States, Startups, and the Climate Crisis

Climate action demands coaction between administrators and innovators

By SHARON LEWIS

Interest in cleantech and climate tech has ebbed and flowed since 2006. In its 2020 comeback, flashes of the first cleantech boom have emerged once again, marked by lavish funding rounds, a surge in the popularity of ESG initiatives, and renewed climate commitments from corporations and governments–but there is little to indicate whether this second wave is here to stay.

In 2006, venture capitalists poured US$1.75 billion into the cleantech industry, and nearly three times that amount in 2008, a report by MIT Energy Initiative suggests. By 2011, cleantech startups had ploughed through $25 billion in venture funding. And yet, more than half of over 100 energy startups launched between 2006 and 2011 failed, and over 90% of cleantech startups funded after 2007 were unable to return their initial investment capital (Quartz, MIT Energy Initiative). The allure of cleantech dissipated almost as quickly as it had arrived.

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Now, cleantech and the larger umbrella of climate technologies is picking up pace once again. Funding surged between 2013 and 2019, when climate tech startups banked $60 billion (PwC). About two-thirds of the funding went into deals valued at over $100 million. Climate tech special purpose acquisition companies (SPACs) have outperformed the overall SPAC market, posting returns of 131% as compared to 50% respectively (Climate Tech VC).

Moreover, big investors such as Softbank and Sequoia Capital are rapidly accelerating climate tech investments, and Big Tech companies and governments have reiterated their commitments to decarbonizing (MIT Technology Review). The Biden administration has taken rapid

action on climate change since the President's inauguration on January 20, including rejoining the Paris agreement and signing a series of executive orders targeted at the energy sector (BBC).

The question of the hour, however, is not how long this boom will last, but what is needed to sustain it. Climate action has been a priority for years, but efforts have been fractured, with governments, corporations, startups, non-profit bodies, and other agencies working independent of each other.

MIT Energy Initiative's 2016 report noted that cleantech startups were illiquid, expensive to scale, high-risk, low-reward, and not favored for acquisition, all of which resulted in the collapse of the earlier cleantech boom. It also highlighted an important message for up-and-coming cleantech startups: that cleantech is ill-fitted for the traditional venture capital model, and needs a "new generation of public and private support" to bring its technological potential to fruition.

In his State of the Planet speech in December 2020, United Nations Secretary General Antonio Guterres said, "We have a chance to not simply reset the world economy but to transform it," calling the challenge of climate change "an epic policy test." One of the starting points for this transformation is for policy and innovation to find an effective intersection point.

Synergy in climate action

EnergyX Solutions is a North American energy efficiency solutions startup whose software helps to optimize energy costs and improve the energy efficiency of commercial and residential properties. The company licenses its software to utilities and other clients based on three philosophies: conserving energy, empowering utilities to provide value to their customers, and empowering those customers with tools to save energy.

Tech ties it all together at EnergyX. The company focuses on retrofitting buildings with the tech to help them adopt efficient energy. Machine learning models help the company to determine which buildings would benefit the most from retrofitted improvements. The company currently works with 16-17 utility companies across the U.S. and Europe, and is growing 100% year-on-year, Co-founder and CEO Nishaant Sangaavi says.

One of EnergyX's projects is with a large, privately-owned Canadian gas utility in Canada, which has been undertaking retrofitting programs to comply with government mandates. EnergyX has been working on the utility company's portfolio of over three million buildings, many of which are low-income housing or are in rural areas, to identify which ones are suitable for deep retrofitting. It then helps the utility source contractors, leverage available incentives and rebates, and trickle down the benefits of efficient energy use to the people who live in the building.

