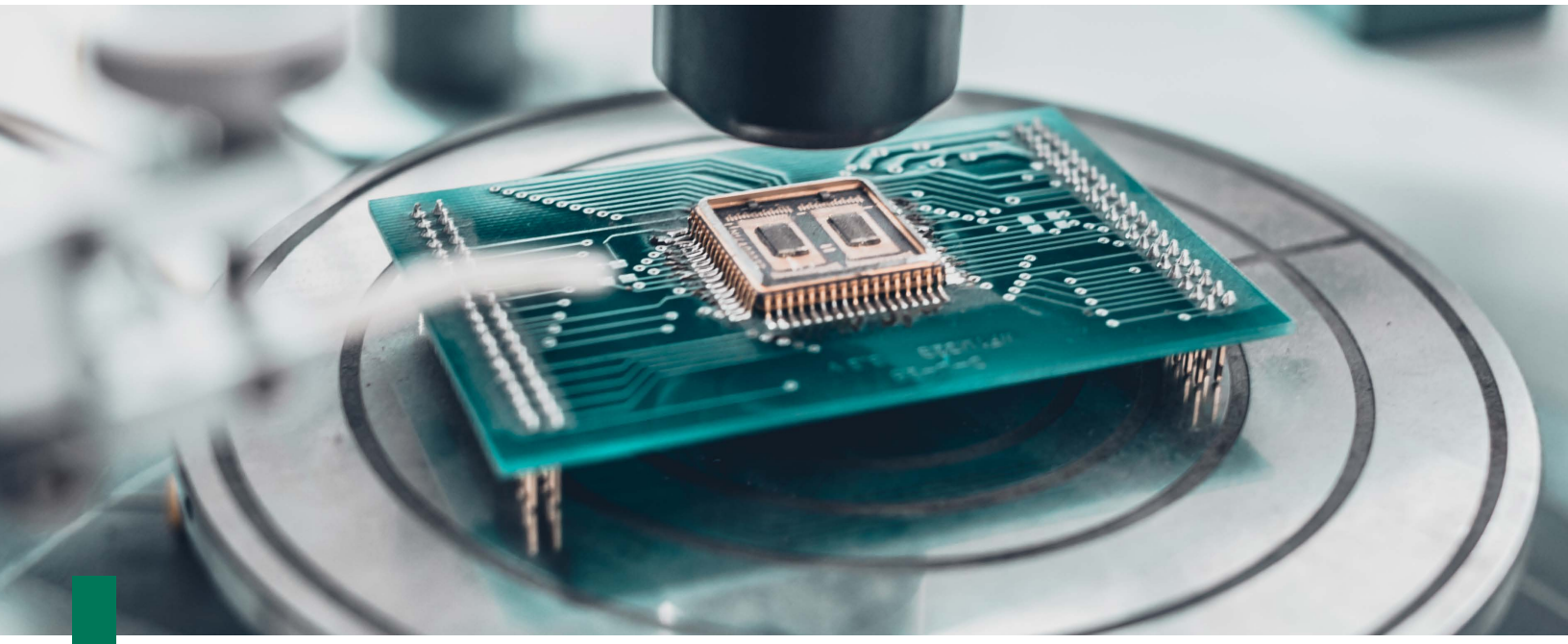
Meeting environmental requirements for the CHIPS and Science Act grant program



