VENKAT SRINIVASAN: To some online remarks. This is going to be from Dr. Geri Richmond, who you heard about. She’s the Under Secretary of the Office of Science Innovation of the US Department of Energy. She had a last minute conflict, was unable to come here, so she pre-recorded her comments. For those who are watching virtually, you might see a bit of a lag in the audio. Hopefully that won’t happen, but if it does, I don't think it’s a big deal. But if you want to afterwards, all of these presentations will be shared at the ESGC Summit website so you can download it there. With that, let us go to remarks from Dr. Richmond.

GERI RICHMOND: - to be with you virtually. I’m honored to serve as Secretary Granholm Under Secretary for Science and Innovation in overseeing a broad portfolio of fundamental and applied research, along with fourteen incredible DOE national laboratories and their 28 user facilities. Now my experience over many years of scientific research is that we can have all kinds of fancy tools and toys to make the science go, but it will go nowhere without people, scientists and engineers like you all with a passion for discovery and problem solving.

And you know as well as I that working in an environment that values what you do, whether it be from the leadership, the institution or your co-workers, is a big motivator to want to get up and go to work in the morning, in person or virtually, or to be creative and productive. We also have to make sure that our scientists and engineers feel freer than in the past to get out of traditional disciplinary swim lanes and work across the RDD&D spectrum.

Now I want to assure you that the leadership of DOE and I are fully behind you to achieve the ambitious and realizable climate goals that this has administration has set out for us, from our discovery science, developing solutions, and then deploying them, to truly make a difference in the world, and saving the planet from this climate crisis and advancing the quality of science and engineering that is the hallmark of this country.

Now the national labs are central to this effort. Argonne has a long history of forging partnerships with industry, academia and other national labs, to help translate its research into real world solutions. With expert work on batteries for transportation, grid storage and other commercial uses, you’re building on that proud tradition, and we need you. We need your expertise more than ever as we work across DOE, the administration and the country to tackle the existential challenge of climate change.

Now in S4 land we have launched the Energy Earth Shots Initiative, which is an all hands on deck effort to accomplish the discovery, research and development and demonstration we know we still need within a decade to reach the United States’ goal of a net zero carbon economy by 2050. These projects shoot from the very basic research to the applied and beyond. And our goal is to challenge the full RDD&D ecosystem within and outside the department to address the hardest scientific and technical challenges that currently limit our ability to develop more effective, less expensive, longer lasting solutions in each of these areas.

Now six earth shots have been announced thus far with clear metrics in mind. The hydrogen shot set an ambitious, yet achievable, cost target to speed up innovation and spur demand for clean hydrogen while reduce the production cost by 80 percent or $1 dollar per 1 kilogram clean hydrogen within one decade. And the carbon negative shot, it will develop durable and scalable carbon dioxide removal from negative emissions under $100 dollars per net metric ton of carbon dioxide equivalents within a decade. And we’ve had three new energy shot shots launched just this month.

DOE’s enhanced geothermal shot will slash the cost of geothermal energy 90 percent by 2035. The floating offshore wind shot will reduce the cost of floating offshore wind electricity in deep waters by more than 70 percent in 2035. And the industrial heat shot will develop cost competitive industrial heat decarbonization technologies and at least 85 percent lower greenhouse gas emission than today’s natural gas by 2035. But the reason we’re here today is the long duration storage shot, which will seek to achieve an affordable energy storage device that lasts ten hours or longer. And this is essential to making the grid more reliable, getting more systems connected to clean power and realizing our net zero future.

Now DOE’s long duration storage shot aims to cut long duration energy storage costs by 90 percent from our 2020 lithium ion battery baseline within the decade. And the effort will consider all types of technologies, whether the electro-chemical, mechanical, thermal, chemical carriers or any combination with the potential to meet the necessary duration and cost targets for grid flexibility. And over the next two days you all will help DOE to map out a path to achieve the long duration storage shot goals as part of the energy storage grand challenge.

You’ll learn about storage innovations 2030 and this effort to compile a specific actionable partnership map to develop, scale and deploy, the most promising technologies that will meet the 2030 long duration storage shot goal. And you’ll hear more about a $300,000 dollar prize opportunity, a component of storage innovations 2030 designed to spotlight some of the most innovative technology candidates for long duration applications.

And as part of the breakout sessions and the technology pitch sessions tomorrow, you’ll participate in this summit and over the next several months this, your participation, will be important and instrumental to the success of storage programs at DOE. Now you’ll also hear from the senior leaders in several DOE offices with energy storage work on how DOE is starting these partnerships from within.

So to conclude, we see these earth shot efforts across the S4 offices will connect directly with the new DOE deployment efforts led by the new Under Secretary of Infrastructure, Kathleen Hogan. It is indeed a new day in DOE in its reorganization, as we’re seamless RDD&D ecosystem, which is necessary for the United States to meet its climate goals. The stakes have never been higher and there’s never been a better time to be engaged with Argonne, with our national labs, and DOE. So thank you so much for your interest and good luck.

VENKAT SRINIVASAN: That was very inspirational just because you could see how important the earth shots are.

JERI RICHMOND: Great to be with you virtually. I’m honored to be –

VENKAT SRINIVASAN: So inspirational, you get a re-do of the – we were saying that there are various things that happen when we do online hybrid events. I’m learning that also, I think. But again, just to repeat, I think the earth shots have been an inspiration for all of us. Obviously if you’re in the storage world, you’re looking deeply at the storage shot, but I know that the other communities, the hydrogen folks, the geothermal folks, have been kind of looking at their specific aspects and really it’s fantastic of the department for doing this.

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