

INVESTMENT TEAM TRAINING

Carbon Emissions & Climate Change Policy

For this year's annual ESG training session, we virtually hosted Dr. Michael Mehling, Deputy Director of the Center for Energy and Environmental Policy Research at MIT. An energy and environmental policy expert with over two decades of experience, Michael spoke to our Investment Team about GHG emissions and climate change regulation.

Several of our portfolio companies have set interim and long-term targets to reduce their GHG emissions in accordance with the Paris Agreement. The cost of reaching these targets can materially impact profitability, and failure to meet them can have significant reputational and regulatory implications. As a result, it is important for our Investment Team to understand the typical sources of emissions for companies, how they can be reduced, and the cost of reducing them. Climate change regulation is evolving rapidly and can have significant financial, operational, and reputational impact on our portfolio companies. It is important for our Investment Team to understand the current landscape for climate change regulation and how it is likely to evolve going forward. Below are key takeaways from the training session.

ABOUT THE SPEAKER

[Dr. Michael Mehling](#)  is the Deputy Director of the Center for Energy and Environmental Policy Research at MIT and a Professor at the University of Strathclyde Law School. He also serves as a non-executive director with Ecologic Institute in Berlin, a Manager of the Konrad-von-Moltke Fund, and a founding board member of Ecologic Institute in Washington, DC, the Blockchain & Climate Institute in London, and the European Roundtable on Climate Change and Sustainable Transition in Brussels. With over 20 years of experience in energy and environmental policy, Michael has worked with government agencies, private companies, and civil society organizations across North America, Europe, and the developing world. His work focuses on instruments of energy and environmental policy, and his research interests include carbon pricing, international climate negotiations, comparative energy and climate policy, and the drivers and conditions of energy transitions.

Sources of Emissions

GHG emissions are generally categorized into Scope 1, Scope 2, and Scope 3. We evaluate companies within this framework, as it aligns with the nature of emission reduction commitments companies typically make and how they are evaluated by regulators.

SCOPE 1: DIRECT EMISSIONS

Scope 1 emissions are direct emissions generated within a company's facilities and are under its direct control. These emissions mainly result from the combustion of fossil fuels, the use of oil and gas for on-site heating, and refrigeration. Scope 1 emissions tend to be significant for companies in the oil and gas, transportation, mining, and industrial manufacturing sectors, whose operations are energy-intensive or rely heavily on fossil fuels.

SCOPE 2: INDIRECT EMISSIONS

Scope 2 emissions are indirect emissions related to energy use that are not produced on site. These emissions come from the energy procured from outside the company's facilities, such as electricity from the grid. Scope 2 emissions tend to be significant for companies in retail, commercial real estate, technology, and financial services sectors, which rely heavily on purchased electricity for operations.

SCOPE 3: VALUE CHAIN EMISSIONS

Scope 3 emissions are value chain emissions that occur outside a company's direct control and facility boundaries. These emissions are categorized into upstream and downstream emissions. Upstream emissions include those associated with the production and transportation of raw material inputs and staff commutes. Downstream emissions include emissions from the transportation, use, and end-of-life disposal or recycling of products. Scope 3 emissions are typically significant for companies in the consumer goods, food and beverage, and automotive sectors, due to their extensive supply chains and the emissions generated throughout the product lifecycle—from use to disposal. Most companies focus on Scope 1 and

Scope 2 commitments because they have direct control over these emissions, making them easier to manage and reduce. In contrast, Scope 3 emissions involve the broader value chain, which is outside the company's direct influence. Measuring Scope 3 emissions is also more complex, requiring data from external sources and collaboration with partners, making it harder to set and achieve actionable targets.

How Companies Can Reduce Emissions

While sources of Scope 1, 2, and 3 emissions vary across companies and industries, Michael outlined certain steps companies can take to reduce their emissions:

SCOPE 1

Companies can reduce Scope 1 emissions by switching to renewable energy sources, using alternative fuels, transitioning to electric vehicles, improving energy efficiency, and upgrading refrigeration systems. The following are examples of the techniques some of our portfolio companies are using to reduce Scope 1 emissions:

- **Badger Infrastructure** is developing heavy-duty excavation vehicles that run on alternative fuels and introducing hybrid pickup trucks into its light-duty fleet to reduce its Scope 1 emissions
- **Canadian National Railway** is investing in more fuel-efficient equipment and is exploring the use of cleaner fuels to run its locomotive fleet.

