to follow a rigorous approach to ESG investment diligence and actively re-underwrite our rating of existing investments
- Principle 3** | The data identified through our ESG investment diligence must be **tracked and analyzed** during the holding period to continually improve our RI process across each of our investment strategies
- Principle 4** | Capital Dynamics understands the importance of its role as **a corporate citizen and prioritizes its commitment to the local communities** in which it operates and invests

# OUR COMMITMENT

Capital Dynamics is committed to drive positive change together with asset owners and General Partners. We take responsibility for driving our own actions and we hold ourselves accountable for the impact we make. Throughout 2021, our firm has continuously built out internal ESG resources and capabilities.

In addition, at Capital Dynamics, our research and data collection efforts confirm that a strong approach to responsible investment has the potential to enhance long-term financial returns for our investors. We are committed to applying our core ESG values as part of our fiduciary duty, which helps us in selecting attractive investment opportunities.

The spectrum of ESG investment is broad and multifaceted. Traditional investment approaches often disregard ESG factors in the investment process, focusing sometimes shortsightedly on financial considerations. This method, however, neglects the potential financial impact ESG attributes can have on asset values, for example, the financial gains and losses emerging from climate change. By contrast, philanthropic endeavors may be more concerned with delivering on non-performance related goals.

At Capital Dynamics, our data suggests that strong ESG risk underwriting and value creation result in better and more sustainable investments from a return perspective over time. It is founded in the belief that superior financial returns may be achieved by applying a rigorous ESG screening throughout the investment lifecycle. A growing body of evidence, including our own proprietary research, suggests that good ESG underwriting enhances investment performance in private markets.



A photograph of a sailboat on the ocean, split vertically. The left half shows the white hull and mast of the boat, while the right half shows the blue sea and a clear sky. The word "GOVERNANCE" is written in large, bold, red capital letters across the center of the image.

# GOVERNANCE

# GOVERNANCE

This section provides detail on the following recommended TCFD disclosures:

- Describes the board's oversight of climate-related risks and opportunities
- Describes management's role in assessing and managing climate-related risks and opportunities

Capital Dynamics' Responsible Investment Committee (RIC), led by the Head of Product Development & Strategy, is in charge of reviewing and approving our climate-related direction and objectives, including goals and targets to support climate change action.

The RIC consists of Executive Board members and senior leadership representation from each business line and sets the firm's Responsible Investment Policy. The committee provides leadership on our ESG initiatives, identifies Sustainability-related opportunities and manages RI risks as part of the response protocol. The RIC also sets the organization's climate-related strategy, including defining our Net Zero commitments, and monitoring progress towards our goals.

The RIC also assumes responsibility for our Prohibited Investments List, which aligns investment opportunities with our firm's Responsible Investment ethos. This includes regular assessments of present and evolving ESG risks and opportunities.

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*At Capital Dynamics, we recognize that our commitment to and targeted goals for ESG must constantly evolve. What will never change is our fundamental belief that good ESG disciplines have the potential to enhance long-term financial returns for our clients. In achieving these enhanced returns, as our mission evolves, we also recognize that this ambition ties directly to ensuring that our investments deliver across a broader set of constituents and impacts. With this in mind, we believe good ESG practices and investments must also include identifying an inclusive pathway to Net Zero across both environmental and social impacts.*

*Bryn Gostin*

*Managing Director  
Head of Product Development  
& Strategy*



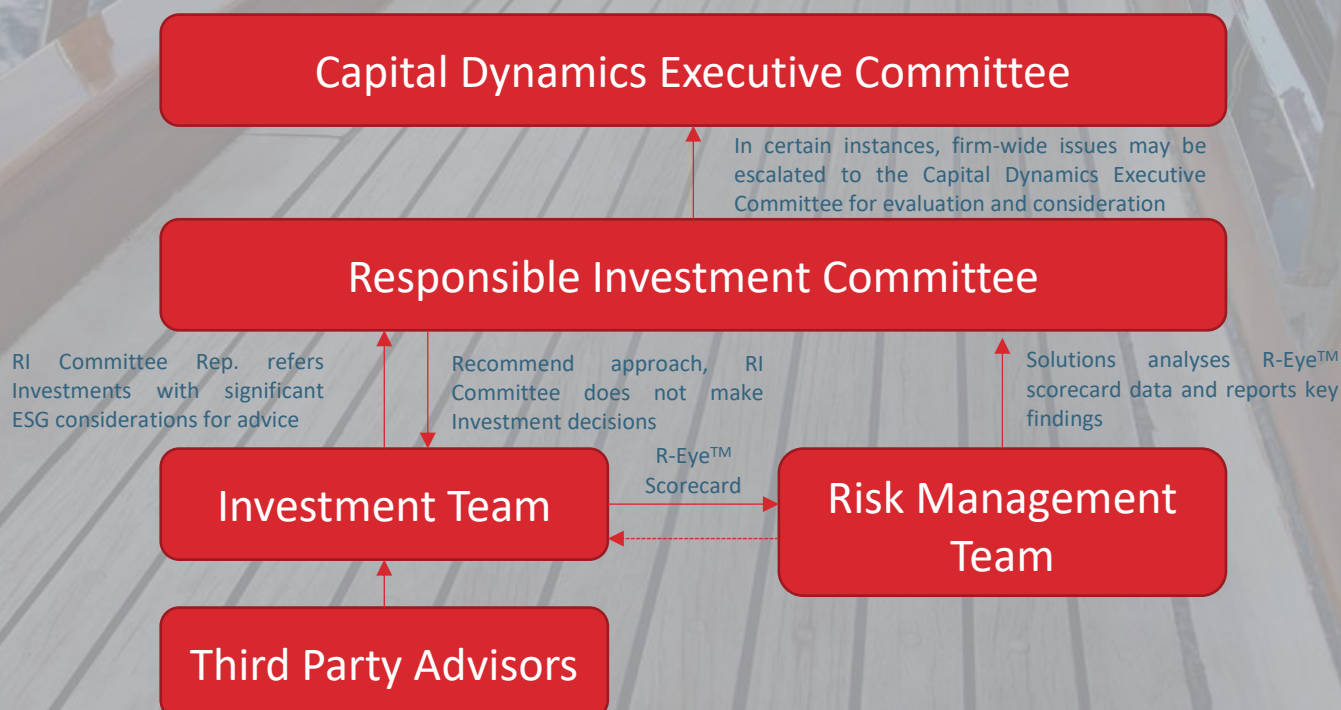
For more details on our Responsible Investment process and ESG Alert protocol, please refer to our Responsible Investment Policy available on our webpage [here](#).

