TESTIMONY OF DAWN LIPPERT, CEO OF ELEMENTAL EXCELERATOR

BEFORE THE SUBCOMMITTEE ON COMMUNICATIONS, TECHNOLOGY, INNOVATION AND THE INTERNET

“BETTING ON THE REST: EXPANDING AMERICAN ENTREPRENEURSHIP OUTSIDE TRADITIONAL HUBS”

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Hello, Chairman Thune, Ranking Member Schatz, Senator Klobuchar and members of the Committee. Thank you so much for the opportunity to testify before you today. My name is Dawn Lippert and I am the CEO of Elemental Excelerator.

About Elemental Excelerator

Elemental Excelerator is a non-profit growth-stage accelerator program headquartered in Honolulu, Hawaii and East Palo Alto, California. We accelerate solutions to climate change and deploy them in communities that need them the most. Each year, we find 15-20 companies that best fit our mission and fund each company up to $1 million to improve systems that impact people's lives through project deployment. We have focused on funding projects in three locations that will be central to addressing climate change: Hawai'i, California's frontline communities, and the Asia Pacific region. We are now expanding this approach across the U.S. and globally. To date, we have reviewed over 5,000 new technologies, awarded over $40 million to over 115 companies, and have deployed 70 projects in energy, mobility, agriculture, water, and the circular economy.

In 2008, the Hawaii Clean Energy Initiative (HCEI) was enacted by the State of Hawaii and U.S. Department of Energy and funding was set aside for innovation. Stakeholders realized that in order to reach those energy goals and transform an economy dependent on oil, we needed innovative solutions. We initially modeled our program after ARPA-E, where I staffed the very first call for technologies. In our first couple of years, we saw that startups needed much more than funding to succeed, and became interested in applying the new "accelerator" thinking to climate startups. Back in the early 2010s, there were tech accelerators helping the Airbnbs and Instacarts of the world create new markets. But none of these accelerators were supporting hardware or climate technology.

We saw that as an opportunity to build one. We zeroed in on growth-stage companies who were ready to deploy their technology for two reasons: 1) there was a gap in available project funding to bring the innovations being developed in a lab into the real

world, and 2) we saw the opportunity for the most learning and progress in bringing together technology (startups), policy (government), and markets (customers) to advance innovation. That led to what is now Elemental Excelerator.

Elemental not only invests in startups with the potential to address climate change, but we also co-fund projects alongside the startups we invest in. We'd like to share two examples of projects we've supported:

- CarbonCure Technologies collaborated with HDOT and Hawaii concrete producers to install its retrofit technology that chemically mineralizes waste CO2 during the concrete manufacturing process to make greener and stronger concrete. The carbon-infused concrete from those producers was used in a local infrastructure project saving 1,500 lbs. of carbon dioxide, offsetting the carbon dioxide emissions from 1,600 miles of highway driving. Following this project, in April 2019, Honolulu, Hawaii became the first municipality to pass a resolution that “requests the city administration to consider using carbon dioxide mineralization concrete for all future city infrastructure projects utilizing concrete.”
- SOURCE (formerly Zero Mass Water) worked with an indigenous majority-owned and -managed business called Waddi Springs to prove a new community scale water purchase agreement in drought-ridden Queensland, Australia. With our funding, SOURCE was able to deploy 600 hydropanels in the span of 4 months where a conventional water treatment plant would've taken at least a decade. This project has the capacity to produce 119,000 gallons of drinking water and displace approximately 748,000 plastic water bottles per year and also created new workforce opportunities for native Aboriginals in the area. SOURCE is now pursuing a similar project in the Philippines armed with the learnings from their project and partnered with an Elemental innovation partner.

Over the past 10 years, we have raised over $95M for Elemental to invest in startups and been able to create an innovation hub in Hawaii. The portfolio supports hundreds of jobs and high-wage opportunities for youth, veterans, and others who want to work in innovation. We have worked with some of the world's largest utilities and corporations, as well as public-sector partners like the Navy and social change organizations like Emerson Collective to commercialize these world-changing technologies. In 2017, we launched a cohort of local businesses that are committed to innovation throughout Hawaii. These are groups interested in the insights we glean from deploying transformative projects in our place, and have dedicated their time and energy to building an innovation ecosystem in Hawaii with us. And our model is not just unique to Hawaii. After a successful partnership in Hawaii with Elemental Excelerator, the Office of Naval Research (ONR) was able to replicate their successes by funding Launch

Alaska headquartered in Anchorage, Alaska. We have proven that our platform can be replicated anywhere and that innovation does not have to emanate from big tech cities.

