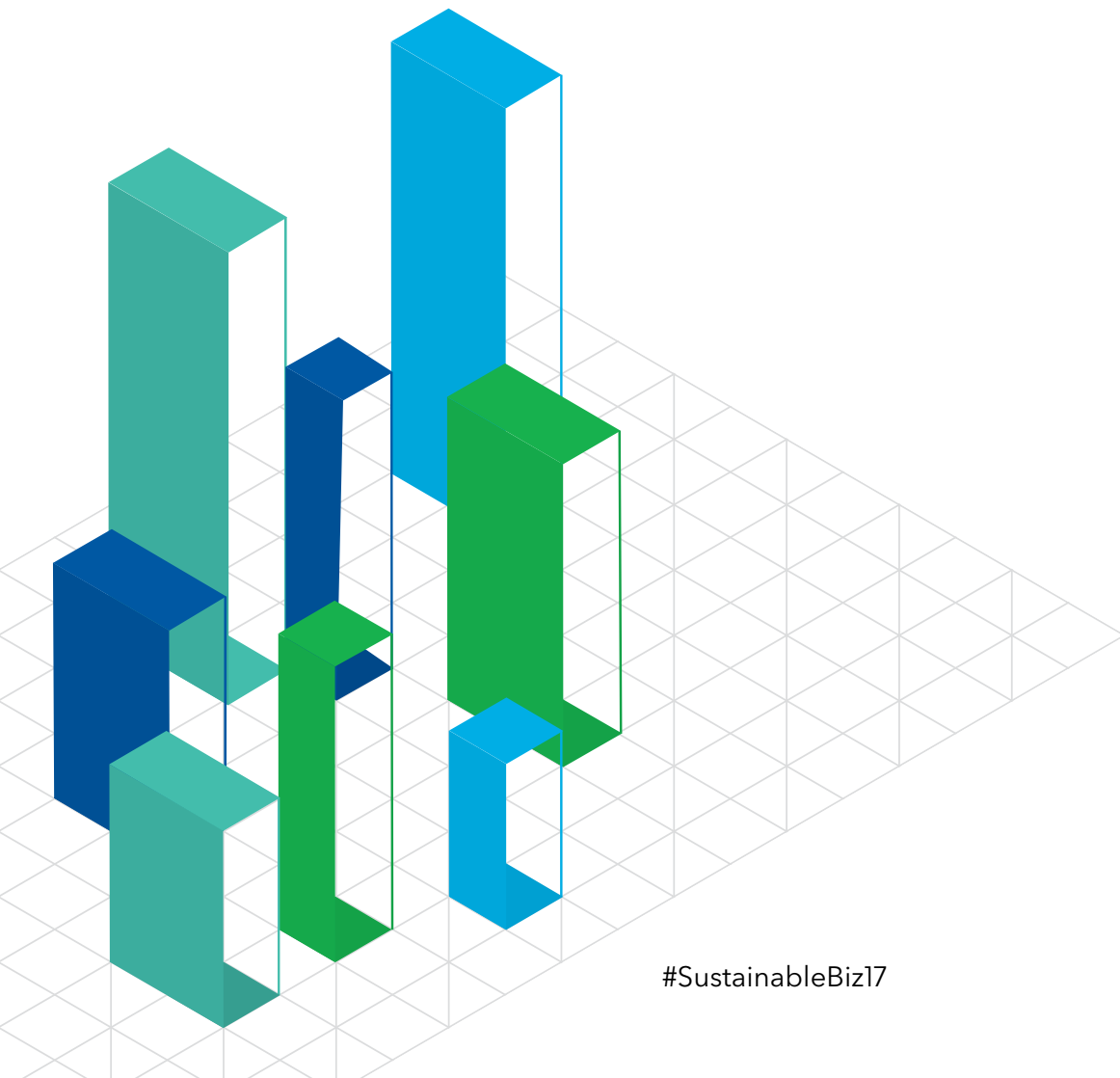


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# The Business of a Low-Carbon Future:

Spotlight on Canada



#SustainableBiz17

# The Business of a Low-Carbon Future: Spotlight on Canada

In 2015, 197 countries signed on to the Paris climate agreement in a collective effort to tackle the challenges of climate change. Since then, 195 countries have signed the agreement, reaffirming their commitment to curb greenhouse gas (GHG) emissions, foster climate resilience, and finance climate-focused development. Together, they represent almost 90 percent of global emissions.<sup>1</sup>

As governments develop and enact wide ranging policies and regulations to meet key emissions and finance goals by 2030, businesses across the globe are stepping up to the challenge and taking a leadership role in reducing GHG emissions. They are developing new strategies and investing in technologies and processes to help accelerate the transition to a low-carbon economy.