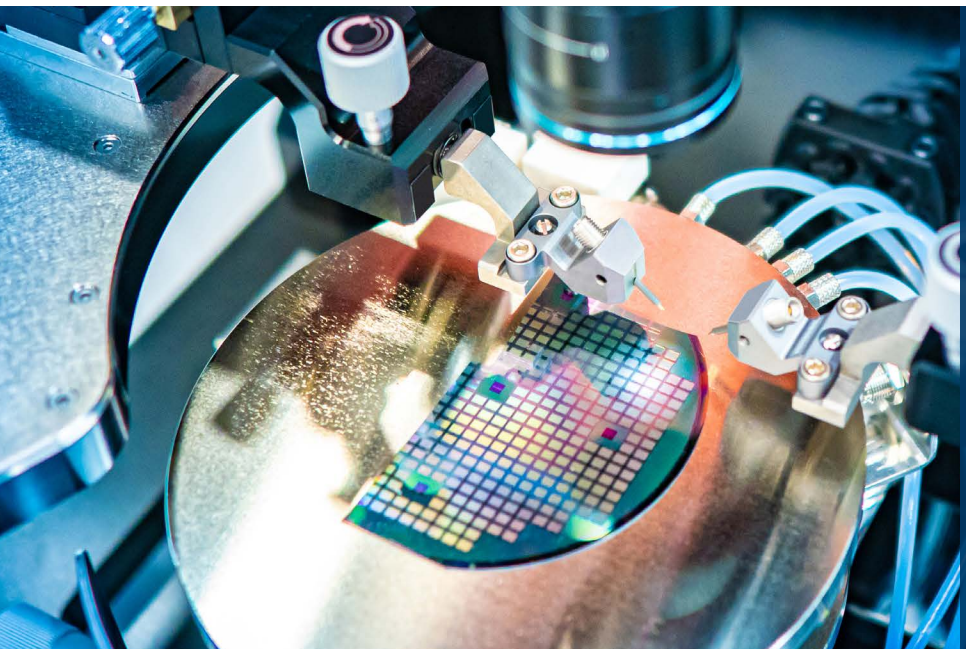
Now is the time to submit applications for the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act Grant Program to construct, expand, or modernize commercial facilities for the front- and back-end fabrication of leading-edge, current-generation, and mature-node semiconductors.

Background

The CHIPS and Science Act (CHIPS) is a U.S. government initiative to boost domestic semiconductor manufacturing, research, and development; advance U.S. economic and national security; and preserve our global economic competitiveness. CHIPS is part of a larger spending package to support pandemic relief and other measures.

The Department of Commerce (DoC) is overseeing $50 billion to revitalize the U.S. semiconductor industry, including $39 billion in semiconductor incentives. The first funding opportunity seeks applications for projects to construct, expand, or modernize commercial facilities to produce leading-edge, current-generation, and mature-node semiconductors, including front-end wafer fabrication and back-end packaging. The DoC will also release a funding opportunity for semiconductor materials and equipment facilities in late spring and one for research and development facilities in the fall.

CHIPS responds to growing concerns over U.S. dependence on foreign-made semiconductors, particularly from China. In addition, the COVID-19 pandemic has further highlighted the need for secure and reliable supply chains, including critical technologies like semiconductors used in everything from smartphones to automobiles to medical equipment.



The grants are intended to assist companies all along the semiconductor supply chain in the U.S. to supplement/offset their internal capital expenditures, achieve sustainability goals, and minimize environmental impacts.