Capital Dynamics is committed to taking a leadership role in the advancement of efforts to identify, assess and manage climate-related financial risks and opportunities across our business lines.

In 2021, we began implementing climate scenario analysis in line with the IPCC sixth assessment report 'AR 6', to review and assess our business resilience under a low emissions pathway (1.5 °C) and a high emissions pathway (4 °C). We use the results of the analysis to make more informed investment decisions. Going forward, we plan to include an annual review of our investment holdings against climate related financial risks and opportunities.

We plan to roll out the process for 2022 in recognition of the importance of climate-related risks and opportunities across our business lines. This allows us to do our part in the fight against adverse effects of unprecedented levels of greenhouse gas emissions while acting in the best interest of our clients.

## ESG ALERT RESPONSE PROTOCOL







# STRATEGY

# STRATEGY

This section provides detail on the following recommended TCFD disclosures:

- Describes the climate-related risks and opportunities the organization has identified over the short, medium, and long term
- Describes the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning
- Describes the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Climate change signifies financially material risks and opportunities for businesses and represents an upside and downside risk multiplier. Ensuring long-term viability of our Responsible Investment strategies to serve our clients in their best interest requires thorough understanding of climate impacts across different climate pathways. Our approach empowers clients to navigate the rapidly evolving transition towards a low carbon economy and make better-informed investment decisions.

We assess climate-related financial risks and opportunities in terms of physical climate and transition risks, and climate opportunities. For this purpose, we take into account impact, likelihood and materiality to our resilience.

## CLIMATE RISKS

Climate-related financial risks emerge from the physical effects of climate change, and from the drastic intervention performed to adapt to climate change, or mitigate the most significant adverse effects of global warming. The former risk type is known as 'physical climate risks' and the latter is commonly referred to as 'climate transition risks'.

### PHYSICAL RISKS

Risks related to physical impacts of climate change, include:



**Acute:** Event-driven risks, such as increased severity of extreme weather events, including cyclones, hurricanes and floods



**Chronic:** Longer-term shifts in climate patterns, e.g. rising global temperatures, causing rises in sea levels and chronic heat waves

### TRANSITION RISKS

Risks related to the transition towards a lower carbon economy:



**Policy and Litigation:** includes policy actions to lower adverse impacts of climate change and advance climate solutions



**Technology:** includes innovation to support the transition towards a low carbon economy



**Market:** includes shifts in supply and demand as a result of the increased consideration of climate-related risks and opportunities



**Reputation:** includes heightened reputational risks for businesses failing to address changing client demands



The transition towards a lower carbon economy represents attractive financial opportunities resulting from climate change mitigation and climate change adaptation proceedings. This is referred to as 'climate-related opportunities'.

Sources of financial opportunities include the following:



**Resource efficiency:** direct cost savings from sustainable efficiency measures



**Energy source:** transition to clean energy sources, such as wind and solar PV electricity generation



**Products and services:** increased demand for green financial products



**Markets:** increased diversification through access into new markets and financing new clean energy infrastructure projects



**Resilience:** ability to respond to climate-related risks, improve efficiency, build resilience across supply chains and develop new products

Source: based on Recommendations of the Taskforce on Climate-related Financial Disclosures

## SCENARIO ANALYSIS

Capital Dynamics utilizes a low emissions scenario in accordance with limiting global temperature rise to 1.5°C, and a high emissions scenario where temperatures rise 4°C from pre-industrial levels. The foundation of our scenario analysis is the latest scientific findings published by the IPCC's **AR6 Climate Change 2021: The Physical Science Basis**.

Scenario analysis allows us to navigate the relationship between higher global temperature outcomes - leading to higher levels of physical risks to our assets and more severe disruption in supply chains - versus the lower temperature risk outcome, achieved from drastic policy, market and consumer behavioral intervention, which imply greater levels of transition risks in our journey towards a low carbon economy.

Climate change and the necessary adaptations in our economy also represent climate-related financial opportunities. For example, through the adoption of clean energy sources, enhancing resilience across supply chains and offering climate-friendly investment opportunities to accelerate capital allocation to sustainable economic activities.

The building block for our scenario analysis is the identification of our own exposure in terms of geography, sectors, markets and stakeholders. We then pinpoint applicable climate hazards and transition risks to determine financially material risks and opportunities to our business model.


Our rating system for material climate-related risks and opportunities contemplates the likelihood of risk occurrence in the short-, medium- and long-term, and estimates the severity onto cash inflows and outflows, and our assets and liabilities.

RATING SYSTEM	Low	Medium	High	Very high
Likelihood				
Financial Impact				

Below is a summary of key findings of our analysis. The asset-level breakdown of climate hazard exposures can be found in the Appendix of this report.



