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Commonwealth Fusion Systems Awarded $3.7 Million from ARPA-E to Accelerate Commercial Fusion Energy

Cambridge, MA – April 7, 2020 – Commonwealth Fusion Systems (CFS), a startup commercializing fusion energy, today announced it was awarded $3.7 million in funding from the U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E). $2.39 million of this funding will be used to design and prototype a fast-ramping, high-temperature-superconducting (HTS) central solenoid for use in commercial fusion tokamak-based power

plants. CFS is the largest private award recipient from ARPA-E's Breakthroughs Enabling Thermonuclear-fusion Energy (BETHE) program, which works to develop timely, commercially viable fusion energy technology, with the goal of increasing the number and performance levels of lower-cost fusion concepts.

"This award is an important step to enable the U.S. to pivot toward nearer term, simpler, compact fusion systems as we work to get commercial fusion energy on the grid in time to combat climate change," said CFS CEO Bob Mumgaard. "Public private partnerships like these will allow the private fusion industry to leverage the established science done in the labs and enabled by the Department of Energy to get a product to market more efficiently."

The fast-ramping solenoid that CFS will develop under the ARPA-E BETHE program will enable more compact, simpler tokamaks by eliminating the need for costly and unproven current drive technologies.

These new partnerships will add to CFS' existing programs with the National Labs, which it has funded both privately and through DOE's recently launched INFUSE program. Brookhaven National Laboratory and Lawrence Berkeley National Laboratory will participate in the CFS-led research program.

CFS will also be a sub-recipient in a $5M ARPA-E award won by the University of Wisconsin-Madison. The Wisconsin High-field Axisymmetric Mirror (WHAM) project will re-evaluate a previously studied but shelved fusion concept called the mirror. As a partner in this project, CFS will supply high-field HTS magnets

to the WHAM program to better clamp the ends of the mirror and help it confine hotter plasmas than previously achieved. This program explores a potentially transformative fusion power plant concept and will also enable a compact neutron source that could help prototype blankets and materials for future fusion power plant development by CFS and others.

"These awards are indications of the transformative nature of HTS magnets for fusion, enabling new approaches, and drastically smaller and simpler fusion systems," said Mumgaard. This HTS technology has been a key component in the U.S. program to develop nearer term innovative fusion technologies as recently identified by the U.S. National Fusion community, the National Academy of Sciences, and the Fusion Energy Sciences Advisory Committee. This faster path to commercial fusion will be directly supported by the novel magnet and neutron-source technologies developed under these new ARPA-E programs.

CFS is making available its novel magnet technologies, including those it will develop under this new ARPA-E award, to the broader market. "CFS is building a suite of HTS magnet technology that can be applied to a number of applications, including developing fusion concepts and working with government programs to enable their concepts with our commercial HTS magnet technologies," explained Mumgaard.

About CFS

Commonwealth Fusion Systems (CFS) is on track to bring fusion energy technology to market. CFS was spun out of MIT and is collaborating with MIT's Plasma Science and Fusion Center to leverage decades of research combined with the innovation and speed of the private sector. CFS has assembled a world-class team working to design and build fusion machines that will provide limitless, clean, fusion energy to combat climate change. Supported by the world's leading investors in breakthrough energy technologies, this CFS team is uniquely positioned to deliver the fastest path to commercial fusion energy.

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