The Energy and Climate Technology Market

The energy and climate technology market is the strongest it has ever been with climate tech investment growing 3 times faster than investments in artificial intelligence and 5 times faster than the average growth of general venture capital. In 2019, over $13B was invested into climate technology and we expect to exceed that number in 2020 even with the impacts of COVID-19. This figure is more than double what it was in 2016. In 2020 alone, more than $4B of new funds have been formed for the climate venture capital market and we expect this growth to accelerate in 2021. Twelve years ago, John Doerr, the chairman of Kleiner Perkins, testified before this very body called green technology the "mother of all markets." This is even more true now than it was then. There are now over 1000 corporations who have pledged to reduce their emissions with IPCC recommendations and the pace of new corporations making commitments has accelerated in the past three years. Energy is one of the biggest markets in the world, and decarbonization will require over $2 trillion a year of investment according to the Intergovernmental Panel on Climate Change (IPCC). This is a marker of real opportunity for investors and a space for startups to enter the market.

As startups grow, they create good jobs such as installing solar and energy efficiency, working on transportation electrification, and creating work for law firms, accountants, and a host of other jobs for the local economy. In Hawaii alone, jobs in solar installation, energy efficiency, and renewable fuel production totaled over 15,000 in 2016, paying an average of $3 to $7/hour higher than the state's median wage. Prior to the pandemic, the clean energy sector was one of the fastest growing sectors in the United States expecting to add 175,000 jobs in 2020. Most of these jobs are geographically specific, and centered in rural and suburban areas rather than just the major tech hubs. Investing in energy efficiency, clean energy deployment, and other decarbonization technology creates good jobs and new economic opportunities in places that need it the most.

COVID-19 & Geographic Diversity

In September of 2020, about 14% of the nation's energy workers were still unable to return to work. It is imperative that we support job growth beyond the 175,000 that was expected in 2020 to support the economic recovery from the pandemic.

Technology, and specifically climate technology, provide a powerful opportunity for job creation outside of typical tech hubs. The pandemic has created an opening for many tech companies to go fully remote and normalize business over email and video calls. By virtually expanding their geographic footprints, firms can widen their talent pool and

recruit from a variety of schools, regions, and backgrounds to create a diverse and inclusive workplace.

Embracing remote work helps to level the playing field, shifting the tech industry's concentration of talent that was deemed a necessary condition for success. The pandemic has accelerated the migration out of tech clusters into secondary cities as the transition to remote work has made physical proximity irrelevant. An investment in federal funding to support new hubs could potentially precipitate a more healthy spread of tech firms across the nation. Federal innovation money should be spread out more broadly to these cities and across institutions from local universities to private sector companies and local government in order to produce new pools of talent and opportunity. We have seen this firsthand in Hawaii, with new talent coming to live here and connecting to local business and education networks.

The pandemic has brought many changes to our lives, but also brings new opportunities to improve our current systems. Throughout the pandemic, we have seen an incredible resilience of the entrepreneurial spirit to tackle today's most urgent challenges. For example, we have a local startup named Farm Link Hawaii. Farm Link Hawaii operates an onsite logistics platform that connects local farmers to residents to deliver thousands of pounds of local produce each week. In the first few weeks of the pandemic, they rapidly pivot their services to home delivery and modified their service to support thousands of residents and local farms. Their online consumer marketplace soared past their maximum capacity, and they quickly had to find a larger warehouse for their operations. Farm Link Hawaii has risen to this challenge, and their journey has been supported by the entrepreneurial ecosystem every step of the way.