# CLIMATE RISKS

Climate Risk	Risk Description	Potential Financial Impact	Likelihood	Mitigation
Policy Risk	Enhanced regulatory disclosure obligations increase costs for data collection of climate-related KPIs and reporting			Capital Dynamics has identified regulatory developments in ESG regimes and conducted impact assessments. In preparation for EU and UK regulation, the firm is in process of rolling out enhanced data gathering processes
	Increased carbon emissions pricing policies increase operating costs of portfolio companies, e.g. for firms operating in the manufacturing sector			Capital Dynamics' Private Equity Co-Investment team seeks to utilize its influence over portfolio companies to enhance Sustainability performance, including measuring emissions, setting emission reduction targets and tracking progress towards the targets to mitigate environmental and financial risks
Transition Risks	Demand and supply for different forms of energy sources, including renewable energy, represent long-term volatility and potential for reduced investment value			Capital Dynamics has limited exposure to more traditional carbon-intensive energy investments and generally takes a skeptical view with respect to this kind of exposure. Further, CD has a well-established clean energy business that is well positioned to capitalize on the significant market opportunity from the rise in demand for renewables
Market Risk	Increased shifts in client preferences towards sustainable investments reduce revenue from financial products with lower ESG ambitions			Our firm deploys strong Responsible Investment underwriting across all investment strategies. In 2021, the firm categorized certain private equity funds subject to SFDR as Article 8 ('ESG promotion') and the clean energy funds as Article 9 ('Sustainable investment'). We expect to continue to advance our ESG leadership in forthcoming financial offerings and are currently co-leading the IIGCC Private Equity Working Group for the Net Zero Implementation for Paris-aligned investment in Private Equity

LEGEND

Low



Medium



High



Very high



Reputation	Increased stakeholder demand for climate-related impact disclosures increase costs for carbon accounting measures and tools			Capital Dynamics is acutely aware of our responsibility towards our investors and asset owners to manage investments responsibly. This includes our obligation to make better-informed decisions by considering climate-related risks and opportunities with our proprietary R-Eye™ rating system. As carbon emission data will become increasingly available, Capital Dynamics will aim to disclose its direct and indirect GHG emissions, i.e. scope 1, 2 and material scope 3 emissions
	Increased severity of extreme weather events, such as hailstorms, severe storms and flood cause physical damage to assets and can lead to early asset impairment (for example of solar PV panels and wind turbines). The severe weather conditions can lead to operational disruption and increased operational costs for repairs and insurance and supply chain disruption			Increased risk of more frequent severe weather events in the geographic locations of our renewable energy assets have to be accepted and partly mitigated by sourcing high quality equipment exhibiting long-lasting durability for our PV solar and wind turbines. We also seek and prefer to use materials which are recycled or otherwise sustainably sourced. In addition, we diversify our asset & portfolio company locations to mitigate extreme weather events
Acute	UK wind patterns are predicted to slow down in the high emissions scenario. Changes in wind patterns and speed affect energy generation output.			Our clean energy investment team conducts thorough climate analysis as part of the investment underwriting, which includes wind pattern predictions for the geographies in which we invest
	Severe weather events in East Asia, including intensified tropical cyclones and heavy precipitation disrupt supply chains for solar PV equipment procurement			Increased abrupt supply chain disruptions due to acute climate risks need to be accepted and partially prevented by diversifying geographic reach in supply chains
Chronic	Rising sea levels damage wind turbine foundations in low-lying coastal areas, and can cause physical permanent destruction to PV solar projects located in coastal areas, such as our projects in Cadiz (Spain), which raises costs (repair/insurance) and represents risk of stranded assets			Capital Dynamics' ESG risk underwriting incorporates climate-related risks in the geographies of clean energy project locations to address chronic physical risks
	Chronic global temperature rises impact worker productivity across our supply chains and in our portfolio companies, lowering output and revenues.			Risk of lower productivity as a result of global warming has to be accepted and factored into portfolio company valuations

LEGEND

Low



Medium



High



Very high

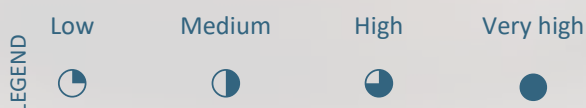




# OPPORTUNITIES

Climate Opportunity	Opportunity Description	Potential Financial Impact	Likelihood	Response
Products & Services	Increasing demand for sustainable and ESG oriented funds offer opportunities for increased market share and the development of deeper alignment with our clients	●	●	Capital Dynamics has a long-standing history in Responsible Investment and evaluates ESG factors in investment underwriting and monitoring processes. Our European private equity funds <sup>1</sup> are classified as Art. 8 "ESG Promotion" under SFDR and our Clean Energy funds are classified as Art. 9 "Sustainable Investments". In addition, our Clean Energy funds make investments eligible under the EU Taxonomy and Capital Dynamics aims to assess the proportions of EU-taxonomy aligned investments during the course of 2022 as data become increasingly available.
Market	Increasing demand for investments into our clean energy funds	●	●	While new market entrants into clean energy projects is likely given the attractiveness of this investment opportunity, clients increasingly value investors with a deep understanding of local clean energy markets. Our experience in these markets translates into better relationships with developers, a dedicated asset management team, and increased ability to secure purchase price agreements with off takers. All of this results in projects with more stable cash flows, less risk, and more value on exit.
Energy Source	Spike in demand for clean energy due to policies (e.g. European Green Deal)	●	●	Energy transition policies, such as the EU Green Deal, accelerate the coal phase-out and incentivize higher demand for renewable alternatives. It also provides an attractive and active market of investors into which Capital Dynamics can sell operational assets to maximize value on exit.
Resource Efficiency	Increasing numbers of firms committing to Net Zero and setting emission reduction targets lead to greater demand for renewable energy investments	◐	◐	Global commitments to Net Zero are rising across industries to do their part towards lowering emissions. The increased demand for offsetting operational emissions with renewable energy creates increased demand for wind, solar PV, and related technology investments.