SCOPE 2

Companies can reduce Scope 2 emissions by switching to renewable electricity, improving energy efficiency in buildings and operations, implementing energy management systems, and generating renewable energy on site. The following are examples of the techniques some of our portfolio companies are using to reduce Scope 2 emissions.

- **Dollar Tree** has equipped 99% of its stores with energy management system technology and LED lighting.
- **Ahold Delhaize** (supermarket chain) is installing solar panels to power its stores.
- **Amazon** (e-commerce and cloud) and **Alphabet** (Google's parent company) are two of the largest purchasers of renewable energy in the world.
- **Carrier Global** (HVAC company) helps its consumer and commercial customers reduce their Scope 2 emissions by providing intelligent energy solutions that control heating, cooling, and lighting based on usage.

SCOPE 3

Companies can reduce upstream emissions by collaborating with suppliers to decarbonize processes, optimize logistics, and minimize waste, such as through more sustainable packaging. Downstream emissions can be reduced by designing low-emission products, optimizing packaging, and ensuring that products are recyclable or have a smaller environmental impact at the end of their lifecycle. The following are examples of some of the techniques our portfolio companies are using to reduce Scope 3 emissions.

- **Nestlé** and **Mondelez** work closely with farmers to promote sustainable agricultural practices and with suppliers to improve energy efficiency, helping to reduce their upstream emissions.
- **Procter & Gamble** (consumer goods company) has invested significantly in reducing downstream emissions through product innovations that use less product per use, reducing packaging, and supporting circular economy initiatives such as recycling and waste reduction.

Cost of Reducing Emissions

Michael explained that the cost to reduce emissions is difficult to forecast and varies greatly by company and industry. For some companies, reducing emissions can actually save the company money, while for others, it can be a substantial cost. For example, switching from incandescent to LED lighting can lower electricity bills over time, while advanced technologies like direct air capture for carbon removal can be expensive. He provided the Investment Team with the following guidelines to consider when evaluating the potential cost for a company to reduce its emissions:

INDUSTRY TYPE

Emission reduction costs vary by industry, depending on the source of emissions. Industries that rely heavily on fossil fuels, such as oil and gas or heavy manufacturing, tend to face higher costs due to the need for more intensive changes to processes, equipment, and energy sourcing.

COMPANY-SPECIFIC FACTORS

Emission reduction costs depend on company-specific factors, such as scale of operations, existing infrastructure, and supply chain complexity. The cost of reducing emissions for companies with widespread operations, outdated infrastructure and complex supply chains, for instance, will be higher.

AVAILABILITY AND AFFORDABILITY OF SOLUTIONS

Innovations in technology have made some emission reduction solutions more accessible and affordable, such as renewable energy. Other solutions, such as carbon capture and storage are still very costly.

REGULATORY REQUIREMENTS AND INCENTIVES

Local climate regulations such as carbon pricing, emissions targets, and environmental standards can drive up costs, while incentives such as subsidies and tax credits can help mitigate higher costs.

The State of Climate Change Regulation

Understanding the state of climate change regulation in the regions in which we invest is important because these regulations can impact companies' operating costs, compliance risks, and brand value, which can all be financially material.

Michael explained that the regulatory landscape is complex and varies widely across regions. Governments are becoming more involved in emissions reporting and accounting standards, resulting in a patchwork of regulations. For instance, the EU and the U.S. have developed distinct frameworks, which can lead to confusion, add complexity, and increase costs for the global companies in which we invest.

In particular, Scope 3 emissions have been contentious. This is due to the complexity of assigning responsibility for these emissions across the value chain, as these emissions are typically the Scope 1 or Scope 2 emissions of multiple other companies. The EU's Corporate Sustainability Reporting Directive is the most comprehensive, mandating the reporting of Scope 1, 2, and 3 emissions. We have engaged with our holdings in Europe, such as **Nestlé**, **Heineken**, and **Unilever**, on their approaches toward reporting and reducing their Scope 3 emissions. The controversial SEC climate disclosure rule in the U.S., meanwhile, proposes the reporting of only material Scope 1 and 2 emissions.

Burgundy's focus on investing in competitively advantaged, quality companies generally steers us away from upstream commodity-type businesses, which are often large carbon emitters and the target of carbon regulations. As we show in the next section, our portfolios have a much lower carbon footprint than their benchmark indices.

