Since 2010, semiconductor energy use has doubled every three years, and by 2030, semiconductors could consume nearly 20% of planetary energy production. Thus, innovation in semiconductor energy efficiency is essential to help grow the economy and tackle the climate crisis. The Energy Efficiency Scaling for Two Decades (EES2) initiative brings together technical experts in semiconductor R&D, design, and manufacturing to identify pathways to increase the energy efficiency of semiconductors by at least 1,000x in the next 20 years.

This public-private collaboration will ultimately result in a roadmap, which will be published in 2023, providing concrete metrics and recommendations to guide RDD&D within the semiconductor industry for the purpose of increasing energy efficiency. Related goals include:

**ECONOMIC COMPETITIVENESS**

The EES2 roadmap will help to strengthen semiconductor manufacturing within the U.S., as well as domestic clean energy supply chains.

**NET-ZERO EMISSIONS**

Curbing the semiconductor industry's energy consumption is critical to achieving a net-zero emissions economy by 2050.

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**BACKGROUND**

- **September 14, 2022:** EES2 Meeting #1
- **September 20, 2022:** EES2 Pledge Signing Event
- **January 12, 2023:** EES2 Meeting #2
- **February 15-16, 2023:** EES2 Meeting #3
- **March 2023:** EES2 Meeting #4
- **April 26-27, 2023:** EES2 Meeting #5 (Challenges and Workforce Confirmation)
- **May 23, 2023:** EES2 Meeting #6 (R&D Solution Pathways)
- **June 2023:** EES2 Meeting #7
- **July 2023:** EES2 Meeting #8
- **August 16-17, 2023:** EES2 Meeting #9 (Roadmap Planning)

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**YEAR IN REVIEW**

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PLEDGE SIGNERS

Original pledge signer bios can be found here.

- 3DET
- Aligned Carbon
- AMD
- America’s Frontier Fund
- ANL
- Applied Materials
- ARM
- BRDG bridge to connect
- Brookhaven National Laboratory
- Cadence
- Carbice
- Carbon Technology, Inc.
- Dedalo AI
- DOE
- Duke
- Energetics, Inc.
- Fermilab
- GE Vernova
- Hasso Platner Institute
- Hyperion
- IBM
- Infineon
- Intel
- Iris Light Technologies
- LBNL
- Liqid
- LLNL
- Metis Microsystems
- Micron
- Microsoft
- NanoSonic
- Nantero
- Nhanced
- NREL
- ORNL
- Paragraf
- PNNL
- PseudolithIC
- Quantum Silicon
- RMD
- Sandia National Laboratories
- SAP
- Semi
- Siemens
- SixLine Semiconductor
- SLAC
- SRC
- Stony Brook University
- Synopsys
- TechSearch International
- Tiptek
- UC Boulder
- UNL
- UT Dallas
- UTSA
- Zyvex Labs