Funding Opportunities

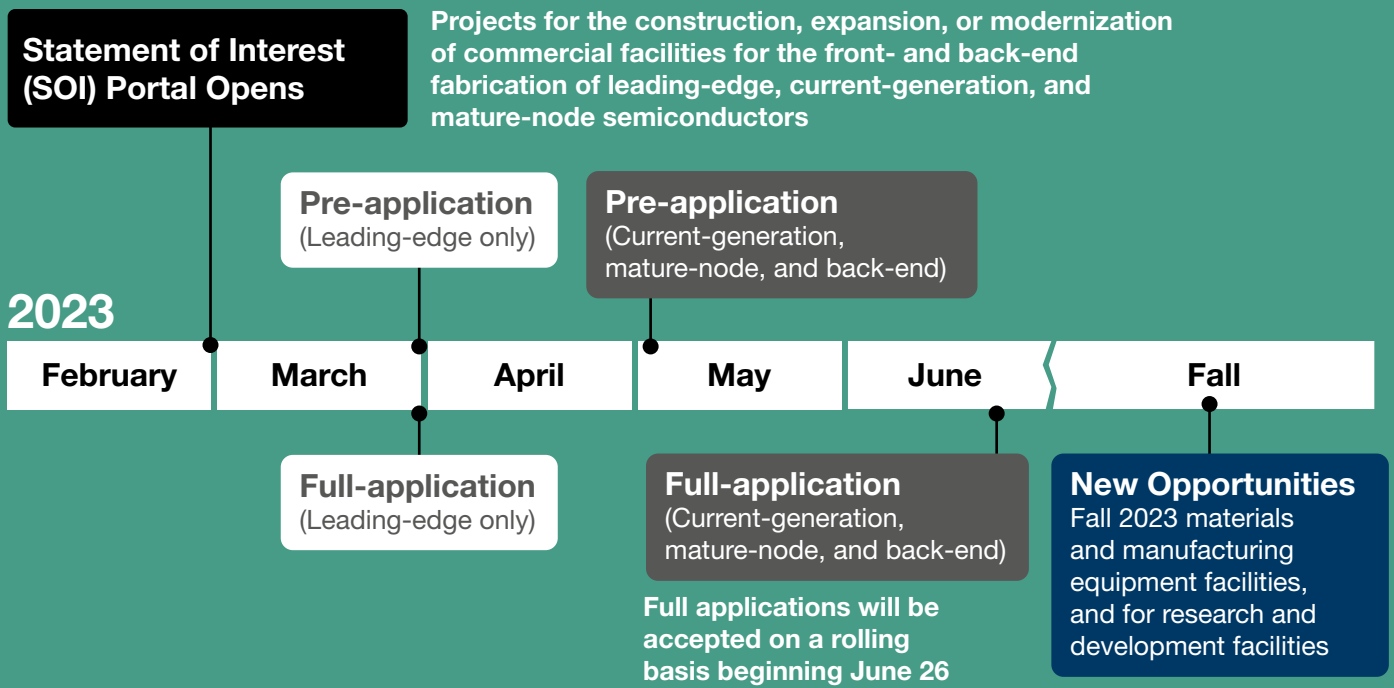
The CHIPS funding is available for various semiconductor research, development, and manufacturing activities and also includes research grants, workforce training, infrastructure investments, and more. The grants will be awarded competitively, prioritizing projects critical to national security, economic competitiveness, or public health.

In addition to funding for research and development, CHIPS includes environmental impact assessment and remediation provisions. It contains requirements for the DoC to analyze the environmental impacts of semiconductor manufacturing, including the use of hazardous chemicals and generation of hazardous waste, and to establish programs to reduce those impacts.

The legislation also authorizes funding for the U.S. Environmental Protection Agency (EPA) to research the environmental impacts of semiconductor manufacturing and develop best practices for mitigation.

Funding will be awarded on a rolling basis and distribution of funds will be tied to project milestones.

The objective of the funding program is to drive semiconductor innovation and manufacturing, support workforce innovation across the semiconductor supply chain, and advance U.S. economic and national security around semiconductor technology.