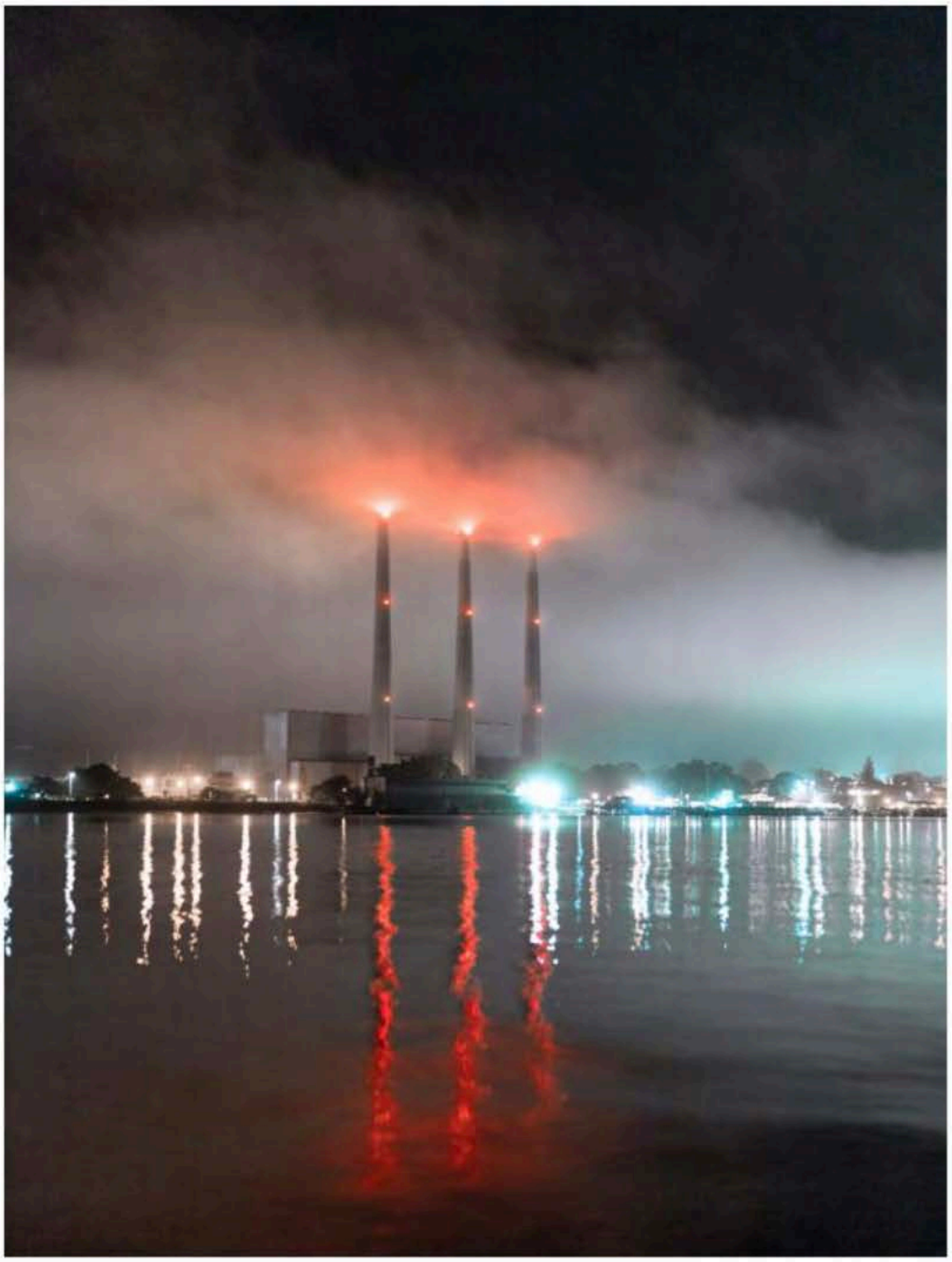
"My hope, over time as we start working in different countries and tackling different building types and energy efficiency programs, is we can be brought to the table when there are new policies and new regulations [up for discussion], so that we can talk about what we're learning, and how we've been able to scale in different places, and bring that home to that specific geography or policy," Sangaavi says.

