



# H.R. 6291, the Microelectronics Research for Energy Innovation Act

*part of the America COMPETES Act*

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The *Microelectronics Research for Energy Innovation Act* (Micro Act) directs the Secretary of Energy to carry out a crosscutting initiative in microelectronics research and development (R&D). This would include research activities aimed at driving progress in the scientific areas underpinning microelectronics, as well as a mechanism for supporting large-scale efforts focused on addressing specific challenges.

The impetus for this legislation lays in the need to authorize the Department of Energy's (DOE) role in the broader microelectronics R&D enterprise. DOE's unique technical expertise and user facilities, as well as the external research community that engages regularly with the Department, render it well-positioned to accelerate transformational research in microelectronics that are essential to meeting future mission needs and bolstering the competitiveness of the domestic microelectronics industry. Research supported under the new initiative will leverage the Department's assets to focus on a broad array of topics including materials science, plasma sciences, fabrication, device architecture, energy efficient computing, and grid optimization, among many others.

The centerpiece of this initiative will be the Microelectronics Science Research Centers (MSRCs). These large-scale centers will conduct mission-driven research to address foundational challenges in the design, development, and fabrication of microelectronics. Like the National Quantum Information Science Research Centers authorized under the *National Quantum Initiative Act*, the MSRCs will be multi-institutional endeavors involving National Laboratories, universities, and private sector partners, and will seek to advance high-impact research, facilitate technology transfer, and contribute to the future microelectronics workforce.

The Micro Act will complement the *Creating Helpful Incentives to Produce Semiconductors Act* (CHIPS Act). The CHIPS Act, which was enacted into law in late 2020, includes authorization of a new National Semiconductor Technology Center (NSTC) focused on research and prototyping of advanced semiconductor concepts in partnership with the private sector. The MSRCs mentioned above would accelerate early-stage research that could then feed into the NSTC, which would focus on more downstream technology development. The Micro Act includes language directing DOE to ensure that the MSRCs are coordinated with the NSTC, as well as other microelectronics research activities occurring both within and outside of the Federal Government, to prevent duplication of activities.