How does Canada plan to meet its commitments? What is its plan for 2030 and beyond, and what key challenges will it need to overcome to achieve its goals?

The second annual Bloomberg Sustainable Business Summit: Toronto was held in September 2017 and gathered top industry experts to share their insights on this topic. The summit was co-hosted by TD Bank Group (TD) and marked the kickoff of a two-year thought leadership series - the TD-Bloomberg Sustainability Dialogues. This series brings together key influencers to provide a uniquely Canadian view on the transition to a low-carbon economy, and explores a range of topics and perspectives, considering both opportunities and challenges.

The 2017 Summit covered the roles of renewable energy, clean transportation, infrastructure, investment, and changing consumer priorities and behaviour.

**“Sustainability at the corporate level - in the form of cost savings, revenue generation, and product innovation - is one of the biggest business opportunities of the 21st century.”**

— Lee Ballin, head of sustainable business programs, Bloomberg LP

## Canada Charts its Course

Like all signatories to the Paris climate agreement, Canada is not required to follow a specific course of action. It has its own goals and approach to reducing GHG emissions and helping to stabilize world temperatures. Craig Alexander, senior vice president and chief economist of the Conference Board of Canada, spoke about Canada’s plan - the Pan-Canadian Framework on Clean Growth and Climate Change - offering his perspective on the big questions: Is it achievable? What are the challenges? What does this mean for Canadian society?

The framework is ambitious, calling for emissions cuts of 30 percent below 2005 levels by 2030. It is also comprehensive, touching every aspect of the Canadian economy, including energy transmission, infrastructure, transportation, and taxation. Alexander’s team at the Conference Board has analyzed the framework, modeling economic scenarios to determine what actions would be required to achieve the national goals. The group concluded that this would require a number of transformational and interrelated changes to be implemented.

Alexander said the incremental cost of implementing the plan will not be material to the Canadian economy. Rather, the most important economic issues are how the initiative is funded and how those

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<sup>1</sup> Climate Analytics, “Paris Agreement Ratification Tracker,” <http://climateanalytics.org/hot-topics/ratification-tracker.html>

funds are used. Putting a price on carbon is critical, he said, and those revenues would need to channel into core investments in areas like infrastructure and green technology, “not as a cash cow for the government to use for general revenue.”

Political issues might be the most difficult to navigate. “You have to have a Canadian population that buys into the vision and is willing to accept the required changes. That’s a big hurdle,” Alexander said, because Canadians are not as well informed about these issues as they could be.

Achieving these goals is also an enormous undertaking, and society will need to make tough choices. In economic terms, there will be a “crowding out,” meaning these investments will have to be given priority over other activities. “We have finite resources,” Alexander said. “We’ll have to prioritize as a nation.” For these reasons, educating the public is critical, and government needs to lead the way.

The good news is Canada is already well positioned for the low-carbon transition with about two-thirds of its power coming from renewable sources. And Ontario, the country’s second-largest province, has implemented cap-and-trade for carbon emissions, and closed its last coal plant in 2014.

Keeping in mind Canada’s resources, challenges, and potential, Alexander believes the framework’s most important trait is its flexibility. It establishes national goals but does not dictate how each province and metro area must carry them out. They can take action according to their particular needs.

In that sense, the framework is a national plan that allows local control. And that, in Alexander’s informed opinion, is the best path to success.

## The Drive to Zero Emissions Electricity

Canada already has one of the cleanest electricity grids in the world, with renewables accounting for two-thirds of Canada’s electricity.<sup>2</sup> Hydroelectric power is the backbone of Canada’s electricity sector, supplying 60 percent, in addition to 6 percent from wind and solar. Hydro continues to develop steadily

despite debate over its environmental trade-offs, because it can produce very large quantities of electricity without burning fossil fuels.<sup>3</sup>

Solar and wind power are also expanding steadily, and nuclear can play a crucial role in transitioning Canada away from fossil fuels. During the renewable energy panel at the Toronto summit, John Barrett, president and chief executive officer of the Canadian Nuclear Association, said small-scale nuclear reactors equipped to power a single community or a large work site may be available within a decade.