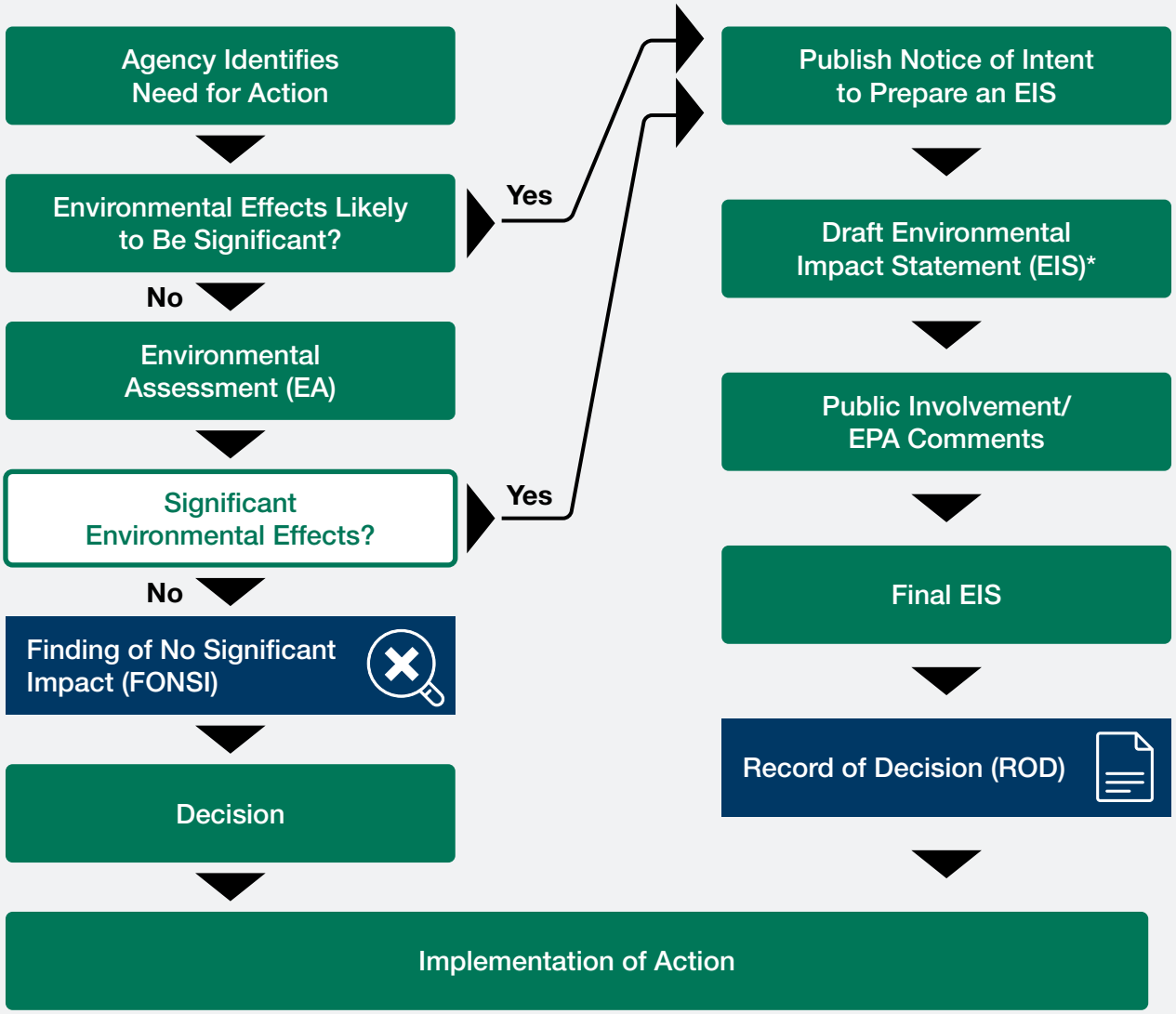
How ERM can help

ERM has a dedicated team to provide the technical expertise and regulatory strategy to help our semiconductor manufacturer clients with their CHIPS applications for this competitive process. ERM's technical and regulatory teams have extensive experience navigating the National Environmental Policy Act (NEPA) program. With expert knowledge, we can adapt to your needs and collaborate on an integrated and turnkey approach for grant submissions.

Gaps Assessment

ERM assists semiconductor manufacturers with their applications by conducting a gap assessment of the 26 elements/topics that constitute the Environmental Questionnaire. The Questionnaire must accompany the grant applications and provide the DoC with an understanding of how the applicant's project could impact the environment, thereby allowing the DoC to make informed and environmentally responsible decisions.

The Key NEPA Process



Source: CHIPS for America Overview of NEPA and Environmental Reviews

Environmental Questionnaire

Once the gaps assessment is conducted, ERM works with the applicant to fill those gaps, covering topics ranging from air quality to waste management; endangered species and wildlife studies to environmental justice, greenhouse gas impacts, and cultural resources and historic preservation impacts; to socioeconomic impact studies. ERM has the internal resources to provide comprehensive, turnkey services to supplement the information that the applicant may already have, and complete the environmental assessment information required in the application.

