

Kellogg Insight  
The Insightful Leader  
Podcast Transcript  
November 2021 – Meghan Busse

**Jessica LOVE:** Lately, you may have been noticing a lot of headlines like this:

**[NEWSCASTS]** “...flash flooding ongoing across much of middle Tennessee things to record rainfall...” “...the U S wildfire season is off to its worst start in a decade, especially out in California...” “...300 plus record temperatures expected through Friday...” “...winds of up to 150 miles per hour. Ida tied for fifth strongest hurricane ever to hit the main...”

**LOVE:** Extreme weather events are becoming more common and more extreme around the globe. The oceans are rising, the ice caps are melting. The reality is: Climate change is here. And...it's bad. And according to the Intergovernmental Panel on Climate Change, the situation is only getting more dire.

**Meghan BUSSE:** How long do we have to stop climate change? What scientists are telling us is that we don't have any time. We don't have any time anymore.

**LOVE:** That's Meghan Busse, an associate professor of strategy here at Kellogg and an expert on the economics of energy markets.

**BUSSE:** But we still have a really important choice. The choice that we have now is: Do we want that worsening to be a little bit worse? Or do we want it to be a lot worse? Because at the moment, those are our choices.

**LOVE:** This is The Insightful Leader. I'm your host, Jessica Love. Today we're diving deep on the future of climate change with Meghan Busse, who spoke with us at our Insightful Leader Live event in October. And she says that...as dire as things look...there is still time for us to avoid the worst case scenarios if we commit to meaningful action right now. This episode, we hear from Busse about what a transition to carbon neutrality might look like, and the steps businesses can take to help us get there. Because businesses have a bigger role to play than individuals alone. Which means...the future could be in their hands.

[Music interlude]

Busse says reducing greenhouse gas emissions has been a central pillar of every major international climate accord since 1992. And that's because greenhouse gases like carbon dioxide and methane that trap infrared radiation are major contributors to global warming. It's why getting to carbon neutrality is so vital. And with over 2.6 million

pounds of carbon dioxide entering the atmosphere every second, Busse says we've got a lot of work to do.

And to get it done, we'll have to think bigger than the individual scale.

**BUSSE:** Recycling might make you feel good. The things you can do inside your house might make you feel good, and you should do them—but they won't be enough.

**LOVE:** That's because the vast majority of the world's greenhouse gas emissions can be traced back to corporate decision-making. So businesses will play a big role in taking us to a carbon neutral future. Busse says that a lot of the action is going to happen in 3 areas.

**BUSSE:** If we want to reduce greenhouse gas emissions in an effort to keep to that 1.5 Celsius degree increase, the big levers we're going to need to pull are in electricity, transportation, and industrial use.

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**LOVE:** Lever one: Electricity; lever two: Transportation; and lever three: industry and agriculture. Each of these sectors accounts for roughly one quarter of US greenhouse gas emissions. Globally, agriculture is a little more significant and transportation a little less... but the relative importance of these three emissions sources holds true.

**BUSSE:** So let's take a look at each one of those sections. Electricity has some really, really good news.

**LOVE:** A decade ago, renewable energy sources were some of the most expensive options on the market. That was primarily because we simply didn't have the technology to harvest them in big enough batches. But in the past 10 years, we've solved a lot of those technological issues. And the price of renewable energy has fallen dramatically, as a result.

**BUSSE:** In fact, the cost of renewable generation has fallen so far that for some generation technologies like wind and like centralized solar, the fully allocated cost is now coming within the range of the operating costs of fossil fuels. That means we are starting to get to the point where it's cheaper to install new renewables than it is to run existing fossil fuel generations. That is terrific news.

**LOVE:** Switching to these renewable energy sources for electricity generation could eliminate the equivalent of over 1.5 billion metric tons of carbon dioxide being pumped into the atmosphere every year. So finding ways to switch to green electricity will be key for businesses who want to lead on climate action.

But there are still some obstacles that are holding up a transition to green electricity. We need to update our energy grid for instance. And find ways to bypass some of the entrenched political interests of fossil fuels. And we need to increase our storage capacities.

**BUSSE:** If we had storage, if we could take this electricity that we can generate here and store it to the night or store it from sunny days to cloudy days or store it for an area that has a lull on the wind, that would help a lot.

**LOVE:** Beyond interventions in electricity, Busse says business leaders can also be making inroads on transportation-related emissions. These days, electric vehicles are generating a lot of excitement on that front, but Busse says they are not a comprehensive solution.

**BUSSE:** So there's some signs of momentum in passenger vehicles. Passenger vehicles are only about 60% of road transportation, which itself is only a fraction of total transportation. Other transportation applications like freight, trucking, like shipping and like travel by air are not nearly as easy to electrify, and those continue to be a challenge.

**LOVE:** That's because fossil fuels are really hard to beat when it comes to transportation needs. They're what's called "energy dense" relative to their weight and they're portable. Renewable alternatives are not really competitive in this arena. So Busse thinks the lever here will be continuing to develop new technologies.

**BUSSE:** One exciting possibility, although it's way on the horizon still is green hydrogen.

**LOVE:** Green hydrogen is hydrogen that's produced by electrolysis using renewable energy. It's energy dense, and its only by-product is water.