<sup>1</sup> Excluding our secondaries strategies





# Resilience

Enhancing our portfolio companies' resource efficiency strengthens value creation during the holding period and exhibits superior returns at exit			We intend to enhance the resilience of our investee companies through our operational value creation across our business lines. For example, our Private Equity Co-Investment team frequently holds board positions in our portfolio companies. We utilize our influence to enhance the firms' sustainability profile, resource efficiency and building resilient companies that can remain viable in the transition to a low carbon economy.
Cost reductions in our own operations are achieved by our internal Sustainability measures			As part of our responsibility as a corporate citizen and stewardship of ESG in the alternative markets, we implement our own Sustainability initiatives to reduce waste, offset emissions and reduce non-essential business travel
Increasing demand for investments into assets resilient to GDP fluctuations			The COVID-19 pandemic has shown renewable energy assets are highly uncorrelated to GDP fluctuations and exhibit stable returns for our clients. Our clean energy platform, for example, did not suffer performance degradation during the pandemic unlike more traditional types of infrastructure investments such as transportation.
Increasing mandatory ESG disclosure regimes and Net Zero commitments of asset managers enhance data availability for measuring climate-risk resilience			The new ESG regulatory and reporting frameworks in multiple jurisdictions will require a substantial investment of time and resources to be adequately prepared and compliant. Capital Dynamics is making a deep commitment and investment to meet these upcoming standards and is currently collaborating with the IIGCC Private Equity Working Group for Net Zero Implementations. We welcome these new regulatory standards, which should ultimately increase the availability of data and transparency of reporting across the asset management industry with respect to the climate-related resilience of investment portfolios.
Working from home schemes allow our firm to remain resilient to unpredicted interruptions			Investments we made to our operational infrastructure during the COVID-19 pandemic enable our employees to work effectively from home, increasing our resilience to future disruptions. Overall, we believe a flexible work environment has also enhanced the work experience for our people at Capital Dynamics.
Strong focus on ESG in our firm's core values and beliefs enhances employees' motivation and commitment to the firm			Our strong RI ethos is reflected in the way we work and communicate with each other, which allows the firm to attract and retain best talent who are motivated to go the extra mile in delivering value to the firm and our clients.

## LEGEND

Low



Medium



High



Very high





# RISK MANAGEMENT

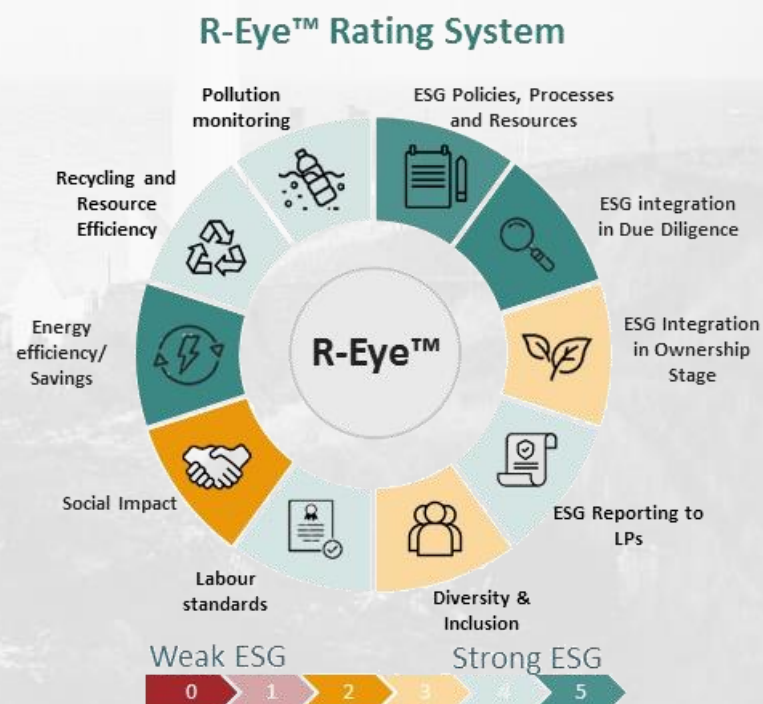
# RISK MANAGEMENT

This section provides detail on the following recommended TCFD disclosures:

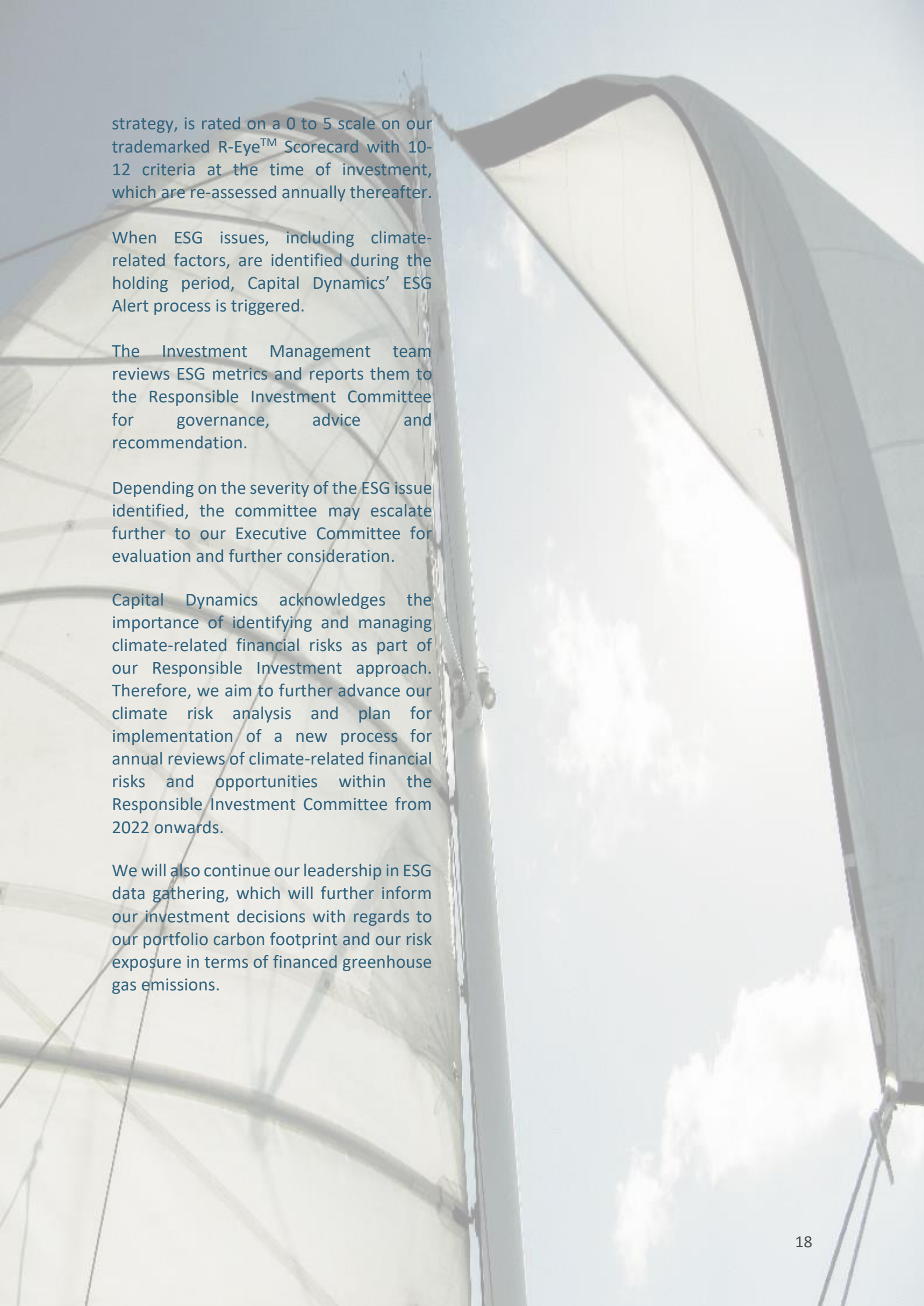
- Describes the organization's processes for identifying and assessing climate-related risks
- Describes the organization's processes for managing climate-related risks
- Describes how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management