Carbon regulations will continue to evolve, and we will need to assess how they will impact the operating environment of our portfolio companies. Yet, it is not only regulation that drives change; innovation and new technology will be critical to carbon reduction. Adaptable and well-managed companies will be in a better position to navigate this evolution. **B**

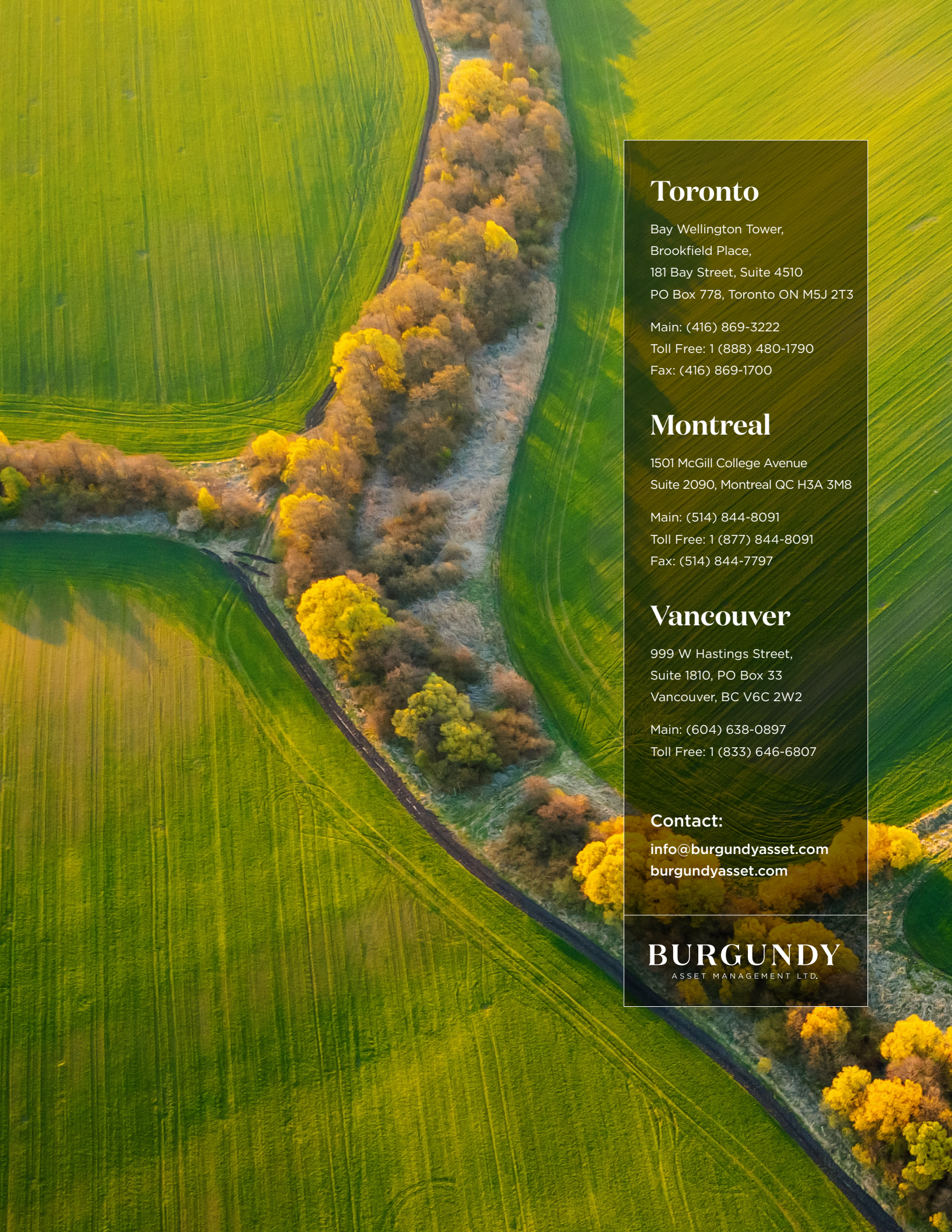
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An aerial photograph of a river winding through vibrant green agricultural fields. A dense line of trees with yellow and orange autumn foliage runs along the riverbank, separating the fields. The lighting is warm, suggesting late afternoon or early morning.

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