Beyond Hawaii, Elemental's portfolio company Goodr is using its food chain data tracking software to bring meals to thousands of students and seniors in Atlanta. And an Elemental portfolio company in the mobility sector, Numina, has been using its data platform to help cities across the country make decisions to help reduce the spread of COVID-19 in New York City. Especially in times of crisis, an entrepreneurial mindset and ability to rapidly prototype solutions are invaluable assets for building community resilience. Entrepreneurs are an important part of our communities and will be key to rebuilding our economy.

The Importance of Federal Funding and Programs & Their Role in Supporting Regional Innovation Hubs

The U.S. federal government has a pivotal role to play in supporting regional innovation hubs that challenge and advancing clean technologies that will enhance U.S. competitiveness. The unique capacity of the federal government to invest in long-term

R&D is critical for the flow of new ideas and discoveries that fuel our economy. While private sector R&D investments through VC have increased, the government is often the first "investor", providing early capital for new technology startups.

As the market takes off, it is imperative that the economic and entrepreneurial opportunity extend beyond our nation's traditional technology hubs. Startups need more than funding to succeed and require a strong support ecosystem around them. The Elemental Excelerator platform has proven that it is possible to build strong technology hubs outside of the traditional megacities - especially when they are sector-based and focus on a region's core competitive advantages. Based on our experience meeting 5,000 early stage startups and working closely with over 100 companies in our portfolio, we see three key roles for the federal government in expanding entrepreneurship ecosystems:

1. Seeding regional innovation ecosystems - More than 80% of our portfolio startups have been awarded federal grant funding that seeded their growth. Programs like ARPA-E have an outsized benefit in underserved markets like Hawaii, because they are technical competitions that can deploy funding to markets that don't have robust VC funding available. At Elemental, every public sector dollar that we have invested into startups has led to 40 more dollars in private capital.

While organizations have placed emphasis on the federal government's support of US DOE National Laboratories and ARPA-E, it is also critical to find ways to bridge the gap for scientists and entrepreneurs to scale startups - which is often done with support of trusted intermediaries such as incubators and accelerators that have a track record of success with commercialization. This is becoming increasingly important in the pilot and demonstration stage for startups when they are not ready for traditional VC and do not have a network of trusted partners. Finding new ways for the federal government to act swiftly to support those companies not supported by traditional funding networks and local and state partners is key to growing innovation hubs. Ultimately, these investments will serve to accelerate the transition of government funded research from laboratory to marketplace.

2. Ensuring that federal policy supports innovation - Policy sets the stage and dictates the rules for the markets that our portfolio companies work in: energy, water, agriculture, and mobility.

In aviation, our portfolio company Ampaire recently completed the longest route ever flown by an electrified aircraft. The demonstration Elemental is funding makes Ampaire the first to fly a hybrid electric aircraft on an operational route - between Kahului and

Hana, Maui. These electric aircraft can cut fuel costs by more than half. Speeding up this kind of innovation will help small airlines stay in business in a challenging economic environment, cutting the cost of training pilots as well as the cost of everyday operations. The huge amount of innovation we've seen in airplanes over the last four years was unlocked by updated FAA regulations. And every time we see supportive policy enacted, it unleashes an enormous wave of private capital. Since 2015, 10 of the leading electric aviation startups have raised more than $1.2 billion.

In energy, federal government permitting is a huge factor in startup capability for growth. One of our portfolio companies, geothermal innovator Fervo, had a project delayed more than two years by permitting processes at the Bureau of Land Management. For early stage companies that typically have one to three years of cash runway in the bank, long permitting processes threaten a company's ability to develop new technology and get projects up and running. This project is also located in a rural area that will see significant benefits from the jobs and economic value created.

As an example in mobility, a recent study from the Transportation Electrification Partnership (TEP) found that building out our nation's zero emissions transportation infrastructure can create 1.4 million jobs. The recommendations for a $1.5 billion stimulus proposal estimates 2.3 million jobs created across the U.S. and across sectors beyond just technology. Another key opportunity is in the electrification of transportation. There are currently 1.2 billion passenger vehicles on the road and yet only 1% of those are electric vehicles. But we know that progress is possible, and actually inevitable. Globally, 30% of the buses in the world are electric, with the lion's share found in China. We're optimistic about the U.S.'s ability to catch up as we see companies like Tesla with a market capitalization more than 10x that of General Motors.