Transmission infrastructure is key to bringing alternative energy sources to regional and national economies, and needs considerable investment. “If we want to decarbonize our neighbours...we have to create channels to bring the energy there,” said Richard Cacchione, president of Hydro-Québec Production.

David Hickey, chief executive officer of Siemens Wind Power, agreed: “Transmission flexibility and connections...are going to be key to creating a flexible and adaptable grid, and that really helps facilitate renewables and a low-carbon future.” Tesla and Siemens Canada are leaders in renewable power generation and storage, and this will spark transformation in other sectors.

## Infrastructure Investment

Lowering emissions also requires many changes to the built environment. Tom Rand, managing partner at investing firm ArcTern Ventures, said that historically, transforming infrastructure takes between 50 and 75 years, but businesses can help accelerate that timeline.

“We need to look at the nature of infrastructure, the nature of debt finance, [and] how you accelerate technologies [through] ‘big box clean tech,’” Rand said. “It has its own challenges in the market, and we have to address those challenges.”

There is appetite among business groups, development banks, and governments to increase funding and research for sustainable infrastructure,

<sup>2</sup> Mia Rabson, “Two-Thirds of Canada’s Electricity Now Comes From Renewable Energy,” *The Star*, May 2, 2017, <https://www.thestar.com/news/canada/2017/05/02/two-thirds-of-canadas-electricity-now-comes-from-renewable-energy.html>

<sup>3</sup> Canadian Hydropower Association, “Facts: Five Things You Need to Know About Hydropower,” <https://canadahydro.ca/facts/>

but more needs to be done to attract the necessary finance. McKinsey & Company estimates that an additional 6 percent in up-front capital will be required to make new infrastructure more sustainable.<sup>4</sup>

John Cook, president and chief executive officer of Green Chip Financial, agreed there is “a capital investment problem” in clean-technology infrastructure development, and said that large institutional investors are still testing the waters. But he thinks strong interest among their clients will ultimately push them toward green innovation.

To drive greater investment, “We need some successes,” Rand said. “The good news is there is a strong bench of Canadian companies competing for contracts in the global market. They’re competing with fossil fuel companies and they’re winning. If we see some significant IPOs coming out of that group, there will be a lot of attention paid to that sector. There’s nothing like success to attract more capital.”

### Accelerating Investment

According to the World Bank and Clean Energy Canada, in the next 15 years, the global economy will require \$89 trillion in infrastructure improvements, including \$4.1 trillion in investment to limit global temperatures. There has been \$2 trillion of global clean energy investment in the past five years, but much more is needed.

## Green Transportation

Transport produces 23 percent of Canada’s GHG emissions. That’s why municipalities are developing multi-modal transportation systems, and cities and companies are increasingly transitioning to electric fleets. Light-vehicle transport accounts for 48 percent of Canada’s emissions from transportation, so innovation in electric and other alternative-fuel cars

and infrastructure is vital, and opens a vast new field for business activity and investment.<sup>5</sup> At Hydro-Quebec, for example, 99 percent of the fleet is hydroelectric, representing the leading edge of an accelerating trend.

“If you’re a policy planner, if you’re in urban design, then obviously your modus operandi has to be to kill the car,” said Josipa Petrunic, executive director and chief executive officer of the Canadian Urban Transit Research & Innovation Consortium. “The gasoline propulsion system should become incomprehensible from a sustainability standpoint.”

Cara Clairman, president and chief executive of nonprofit organization Plug’n Drive, said use of electric cars must become much more widespread if there is any hope of hitting emissions reduction goals. For Canada to reach its GHG goals, seven out of every 10 new cars on the country’s roads need to be electric, an enormous increase from the one in 100 that are electric today.<sup>6</sup>

Educating consumers on the economic and environmental benefits of shifting away from gasoline can help drive demand and bring more electric vehicles to the mainstream. For Clairman, this was the impetus for Plug’n Drive to open the world’s first Electric Vehicle (EV) Discovery Centre in Ontario. The Centre provides an opportunity for consumers to learn – in person – the benefits of EVs. They can test drive different models alongside charging solutions for their home and on the road.

With sponsorships from all sectors of society, the EV Discovery Centre is also a great example of how business, government, and civil society are collaborating to advance the transition to a low-carbon world. Fostering dialogue and partnerships among government agencies, transport companies, and manufacturers can encourage wider adoption of clean public transportation.