**BUSSE:** It is the fuel of the future and probably always will be. So that's what we're hoping to do. To make it a real fuel, not just a fuel that we're always hoping about in the future.

**LOVE:** Finally, let's take a look at the third major source of greenhouse gas emissions that we will need to tackle: industry and agriculture. That includes things like iron and cement production, livestock and crop burning, even Bitcoin.

**BUSSE:** Which is an incredibly electricity intensive, uh, industry, because it, uh, it's all running powerful servers.

And there are some estimates that estimate that mining for bitcoin may take almost a percent of world's electricity consumption.

**LOVE:** Busse says the unique opportunity here is targeted regulations on things like methane emissions, which businesses can support by publicly advocating for.

**BUSSE:** Methane is a particular concern because it has about 80 times the heat trapping effect of carbon dioxide. So finding a way to reduce methane emissions has really an outsized bang for the buck in terms of what it does for the climate, especially in the short term.

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**LOVE:** Those short term solutions are extremely important because they buy us some much needed time.

**BUSSE:** What I want at the moment is to be able to reduce our emissions enough in the near term -- in the immediate term that we can see -- so that our civilization gets a chance to need those future carbon renewables systems. And therefore, what I would most wish for are the technologies that will give us a chance to be able to do those things in the long run.

**LOVE:** To avoid the worst climate change can throw at us, businesses have to make real changes around electricity, transportation and industry and agriculture.

And all of this will require us to move away from business as usual. For one thing, sustainability goals need to be integrated throughout organizations, rather than being siloed into a single department or team. This will ensure that every meaningful decision is made with environmental concerns in mind.

**BUSSE:** Sustainability has to be everybody's problem.

**LOVE:** But ultimately Busse says what we really need are sweeping policy changes.

**BUSSE:** I think what holds us back is a lack of incentives. Ultimately GHG reduction mostly increases costs...mostly without creating what most consumers feel is a tangible benefit.

**LOVE:** That makes it hard for companies to do the right thing, particularly in the most competitive industries.

**BUSSE:** If companies respond to climate change, only to the extent that it threatens their own profits, their own private incentives, then they're not going to be doing enough. This is what we've been doing for the last 30 or 40 years is that companies have been responding to climate change only as much as they saw it in their own incentive. And it hasn't been enough.

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Because companies don't respond very well. No human being in fact responds very well to consequences for people who are far away and in the future. We're just good at ignoring consequences that don't affect us directly.

**LOVE:** Busse says that may be changing as climate impacts worsen, and we can already see that some companies are starting to factor this in. For example, CEO of BlackRock Larry Fink wrote in his annual letter to shareholders that climate change is now a threat to the bottom line.

**BUSSE:** He says, I believe we're on the edge of a fundamental reshaping of finance. The evidence on climate risk is compelling investors to reassess core assumptions about modern finance. And he says, this is about a fiduciary concern, not a political concern.

**LOVE:** But acting with the scale and speed necessary to avoid the worst outcomes of climate change will take more than corporate buy-in by itself. Busse says that work really has to be done in the political arena where possible policy interventions might include research and development incentives to address some of the technological gaps we've covered. Or a carbon price, so that the true cost of emitting carbon can be passed along to end-users.

**BUSSE:** Because only when you get the prices that embody the choices that people have to make to actually reflect the true trade-offs, will you give people strong enough incentives to make the trade-offs that are ultimately going to be what we need for the planet.

**LOVE:** But that doesn't mean businesses can't be a part of the push to make that a reality. In fact, they can put a lot of pressure on policymakers by sending a clear and persistent message that all of us are better off if we can reduce emissions now.

**BUSSE:** Who are the political candidates that your company engages with and contributes to?

And what do you tell them? What are the trade and industry stations that you can influence? What can you do to get the message to decision makers that you think that you are better off if we limit global temperature rise. And so those decision makers should have the incentive to do the same.

**LOVE:** In that sense, Busse says the increasingly tangible impacts of climate change might actually come in handy because they provide a really strong incentive to intervene.

**BUSSE:** This is what climate change is. It's more extreme, less predictable things. And while it costs us something to deal with them, to sort of do the things we need to for climate change, it costs an awful lot, both in money and suffering and sometimes in human life to respond to flash floods and hurricanes and freezes and heat waves.

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And so hopefully people will begin to see that the local costs of climate change are big enough that there should be local support for leaders who will work also on these larger issues.

**LOVE:** Getting that right would go a long way towards avoiding some of the worst outcomes that scientists have projected for the future of the planet.

**BUSSE:** The only solution is a mix of carrots that will provide companies direct financial incentives to do not only what's good for their own narrow and immediate interests, but what's necessary for protecting the future.

[CREDITS]

**Andrew MERIWETHER:** This episode of The Insightful Leader was written by Isabel Carter and mixed by Andrew Meriwether. It was produced by Jessica Love, Fred Schmalz, Emily Stone, Maja Kos, Isabel Carter and Laura Pavin. Special thanks to Meghan Busse. Music for this episode is by Cue Shop. As a reminder, you can find us on iTunes, Google Play, or our website. If you like this show, please leave us a review or rating—that helps new listeners find us. We'll be back in a couple weeks with another episode of The Insightful Leader.