Capital Dynamics conducts rigorous ESG screening prior to investments and during the holding period, using the firm's proprietary R-Eye™ Rating System and a third party provider which utilizes artificial intelligence to access ESG considerations. In 2021, we have implemented an additional four-eye check of material ESG risks, flagged by the Head of Investment Risk and ESG specialists, prior to escalating action items to Investment Management.

Our proprietary R-Eye™ Rating System, based on the United Nations Sustainable Development Goals, was adopted across the entire investment platform to ensure a consistent and transparent approach to ESG due diligence. Each investment made by Capital Dynamics, regardless of







strategy, is rated on a 0 to 5 scale on our trademarked R-Eye™ Scorecard with 10-12 criteria at the time of investment, which are re-assessed annually thereafter.

When ESG issues, including climate-related factors, are identified during the holding period, Capital Dynamics' ESG Alert process is triggered.

The Investment Management team reviews ESG metrics and reports them to the Responsible Investment Committee for governance, advice and recommendation.

Depending on the severity of the ESG issue identified, the committee may escalate further to our Executive Committee for evaluation and further consideration.

Capital Dynamics acknowledges the importance of identifying and managing climate-related financial risks as part of our Responsible Investment approach. Therefore, we aim to further advance our climate risk analysis and plan for implementation of a new process for annual reviews of climate-related financial risks and opportunities within the Responsible Investment Committee from 2022 onwards.

We will also continue our leadership in ESG data gathering, which will further inform our investment decisions with regards to our portfolio carbon footprint and our risk exposure in terms of financed greenhouse gas emissions.



# METRICS AND TARGETS



# METRICS & TARGETS

This section provides detail on the following recommended TCFD disclosures:

- Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process
- Describe targets used by the organization to manage climate-related risks and opportunities and performance against targets

Capital Dynamics assesses environmental considerations, including climate-related risks and opportunities as part of the R-Eye™ investment underwriting and monitoring process for our investment strategies. For example, in our Private Equity Co-Investment business we assess if each portfolio company has carbon reduction schemes in place and if they measure and track their carbon footprint. As part of our capacity as board representatives in our portfolio companies, where applicable, we also encourage our portfolio companies to strengthen their sustainability approach and disclosures, a key component of our value creation strategy.

In our Clean Energy business, we assess and disclose emissions metrics on:



Metric tons of greenhouse gas emissions avoided



Homes' electricity use for a year powered by renewable energy



Barrels of oil otherwise consumed

Our ambition is to continue leading efforts in data collection to assess climate-related risks and opportunities. We therefore plan to roll out extensive ESG questionnaires to collect KPIs from our portfolio companies and GPs. This will enable us to measure and track our financed greenhouse gases and Principal Adverse Impacts as defined in the Sustainable Finance Disclosure Regulation ("SFDR"). We also aim to quantify the financial impacts of our scenario analysis going forward.

Among other data, we will aim to collect and track the following material environmental KPIs with commercially reasonable endeavors:



Greenhouse gas emissions



Biodiversity



Water efficiency



Waste production



Air pollutants emissions



Energy consumption



# OUTLOOK

Our world faces unprecedented challenges in the race to mitigate the most detrimental effects of anthropogenic greenhouse gas emissions levels. It is important that we all contribute our share to act responsibly and with purpose. The journey ahead of us will involve both technological innovation and fundamental change in the way humankind manages its relationship with the climate.

Capital Dynamics seeks to play an integral role in the energy transition and to help steer private market enterprise and investors to manage climate-related risks and opportunities responsibly. We are also committed to accelerating the transition towards a low carbon economy and work closely with asset owners to meet the goals of the Paris Agreement.

We believe Capital Dynamics' Responsible Investment ethos is in-line with the desired climate pathways and will support our clients to find opportunities to maximize value and thrive in the decarbonization transition. We are truly invested today for a better tomorrow.

# APPENDIX

In 2021, we have conducted a climate impact assessment with regards to our assets' exposure and our resilience towards climate-related physical and transitional changes. Our analysis comprises the following hazards and impacts with regards to acute and chronic physical risks:

Climate Hazard	Potential Financial Impact
Mean air temperature rise & extreme heat	<ul style="list-style-type: none"> <li>• Potential shorter asset lifetime, such as solar PV panels in long-term exposure to heat</li> <li>• Potential lower power generation output</li> <li>• Lower worker productivity due to high temperatures</li> </ul>
Flood and heavy precipitation	<ul style="list-style-type: none"> <li>• Potential damage to installation</li> <li>• Disruption in supply chains, transport difficulties and damage to company/ production facilities</li> </ul>
Severe wind conditions & tropical cyclone	<ul style="list-style-type: none"> <li>• Potential lower power generation output</li> <li>• Potential damage to installation</li> <li>• Disruption in supply chains, transport difficulties and damage to company/ production facilities</li> </ul>
Decreasing wind speed	<ul style="list-style-type: none"> <li>• Potential lower power generation output</li> </ul>
Wildfire risk and aridity	<ul style="list-style-type: none"> <li>• Potential damage to installation</li> <li>• Increased capital costs due to damage to company/production facilities and reduced revenues from lower output</li> </ul>
Rising sea levels	<ul style="list-style-type: none"> <li>• Damage to installation</li> <li>• Increased capital costs due to damage to company/ production facilities and equipment, as well as reduced revenues from lower output</li> </ul>
Coastal flood	<ul style="list-style-type: none"> <li>• Damage to installation</li> <li>• Increased capital costs due to damage to company facilities and reduced revenues from lower output</li> </ul>

The climate hazards contained in our scenario analysis have a potential financial impact, due to the risk of stranded assets, increase in repair and insurance costs and decrease in outputs affecting sales volumes.

We measured our assets' exposure and vulnerability to climate hazards in terms of geographic location, because climate predictions are specific to each region, and we assessed our sector exposure, since certain climate hazards are more prevalent in some economic sectors and less material in others. For instance, a jack-up operation portfolio company specialized in shallow water drilling faces a direct impact of rising sea levels, whereas a service provider company, such as a software development firm which mainly relies on human capital, is more materially impacted by average air temperature rise and the projected reduction in staff productivity in the high emissions scenario. The sector-level analysis of our portfolio companies also allowed us to evaluate transition risks, in particular policy, market and reputational risks.

Transition risks	Potential Financial Impact
<b>Policy &amp; Legal</b> Increased pricing of GHG emissions	<ul style="list-style-type: none"> <li>Increased operating costs</li> <li>If costs are passed onto consumers, purchasing power is likely to be reduced, thereby demand for product decreases and sales volumes decline</li> </ul>
<b>Market</b> Increased cost of raw materials	<ul style="list-style-type: none"> <li>Increased production costs, as input prices rise (e.g. water &amp; energy for production processes, crop for livestock)</li> <li>Reduced revenue due to lower demand for products and services not compatible with a Net Zero economy</li> </ul>
<b>Reputation</b> Increased stakeholder concern over a firm's or sector's impact on the environment	<ul style="list-style-type: none"> <li>Reduced revenue from lower demand for products and services not compatible with a Net Zero economy</li> </ul>

As the energy sector is projected to undergo fundamental changes to achieve the goal of limiting global warming to 1.5°C above pre-industrial levels, we considered the Net Zero Emissions scenario produced by the International Energy Agency ('IEA') to assess the potential transition risks of our portfolio companies.<sup>2</sup>

In the IEA Net Zero scenario, fossil fuel use will substantially reduce by 2050 and low-emissions fuels such as hydrogen will significantly increase. No new oil and gas fields will be deployed beyond the ones already approved for construction. Demand for oil is projected to fall by 4% p.a. on average until 2050 due to the switch in primary energy sources, leading to partially stranded capital and significantly lower income from oil production. Oil consumption will be reduced to essential levels to support the production of goods for which no replacement exists. By 2050, over 50% of global natural gas will have shifted to hydrogen production with CCUS (Carbon Capture, Utilization and Storage). Greenhouse gas emissions

<sup>2</sup> IEA (2021): Net Zero by 2050. A Roadmap for the Global Energy Sector. Available at: <https://www.iea.org/reports/net-zero-by-2050> (Accessed November 15th 2021).



intensity of oil and gas production will be achieved through sustainability measures, such as using CCUS and eliminating flaring. Governments are projected to implement carbon taxes and extend emissions trading schemes, with CO<sub>2</sub> prices to rise up to USD 250/ ton CO<sub>2</sub> for electricity, industry and energy production by 2050 in advanced economies. In addition, the pace of growth in renewable energy to achieve these goals is expected to be 85%.

In our analysis of transition risk impacts, we have taken into account the potential financial impact of rising operating costs resulting from carbon taxes in the manufacturing sector and oil and gas operations, and we evaluated reputational risks and changing market demand for products and services.

# CLEAN ENERGY ASSET-LEVEL ANALYSIS

Below is the summary of our asset-level analysis for our Clean Energy Investments.

## A. Clean Energy Investments - Europe

In the scenario analysis for low and high levels of greenhouse gas emissions, Europe is subject to rising mean air temperature and more frequent heatwaves, especially in the Mediterranean, where wildfire risk is more severe. Wind speed is projected to decrease, while severe weather events such as storms, heavy precipitation and resulting flooding increases. Sea levels are projected to rise, resulting in greater exposure to potential stranded assets located close by the seaside.

Capital Dynamics Clean Energy Project information				Climate hazards - acute & chronic risks										
Project	Technology	Country	Region	Extreme heat	Mean temperature rise	Pluvial flooding	Heavy precipitation	Wildfire risk	Aridity	Wind speed decrease	Severe wind storms	Tropical cyclone	Sea level rise	Coastal flood
Airfield	Wind	England	Bedfordshire											
Alzo	Solar	Italy	Viterbo											
Castlegore	Wind	Ireland	Antrim											
Crockandun	Wind	Ireland	Cookstown											
Daintree	Wind	England	Crook											
Dunmore	Wind	Ireland	Limavady											
East youlstone	Wind	England	Bude											
Elginny	Wind	Ireland	Ballymena											
Falkirk	Wind	Scotland	Lionthorn											
Garlenick	Wind	England	Cornwall											
Harthill	Wind	Scotland	Harthill											
Latina	Solar	Italy	Rieti											
Longhill	Wind	England	Cambridgeshire											
Middle Balbeggie	Wind	Scotland	Fife											
Mossmorran	Wind	Scotland	Fife											
Pontinia	Solar	Italy	Rieti											
Potato Pot	Wind	England	Cumbria											
PR1	Solar	Spain	Cadiz											
PR2	Solar	Spain	Cadiz											
Red Gap	Wind	England	Durham											
Rymes	Solar	England	Gloucestershire											
Seegronan	Wind	Ireland	Donegal											
Shantavny	Wind	Ireland	Ballygawley											
Sorbie	Wind	Scotland	North Ayrshire											
Talasol	Solar	Spain	Cáceres											
Watford Lodge	Wind	England	Northamptonshire											
Westnewton	Wind	England	Cumbria											
Whiteside Hill	Wind	Scotland	Dumfries and Galloway											
Wythegill	Wind	England	Cumbria											
Ysgellog	Wind	Wales	Anglesey											



## B. Clean Energy Investments - U.S.

Increase in mean air temperature, sea levels and the frequency of heatwaves are predicted in the scenario analysis. Tropical cyclones with high precipitation rates and extreme storms are projected for the East Coast and Gulf Coast. Increase in pluvial flooding and high precipitation is foreseen for the East Coast, while fire weather and drought are projected for Central and Western North America.