<sup>4</sup> Aaron Bielenberg, et al, “The Next Generation of Infrastructure,” McKinsey & Company, <https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/next-generation-of-infrastructure>

<sup>5</sup> Standing Senate Committee on Energy, the Environment and Natural Resources, “Decarbonizing Transportation in Canada,” June 2017, [https://senCanada.ca/content/sen/committee/421/ENEV/reports/ENEV\\_TransportationReport\\_FINAL\\_e.pdf](https://senCanada.ca/content/sen/committee/421/ENEV/reports/ENEV_TransportationReport_FINAL_e.pdf)

<sup>6</sup> Ibid

### Case Study: Bringing Electric Buses to City Streets

The Canadian Urban Transit Research & Innovation Consortium asked why there were no electric buses on the road in the Greater Toronto Area.

Surveying several transit agencies provided some answers: Non-standard equipment, a lack of “right-sized” technology, the forbidding upfront cost of electric vehicles – up to 4x that of diesel – and lack of staff electricians.

The Consortium is working with agencies on a pilot project to bring electric buses to Ontario. The goal is to integrate seven transit systems and get 25 buses on the road within two years. The long-term outcome of these partnerships is to standardize electrification of transit across Ontario.

## Changing Consumer Behaviour

The top factors influencing the scale and pace of the low-carbon transition are acceptance from consumers and a change in our consumption patterns, noted summit panelists. Complicating this is a “say-do” gap. Ingrid Thompson, chief executive officer of non-governmental organization Pollution Probe, noted that concern for environmental welfare is now part of mainstream thinking in Canada.

However, the country hasn’t seen the large-scale acceptance that business, government, and nonprofit organizations are hoping for. Canadians recognize that the environment is a concern, but there is a gap between what they feel and say, and taking action.

One reason may be that “Canadians are rejecting this dichotomy between the environment and the economy,” said Sarah Robertson, vice president for corporate and public affairs at Environics Research. “They’re not interested in a forced-choice scenario. They feel that we as a society should be able to have both.”

Working to educate and include the public in environmental action is a key role for government,

business, and civil society alike. “Canadians are looking for leadership from business and government,” Robertson said. “The younger segment, especially, wants leaders to smooth their pathway to making the change.”

**“We need to give people news they can use,” Thompson said. “Stop describing the problem. Give people simple, practical, actionable advice and information.”**

— Ingrid Thompson, CEO, Pollution Probe

Thompson noted that “governments aren’t very good at communicating with people in ways they can understand.” Her advice: Adopt some of the principles of consumer marketing, starting with the concept of customer-centricity. “When you’re asking for change, you have to understand what it means to the individual, and not just from a fact-based perspective,” she said.

Second, “segment” your message according to the audience. “To drive change among consumers, you have to remember they’re not a homogeneous group,” Thompson said. “They’re different by region, by demographics, by psychographics.”

The goal of segmentation, she said, “is to persuade your audience that the next step in this transformation has been designed and built for them specifically – their personal and economic circumstances, their timing.”

Finally, appeal to a consumer’s emotions. “Yes, you need to tell them what they need to do,” she said. “But you need to reach them on an emotional level. That’s how people respond and begin to change.”

## Role of Government

Public-private partnerships are critical in order to achieve the transformation that is required.

Government can facilitate change through effective and efficient public policy, creation of incentives, and regulation that mandates innovation.

## **“We know that by and large, business gets it. They know they have to reduce emissions.”**

—Chris Ballard, Minister of the Environment and Climate Change, Province of Ontario

Canada has taken a bold step and introduced carbon pricing regulation - nationally and in most provinces. To mitigate the impact of this regulation on business, the province of Ontario has instituted a cap-and-trade program.

“We know that by and large business gets it; they know they have to reduce emissions,” said Chris Ballard, minister of the environment and climate change for the Legislative Assembly of Ontario. “Cap-and-trade allows us to work with them to give them a bit longer runway to hit those emission targets.”

Cap-and-trade also creates a new source of revenue that can be reinvested in green industry. “This will help Ontario in the long term,” Ballard said.

In addition, Ontario has introduced a \$325 million green investment fund to help jump-start the transition to a green economy. Reza Moridi, Ontario’s minister of research, innovation and science, said this will spur the development of new technologies that can be used nationally and also exported to other markets, furthering Canada’s position as an engine of growth for green business.