EnergyX demonstrates how an innovative company can help bridge the distance between policy-level directives and ground-level actionables. But this relationship works two ways, with support from the government trickling down to startups as well.

The Government of Canada, for instance, has extended millions in financing to climate tech startups through various funds, a spokesperson from Innovation, Science and Economic Development (ISED) Canada said via email.

Programs such as the National Research Council's Industrial Research Assistance Program and Sustainable Development Technology Canada support early-stage cleantech innovators in Canada. Other programs like the Venture Capital Catalyst Initiative aim to attract investors to solutions that fall outside the scope of traditional initiatives. Under its strengthened climate plan, the Canadian Government has also committed CA$750 million (nearly US$590 million) over five years to support startups and help them scale.

"[Cleantech] plays a critical role in meeting Canada's 2030 emission reduction target and fulfilling Canada's commitment



to reach net-zero emissions by 2050. We cannot achieve these ambitious goals without the contributions made by innovative Canadian startups in a range of technologies," the spokesperson said.

Adding that cleantech startups were a "central part" of the Canadian government's vision, the spokesperson noted that cleantech is a massive growth segment from the standpoint of economic development and job generation for Canada. Even globally, switching to low-carbon and sustainable growth could result in economic gains of $26 trillion, and create more than 5 million new jobs by 2030 (Global Commission on the Economy and Climate).

It takes an ecosystem

Some industries, like food, are changing rapidly because of transformation from within. Others, like coal, are facing pressure from external sources. Sustainable tech in mobility and food, for instance, gained crucial traction in 2020 as electric vehicles and lab-grown meat continued to gain momentum. Changing U.S. policy regarding its participation in the Paris Climate Agreement exacerbated the furor surrounding the climate crisis.

On the opposite side of the spectrum, Quartz reports that the fossil fuel industry came under pressure in 2020, not only due to the global pandemic but also because of policy-level urgency regarding climate change. This in turn has opened a cache of new opportunities for renewable energy and energy efficiency startups.

Innovation is no silver bullet, but it is a pivotal facet of orchestrating a larger, collaborative effort toward combating climate change. To make use of innovation, however, it must first be nurtured.

"The Government of Canada recognizes that the [cleantech] sector faces challenges that are hard for startups to overcome. Projects are often capital intensive, offer returns on investment over a longer time horizon when compared to incumbent technologies, and, as a result, can be associated with higher levels of risk," ISED's spokesperson explained in their email.

Sangaavi concurs. He points out that the agility, problem-solving ability and exponential growth opportunities that startups promise are unmatched by larger organizations and corporations. At the same time, however, they need an "even playing field" to be able to compete.

It seems straightforward, but as Sangaavi explains, creating this playing field is an intricate task. There are several factors that need to be addressed, such as access to policymakers and officials, consistent climate policy over successive governments, funding and other support structures to help companies meet policy directives, and overall transparency in the dealings between governments and startups.

Sangaavi lauds the Canadian government for its support of cleantech startups, especially during the pandemic. Canada ranked among the top five countries in the 2017 Global Cleantech Innovation Index. At the same time, it also featured far below, at Rank 55, on the Climate Change Performance Index 2020, despite a strong climate policy. The Trudeau administration also faced massive backlash last year from both indigenous communities and climate activists because of a CA$6.6 billion (US$5 billion) Coastal GasLink project (The Guardian).

If such contradictions exist in a country known for sweeping natural vistas and progressive politics, it stands to reason that these disparities are widespread across the globe. Policy and technology–as the earlier cleantech boom and bust showed–are both inadequate solutions for climate change when applied independently. The resolution of the climate crisis lies within a Byzantine web of networks and decisions, one that can only be untangled by cohesive, collaborative action between governments and startups.

Due to their disruptive technologies and ability to rapidly scale solutions, startups offer enormous potential for tackling climate change–but the strings are ultimately still held by the government. By meeting in the middle and putting forth a joint effort, these two forces can collaboratively redraw the next frontier of climate tech.

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