Capital Dynamics Clean Energy Project information				Climate hazards - acute & chronic risks										
Project	Technology	State	Region	Extreme heat	Mean temperature rise	Pluvial flooding	Heavy precipitation	Wildfire risk	Aridity	Wind speed decrease	Severe wind storms	Tropical cyclone	Sea level rise	Coastal flood
Adairville	Solar	KY	Southeast											
Albion	Solar	IL	Mid-West											
American Falls 1	Solar	ID	Northwest											
American Falls 2	Solar	ID	Northwest											
Avalon	Solar	AZ	Southwest											
Avocet	Battery	CA	West											
AVSE	Solar	AZ	Southwest											
Ayrshire	Solar	NC	Southeast											
Balsam Lake	Solar	ON	Canada											
Batavia & Wagner	Solar	MI	Mid-West											
Beacon 2	Solar	CA	West											
Beacon 5	Solar	CA	West											
Bearford 2	Solar	NC	Southeast											
Bell Solar, LLC	Solar	IL	Mid-West											
Berry	Solar	AL	Southeast											
Bizzell	Solar	NC	Southeast											
Blackwell	Solar	CA	West											
Bo Biggs	Solar	NC	Southeast											
Boaz	Solar	NC	Southeast											
Brewster-Elk	Solar	MN	Mid-West											
Briscoe	Wind	TX	Southwest											
Cal Flats 130	Solar	CA	West											
Cal Flats 150	Solar	CA	West											
Cal Flats BESS	Battery	CA	West											
Campbell	Solar	IL	Mid-West											
Cardinal	Battery	CA	West											
Cedartown	Solar	GA	Southeast											
Centinela	Solar	CA	West											
Charleston	Solar	TN	Southeast											
Churchill-Thompson Solar, LLC	Solar	IL	Mid-West											
Citadel	Solar	NV	West											
Clackamas 1	Solar	OR	Northwest											
Clackamas 4	Solar	OR	Northwest											



Kern HSD Shafter HS Main & Ag	Solar	CA	West																
Kern HSD South HS	Solar	CA	West																
Kern HSD Stockdale HS	Solar	CA	West																
Kern HSD Support Services	Solar	CA	West																
Kern HSD Vista Continuation	Solar	CA	West																
Kern HSD Vista West Main	Solar	CA	West																
Kern HSD West HS	Solar	CA	West																
Kestrel	Battery	CA	West																
Kingbird A	Solar	CA	West																
Kingbird B	Solar	CA	West																
Kingston	Solar	GA	Southeast																
KMEC	Natural Gas	NC	Southeast																
Latitude	Solar	TN	Southeast																
Lost Hills	Solar	CA	West																
Lost Hills	Solar	CA	West																
Lumberton	Solar	MS	Southeast																
Macy's CA-Arden Fair	Solar	CA	West																
Macy's CA-Capitola	Solar	CA	West																
Macy's CA-Concord	Solar	CA	West																
Macy's CA-Eastridge	Solar	CA	West																
Macy's CA-Hayward	Solar	CA	West																
Macy's CA-Sacramento Gardens	Solar	CA	West																
Macy's CA-Sunrise South	Solar	CA	West																
Macy's MD-Annapolis	Solar	MD	Mid-Atlantic																
Macy's MD-Bowie	Solar	MD	Mid-Atlantic																
Macy's MD-Chevy Chase	Solar	MD	Mid-Atlantic																
Macy's MD-Joppa	Solar	MD	Mid-Atlantic																
Macy's MD-Salisbury	Solar	MD	Mid-Atlantic																
Macy's MD-Towson	Solar	MD	Mid-Atlantic																
Macy's MD-White Marsh	Solar	MD	Mid-Atlantic																
Marion 1	Solar	OR	Northwest																
Marion 3	Solar	OR	Northwest																
Marion 5	Solar	OR	Northwest																
Marion 6	Solar	OR	Northwest																
Martin	Solar	VA	Mid-Atlantic																
Maryland Solar	Solar	MD	Mid-Atlantic																
Meadowlark	Solar	NC	Southeast																
MEC	Natural Gas	OH	Mid-West																
Moapa	Solar	NV	West																
Moore	Solar	NC	Southeast																
Moreland	Solar	AR	Southeast																
Morilton	Solar	AR	Southeast																
Mt. Signal 3	Solar	CA	West																
Murphy	Solar	ID	Northwest																
Nash 97 Solar 2	Solar	NC	Southeast																
Nickelson 2	Solar	NC	Southeast																
Nicolis	Solar	CA	West																
Nighthawk	Battery	CA	West																
Norman	Solar	IN	Mid-West																
Norris	Solar	IL	Mid-West																
North Star	Solar	CA	West																
Nucor	Solar	IN	Mid-West																



