



UNIVERSITY OF MARYLAND

GLENN L. MARTIN INSTITUTE OF TECHNOLOGY
A. JAMES CLARK SCHOOL OF ENGINEERING

Maryland Energy Innovation Institute

Eric D. Wachsmann, Director

Building 089
College Park, Maryland 20742-2115
301.405.8193 TEL 301.314.2029 FAX
ewach@umd.edu
www.energy.umd.edu

Maryland Energy Innovation Institute (MEI²) was created in 2017 through an Economic Development Act (HB410/SB313) of the Maryland General Assembly. MEI² works in partnership with academic institutions across the state to help attract federal and private support of Maryland energy research and innovation, with the specific economic development goal of commercialize emerging and transformative advanced clean energy technologies in Maryland.

Bill Number: HB 1426

Title: Economic Development – Advanced Clean Energy and Clean Energy Innovation Investments and Initiatives

Hearing Dates: March 9, 2020

Committee: House Economic Matters Committee

Recommendation: FAVORABLE REPORT

Maryland universities are established leaders in energy research and innovation. The University of Maryland, College Park, leads multiple large \geq \$10M federally (e.g., DOE Energy Frontier Research Center - efrc.umd.edu and DOD Center for Research on Extreme Batteries - creb.umd.edu) and industry (e.g., Center for Environmental Energy Engineering - cee.umd.edu) supported energy research centers, and leads the nation in DOE Advanced Research Projects Agency – Energy (ARPA-E - arpa-e.energy.gov) awards specifically for energy innovation and commercialization.

MEI² is the only entity focused on translating Maryland’s energy research leadership to commercial success. Maryland spent \$400M/year on average for last 5 years on EmPOWER and Strategic Energy Investment Fund, but other than MEI² none of it was focused to support commercial development of in-state clean energy technologies. Compared to rest of nation, Maryland is 50th (last) in diversity of State R&D spending with 85% of it going to health-related R&D and <1% going to energy.

MEI² leverages small Maryland investment to increase federal and private investment to grow the advanced energy economy in the State. To date has leveraged small State investment (MEI² portion since inception is 1.8M) to obtain over \$40M in federal funding, a factor of >20X return to the Maryland economy. In addition, has accelerated innovation company progress toward commercial success, a couple of examples being: (i) Mobile Comfort’s \$300K seed grant enabled them to translate their high efficiency air conditioning technology into the prototype necessary for them to attract private funding and launch a worldwide consumer product; (ii) Ion Storage Systems leveraged their \$100K seed grant for packaging of their advanced battery technology, to obtain \$8M in private VC funding, enabling them to move into the Maryland Energy Incubator, set up pilot-line manufacturing, and hire 15 employees.

Since inception, MEI² has:

- Leveraged small State investment to obtain over \$40M in federal funding including more DOE ARPA-E awards than any other university in the nation.
- Provided annual innovation seed grants to assist spin-off companies translate university research to commercially relevant products. In the initial two years 8 seed grants were awarded to University of Maryland College Park (UMCP), University of Maryland Baltimore County (UMBC), and Johns Hopkins University (JHU), and have resulted in follow on private investment.
- Demand for these seed grants has grown rapidly with 18 proposals from UMCP, UMBC, JHU, JHU-APL, University of Maryland Eastern Shore, University of Baltimore, and Morgan State for this year's funding round, far exceeding current budget to support.
- Successfully helped launch multiple companies in State attracting private investment and creating jobs.

MEI² is providing a worthwhile return on investment. To date MEI² has assisted in obtaining a 20 to 1 federal to state leveraging of its funding and assisted multiple companies in obtaining private capital to commercialize their energy technologies, and in so doing achieve its statute directed mission.

For this success to continue MEI² must have a stable, definitive commitment of revenue to help support its operation. This legislation calls for such an investment which will allow MEI² to continue to be impactful.

House Bill 1426 will:

- Broaden the definition clean energy to include advanced energy and grid modernization technologies, and
- Provide \$2.1 M to fund the energy technology research and innovation activities of the Maryland Energy Innovation Institute and the capitalization and deployment work of the Maryland Clean Energy Center.

On behalf of the Maryland Energy Innovation Institute (MEI²) and the University of Maryland (UMD), I **respectfully request that the committee members give a FAVORABLE REPORT to HB 1426**, and continue to fund the worthy enterprise MEI² has proven to be for our state.



Eric D. Wachsman, Ph.D.
Director, Maryland Energy Innovation Institute
William L. Creutz Centennial Chair in Energy Research
University of Maryland