### **Climate Adaptation**

Most climate-related action is focused on halting or reversing climate change over the long term. But mitigating physical risk related to a changing climate is an immediate need. Since climate change’s effects are already so widespread, both proactive and reactive policies are necessary. “Climate change is happening and it’s costing our economy billions every year,” said Alexander of the Conference Board of Canada. “Between now and when we get to our target, you need to have the infrastructure to cope with the climate change that has happened and will continue to happen.”

Blair Feltmate, head of the Intact Centre on Climate Adaptation at University of Waterloo in Ontario, said Canada’s top impact from climate change is flooding, “by a country mile.” Canada has a growing uninsurable housing market due to flood damage, as well as an increasing problem with flood-related mortgage defaults.

Feltmate’s institute is helping establish new standards for flood protection and flood-resilient community design. An insurance industry that is more focused on the realities of climate impacts will tend to benefit the business sector as well as individual consumers in the long run.

## **“[Given] the size, scope, and complexity of climate change, having basic information out there about what managers and institutional investors are thinking of in terms of different scenarios is not only appropriate but necessary.”**

—Steve Lydenberg, Partner, Domini Social

### **Climate-Sensitive Management**

Companies whose leaders are most proactive about sustainability can best navigate the transition. The Task Force for Climate-Related Financial Disclosures - a project of the Financial Stability Board, an international body tasked with monitoring and advising the global financial system - recommends that international banking and financial companies use scenario analysis to assess climate-related risks and opportunities.

Steve Lydenberg, partner for strategic vision at Domini Social Investments, described the Task Force’s recommendations as “a radical departure from the usual kind of data disclosure,” and values its insights about whether a company’s management is informed, flexible, and prepared for various eventualities. He said companies need “a storytelling kind of scenario analysis” that pushes leaders to imagine unpredictable long-term possibilities.

“It is not the goal to come up with a prediction and have a company make a bet on a single scenario,” he said. “It’s the goal to open the mind of management so they can see what it might mean to do business in a different way than it’s been done before.”

Karen Clarke-Whistler, chief environment officer at TD Bank Group, encourages financial companies to avoid falling into the trap of thinking that climate risk should be calculated differently from other risk assessments. Governance and risk management processes for climate-related risks and initiatives “should be as rigorously explained as any other type of risk.”

## Sustainable Investment

Just a decade ago, socially responsible investing mostly involved exclusionary screening. Today, it’s a major part of the entire investment process. The Responsible Investment Association says that, through 2015, there was \$1.5 trillion under management in Canada in the sustainable investment space, up 50 percent from 2013, and triple the size of the market in 2010. Pension funds account for 75 percent of that growth, as sustainable investing has proven to be a good long-term investment.

Overall, sustainable, responsible, and impact investing grew by 33 percent from 2014 to 2016, according to the Forum for Sustainable and Responsible Investment.<sup>7</sup>

“There’s been an amazing mainstreaming of sustainable investment where the largest, most mainstream, most financially oriented investors are looking at ESG (environmental, social, and governance) information as something that can create value for their research process,” said Simon MacMahon, executive vice president of research for Sustainalytics, an ESG investor research firm.

How effective is this approach to investing? “Over time, we’ve seen companies making good progress on governance,” said Barbara Zvan, chief risk and strategy officer at the Ontario Teachers’ Pension Fund. “More recently, we’re seeing progress on environmental and social issues. There is an ongoing

dialogue with companies so they understand what’s important to investors...The leaders of these organizations are both leaders and learners.”

Why do investors invest in sustainable funds? MacMahon said investors often have a dual mandate – to make an impact and to generate financial returns. “Our clients are usually long-term investors looking to make an impact both socially and financially,” he said.

Robert Walker, head of ESG at NEI Investments, affirmed that these funds do deliver good financial performance and do an even better job of delivering on ESG objectives, especially since companies have started taking direction from the UN’s Sustainable Development Goals.

Zvan said there is clearly a correlation between good ESG practices and a company’s market success. Conversely, a company that fails to operate according to these standards will surely see it affect its stock value. Sustainable investing is growing in Canada – and everywhere – because sustainable practices are good for business.

## ‘Just a Matter of Time’

Canada is clearly moving toward a low-carbon economy, and business will play a crucial role in the coming years.

“It’s a transition for everyone: society, companies, government,” said Hickey of Siemens Wind Power. “When you see big business embracing these technologies, it’s just a matter of time. The economics are at the point now that there’s no turning back.”

Content in this white paper was informed by expert panel discussions at the Bloomberg Sustainable Business Summit: Toronto. This is the first of six white papers in alignment with the TD-Bloomberg Sustainability Dialogue Series. Learn more [here](#).