Oneida	Solar	MI	Mid-West																
Orchard	Solar	ID	Northwest																
Orleans	Solar	IN	Mid-West																
Palmer	Solar	VA	Mid-Atlantic																
Peregrine	Battery	CA	West																
Pinckneyville	Solar	IL	Mid-West																
Porterville	Solar	CA	West																
Posey	Solar	IN	Mid-West																
Pottsville	Solar	AR	Southeast																
Pueblo Community Solar Garden (CSG)	Solar	CO	Southwest																
Quinto	Solar	CA	West																
Ratts 1	Solar	IN	Mid-West																
Ratts 2	Solar	IN	Mid-West																
RPU Tequesquite	Solar	CA	West																
Sandpiper	Battery	CA	West																
Saticoy	Battery	CA	West																
Scottsbluff	Solar	NE	Mid-West																
SCS - Amazon ACY2	Solar	NJ	Mid-Atlantic																
SCS - Amazon TEB9	Solar	NJ	Mid-Atlantic																
SCS - American Water - Bradley	Solar	IL	Mid-West																
SCS - American Water - San Koty	Solar	IL	Mid-West																
SCS - Aqua Danville	Solar	IL	Mid-West																
SCS - Aqua Manteno	Solar	IL	Mid-West																
SCS - Atlantic Sports Center	Solar	MA	Northeast																
SCS - Barnstable East	Solar	MA	Northeast																
SCS - Barnstable West	Solar	MA	Northeast																
SCS - Bowdoin	Solar	ME	Northeast																
SCS - Cozad	Solar	NE	Mid-West																
SCS - FedEx DC	Solar	DC	Mid-Atlantic																
SCS - Holliston	Solar	MA	Northeast																
SCS - IMEA Altamont	Solar	IL	Mid-West																
SCS - IMEA Naperville	Solar	IL	Mid-West																
SCS - IMEA Rock Falls	Solar	IL	Mid-West																
SCS - Lexington	Solar	NE	Mid-West																
SCS - MCWA	Solar	NY	Mid-Atlantic																
SCS - Northrup Grumman	Solar	MD	Mid-Atlantic																
SCS - Rutland Maple	Solar	MA	Northeast																
SCS - Rutland Wheeler	Solar	MA	Northeast																
SCS - Sauget American Bottoms	Solar	IL	Mid-West																
SCS - University of IL	Solar	IL	Mid-West																
SCS - Walmart Burbank	Solar	CA	West																
SCS - Walmart Calexico	Solar	CA	West																
SCS - Walmart North Highlands	Solar	CA	West																
SCS - Walmart Perris	Solar	CA	West																
SCS - Walmart Placerville	Solar	CA	West																
SCS - Walmart Sacramento	Solar	CA	West																
SCS - Walmart Wasco	Solar	CA	West																
SCS - Westchester - Courthouse Annex	Solar	NY	Mid-Atlantic																
SCS - Westchester - Croton Point	Solar	NY	Mid-Atlantic																
SCS - Westchester - Elmsford	Solar	NY	Mid-Atlantic																
SCS - Westchester - Hilltop Hanover	Solar	NY	Mid-Atlantic																
SCS - Westchester - Liberty Lines	Solar	NY	Mid-Atlantic																
SCS - Westchester - Parks HQ	Solar	NY	Mid-Atlantic																



## CO-INVESTMENTS ASSET-LEVEL ANALYSIS

Below is a summary of our asset-level analysis for our private equity co-investments business line.

In our scenario analysis, production sites of manufacturers are at increased risk for potential damage due to severe weather events while distribution channels and supply chains may face higher risks of disruption. This will result in increased operating costs and lower margins. Worker productivity is expected to decrease due to higher air temperature and extreme heatwaves, which cause declines in output volumes. Carbon price policies mainly impact the production costs of manufacturers and firms in the oil & gas industry. Market demand for high emissions products are likely to decrease in the Net Zero scenario and reputational risks associated with these products and services are likely to increase, which affect revenues and sales volumes.

Portfolio company information			Climate hazards- acute & chronic								Transition risks		
Company	Region	Sector	Extreme heat	Mean temperature rise	Pluvial flooding	Heavy precipitation	Aridity	Severe wind storms	Tropical cyclone	Sea level rise	Policy & Legal	Market	Reputation
Curves/Jenny Craig	North America	Weight loss, weight management and nutrition											
EYSA	Europe	Software											
Salient - CRGT	North America	IT services											
Shelf Drilling	Global	Jack-up operations											
geoLogic	North America	Software solution for oil & gas											
AgriBriefing	Europe	Provider of agriculture pricing data solutions and publishing											
Calucem	Europe	Building chemicals producer											
Crosscountry Consulting	North America	Business and technology consulting											
Enzen	Global	Renewable energy consultancy											
GRIT	Europe	Manufacturer of industrial gases											
Indigo Natural Resources	North America	Natural gas exploration and production											
Italcer	Europe	Manufacturer of prestige ceramic tiles											
New Era	North America	Sports headwear											
Nexus Nutrient Management	North America	Waste water treatment											
Pharmaforte	Global	Medical equipment sales											
Profile Products	North America	Provider of erosion control and horticulture solutions											
Project Trinitas	North America	CLO manager											
Shih An Farm	RoW	Producer of eggs and egg products											





Portfolio company information			Climate hazards- acute & chronic								Transition risks		
Company	Region	Sector	Extreme heat	Mean temperature rise	Pluvial flooding	Heavy precipitation	Aridity	Severe wind storms	Tropical cyclone	Sea level rise	Policy & Legal	Market	Reputation
Belmar Midco, Inc.	Colorado	Pharmaceuticals											
All Star Auto Lights, Inc.	Florida	Auto Components											
Affinitiv, Inc	Illinois	Software											
Infrastripe, LLC	North Carolina	Transportation Infrastructure											
Crafty Apes LLC	California	Entertainment											
Linen King, LLC	Oklahoma	Commercial Services & Supplies											
Core Acquisition, LLC	Washington	Machinery											
Legility, LLC	Tennessee	Software											
Easy Way Holdings, LLC	Ohio	Household Durables											
Lenox Corporation	Pennsylvania	Consumer Durables and Apparel											
Everest Transportation Systems, LLC	Illinois	Air Freight & Logistics											
AINS Acquisition, Inc.	Maryland	Software											
Galaxy Universal LLC	New York	Textiles, Apparel & Luxury Goods											
Aqua-Leisure Recreation, LLC	Massachusetts	Leisure Products											

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