



September 20, 2019

The Honorable Frank Pallone  
Chairman  
House Committee on Energy & Commerce  
U.S. House of Representatives  
Washington, DC 20515

The Honorable Bobby Rush  
Chairman  
Subcommittee on Energy  
U.S. House of Representatives  
Washington, DC 20515

The Honorable Greg Walden  
Ranking Member  
House Committee on Energy & Commerce  
U.S. House of Representatives  
Washington, DC 20515

The Honorable Fred Upton  
Ranking Member  
Subcommittee on Energy  
U.S. House of Representatives  
Washington, DC 20515

Dear Chairman Pallone, Ranking Member Walden, Subcommittee Chairman Rush, and Subcommittee Ranking Member Upton:

Thank you for holding today's important subcommittee hearing - Building a 100 Percent Clean Economy: Solutions for the U.S. Building Sector. Climate change is one of the most important issues of our time, and the science is increasingly clear that we have a very limited amount of time to address it in a meaningful way. I wanted to provide Microsoft's perspective for the hearing record on our company's long-standing commitment to sustainability, which includes instituting a company-wide carbon tax, increasing the amount of renewable energy we use to power our operations until we get to 100%, and reducing carbon emissions by 75 percent by 2030.

But no matter how much any one company does, we need to look outside our four walls to drive the large-scale change we need. That is where technology and public policy comes in. One area where we see a great deal of potential for innovation and carbon reduction is the building sector, both in terms of operational carbon and embodied carbon (the carbon related to building construction and materials).

The built environment accounts for close to 40% of annual carbon dioxide (CO<sub>2</sub>) emissions worldwide due to the energy required to operate existing buildings, including lighting, equipment, heating and cooling. These emissions are referred to as operational carbon emissions. As the global population expands, [Architecture 2030](#) estimates that the world will need to double the amount of building floorspace. This is equivalent to building an entire New York City every month for the next 40 years. Most of the carbon footprint of these new buildings will take the form of embodied carbon — the emissions associated with building construction, including extracting, transporting, and manufacturing materials.



We believe there is a huge opportunity to significantly reduce this embodied carbon footprint and catalyze a new market for low carbon building materials and processes. Our position is informed by what we are doing with our own operations and a coalition of partners.

At Microsoft's headquarters in Redmond, Washington, we have started work to construct 17 new buildings totaling 2.5 million square feet. Operationally, we will remove fossil fuels from these new buildings and run this new addition, as well as the rest of our campus, on 100 percent carbon-free electricity. From an embodied carbon perspective, we have set a target to reduce the carbon associated with the construction materials of these new buildings by at least 15 percent versus business as usual, with a goal of reaching 30 percent.

Microsoft's Silicon Valley Campus is similarly designed with carbon in mind. This new campus design retains two of the original structures and leverages Forest Stewardship Council (FSC) certified mass timber as a structural component for the remainder of this almost 650,000 square foot campus. When the campus opens in 2020, the use of mass timber will cut our embodied carbon emissions by 50 percent.

Through these sizeable pilot projects, we aim to enable the broader construction industry to measure and manage this big piece of the built environment carbon puzzle. To assist in the process, we are partnering with the University of Washington's Carbon Leadership Forum and Skanska to develop and deploy a new digital tool to track and reduce embodied carbon. The Embodied Carbon in Construction Calculator ("EC3") is an open source, free to use tool designed for use by architects, engineers, owners, construction companies, building material suppliers and policy makers to measure, compare and reduce embodied carbon emissions from construction materials. The tool will be released to the public in November 2019. Additional background can be found at [www.carbonleadershipforum.org](http://www.carbonleadershipforum.org) and <https://buildingtransparency.org/>.

As the committee evaluates opportunities to reduce carbon emissions and encourage innovation, we hope you will include embodied carbon efforts such as the EC3 in your discussions. We applaud your focus on this issue and welcome the opportunity to discuss these efforts in more detail. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Lucas Joppa".

Dr. Lucas Joppa  
Chief Environmental Officer  
Microsoft