<sup>7</sup> The Forum for Sustainable and Responsible Investment, “SRI Basics,” <http://www.ussif.org/sribasics>

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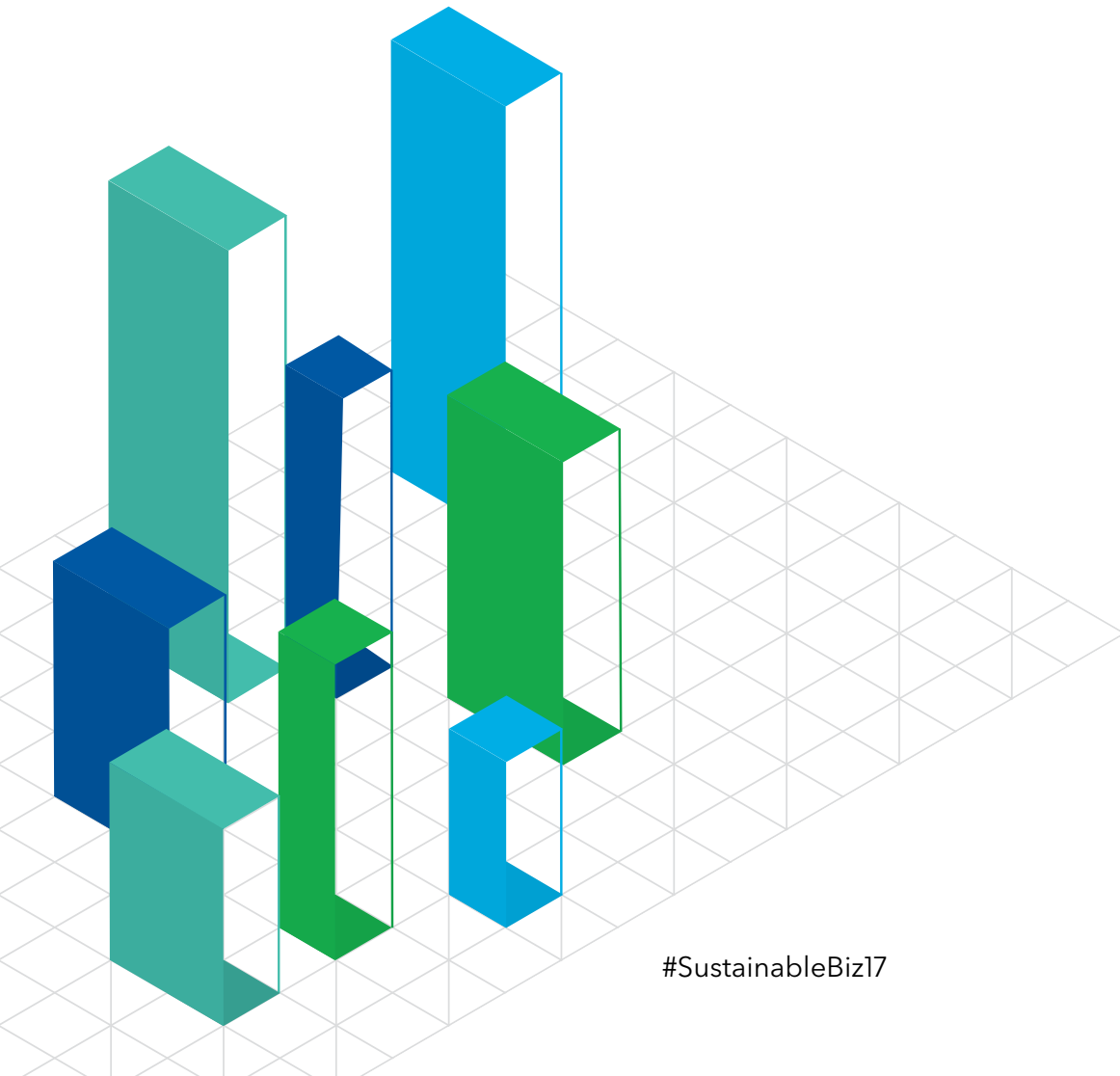
To find out more, contact:

**Thomas Miller**

Global Business Commercial Lead  
Bloomberg Next  
917.414.7597  
tmiller@bloombergnext.com

**Lee Ballin**

Head of Sustainable Business Programs  
Bloomberg  
212.617.3985  
lballin@bloomberg.net



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