Also in mobility, we believe measures such as the Accessibility Performance Measure for the U.S. Dept. of Transportation (DOT) will change the allocation of DOT funding to focus on what is important - getting people where they need to go - rather than focusing on highway speeds. These kinds of policy signals are what entrepreneurs look for, and unlock waves of new startups and innovations when adopted.

3. Buying climate technology innovation - Through the Department of Defense (DOD) and other government agencies, the government is a key customer in many of our country's smaller cities and rural areas. By being a customer and user of clean energy innovation, the public sector is also acting as a partner, advocate, and supporter of technology companies and creating good-paying jobs across these geographies. For example, our portfolio company CarbonCure has proven that we can sequester carbon dioxide in concrete and that it doesn't cost more. Each mile of concrete pavement has

the potential to reduce CO2 emissions by 500,000 pounds, which is equivalent to driving from San Francisco to Washington D.C. about 200 times. As the U.S. invests in new infrastructure across the nation, we can specify carbon-infused concrete - which will help us meet our climate goals without needing to spend more.

On a global scale, climate technology is a battleground of American competitiveness. In the last five years, $56B has been invested in clean technology through venture capital. 45% of that was in North America and another 45% was from Asia, with China gaining leadership over the US. There has also been more than $300 billion in project finance annually for the last 5 years with China leading investment with around $100 billion per year, about a third of global financing. Now is the time to invest in American entrepreneurship and competitiveness. The stage is set for regional innovation hubs to thrive. Strategic government support can create even more opportunities.

Finally, to close, we'd like to share the following suggestions from a coalition of incubators and accelerators across the nation - LA Cleantech Incubator (LACI), New Energy Nexus, Elemental Excelerator, VertueLab (formerly Oregon BEST), Greentown Labs, IN2, NYU Urban Future Lab, Clean Energy Trust, Powerhouse, BRITE Energy, Prospect Silicon Valley, Third Derivative, Launch Alaska, Activate, Forge, Tennessee Advanced Energy Business Council (TAEBC), Austin Technology Incubator (ATI), Cleantech Open (CTO).

The below provides some key actions that we believe federal government should consider:

1. Support regional clusters of energy innovation including an emphasis on disadvantaged communities and underrepresented entrepreneurs.
    a. Create a $50M National Innovation Pilot Fund in the U.S. Department of Energy for cleantech solutions in disadvantaged communities.
    b. Enhance and accelerate a National Initiative to support regional cleantech innovation ecosystem partners with $25M across regional ecosystems.
    c. Utilize the Small Business Administration (SBA)'s Small Business Investment Company (SBIC) $4B in annual debt authority to support regional incubator investment funds.
2. Create a Cleantech Innovation Task Force ensuring federal government programs align with and support early stage innovation and needs of diverse entrepreneurs.
    a. For task force and launch
    b. Review and evaluate existing programs as well as new programs
    c. Within 180 days, come back with set of actions

3. Dedicate funding to the innovation ecosystem via SBA, Economic Development Administration (EDA), and DOE for cleantech incubators, startups, small businesses, job training and pilots to accelerate small business innovation in response to the economic impact of COVID
4. Dedicate $2.5 billion to the early stage clean energy innovation ecosystem (direct funding to startups as well as through intermediary organizations) to do the following:
    a. Enable funding especially for pilots and demonstrations
    b. Emergency loans and grants
    c. Targeted funding for diverse founders
    d. Operational funding
    e. Job training and workforce trades and internships
5. Dedicated focused fund on a major climate challenge transportation-energy nexus. To accelerate zero emissions mobility via the Department of Transportation, DOE provides funding for national and regional infrastructure, workforce development and technology advancement.
    a. $25 billion investment in the assembly and adoption of electric and zero emissions vehicles along with supply chain development.
    b. $85 billon for electric vehicle charging and related infrastructure investment
    c. $25 billion for zero emissions public transit, active transit and safe streets
    d. $12.5 billion for workforce development, safety standards and job training
    e. $2.5 billion in innovation ecosystem for cleantech startups and related small businesses, prioritizing those created by underrepresented founders.

Thank you so much for the opportunity to testify on this important topic.

Sincerely,

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CEO, Elemental Excelerator

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