Agency Negotiations and Support

Once an application is submitted, ERM can provide support during the application review process-providing supplemental information to help the DoC through its application review and decision-making process.

Environmental Assessments and Environmental Impact Studies

Once the DoC has decided whether an Environmental Assessment (EA) or Environmental Impact Study (EIS) is needed before a funding decision can be supported, ERM can assist semiconductor manufacturers with conducting those EAs and EISs, and developing strategies to minimize their environmental impact in manufacturing. In addition, by evaluating the potential environmental effects of their operations, ERM helps manufacturers comply with regulatory requirements and identify opportunities to reduce their impacts.

These are just some of our specialty technical teams that can help our clients navigate these new and harder-to-navigate aspects of the program.

Endangered Species

ERM's team of biologists and natural resources experts can conduct due diligence and critical issues analysis for siting of new facilities, special status species and habitat field surveys, wetland delineation, and other natural resources-related studies to evaluate potential impacts and design mitigative measures as per the Endangered Species Act. During the construction phase, our team works in tandem with construction personnel to conduct mitigation monitoring whenever required, helping keep projects on schedule.

Environmental Justice (EJ) & Socioeconomics

ERM has extensive experience using EPA's EJSCREEN mapping tool and other tools to complete detailed EJ and socioeconomic analyses of the study area and surrounding communities. For example, we can use demographic data to locate EJ communities and determine whether negative consequences resulting from industrial, governmental, and commercial operations or policies disproportionately affect the community. In addition, ERM has extensive experience developing EJ analysis, including the stressors and a roadmap for successful outreach to these communities.

A successful application will also incorporate a workforce development strategy to strengthen both the construction workforce and the semiconductor workforce by working with the local community and educational institutions to ensure training of the next generation of workers. Workforce development plans should incorporate the "Good Job Principles" published by the DoC as part of demonstrating an effective workforce plan as well as, for projects over $150 million, childcare planning for both the construction workforce and the facility workforce. These socioeconomic factors are specific to each project and can be quite challenging to address. ERM's experienced Strategic Communications team can support clients in building workforce and community development plans to support successful CHIPS funding applications.

Greenhouse Gases and their Environmental Effects

Timely and effective identification, analysis, and disclosure of climate-related business risks are critical for defining and creating value. ERM assists with measuring and reporting **carbon footprints**, which involves measuring greenhouse gas emissions associated with producing semiconductor products. In addition, ERM's extensive experience with the CDP (formerly the Carbon Disclosure Project) helps companies understand how to reduce greenhouse gas emissions, mitigate climate change, and reduce corporate carbon footprint with their CHIPS submissions. ERM helps companies measure and disclose their environmental impact for the CDP and CHIPS, for transparency and collaboration and to drive progress, accountability, and risk management.

ERM can assist semiconductor manufacturers with **sustainability reporting**, which involves measuring, reporting, and disclosing environmental and social performance data. ERM can also develop sustainability strategies and reporting frameworks, which help semiconductor manufacturers meet regulatory requirements and stakeholder expectations.

ERM's technical teams can support clients in understanding the **climate resiliency risks**, quantifying them, and making informed decisions regarding incorporating proactive climate impact mitigation into capital project development.

CHIPS program applications must demonstrate that the project has considered potential climate-related risks and impacts and that appropriate measures are in place to mitigate those risks.

Impacts to Water Quality/Water Resources

ERM assists with corporate strategy around responsible water stewardship, including socially and culturally equitable, environmentally sustainable, and economically beneficial consumption and conservation. We support integrating and operationalizing these strategies into daily operations and report on progress toward published corporate water sustainability targets.

Tribal, Historic, and Cultural Resources

ERM's cultural heritage experts routinely conduct due diligence and critical issues analysis for siting new facilities, field surveys, recordation of resources, data recovery, and tribal consultation per the National Historic Preservation Act (NHPA). Then, when it comes time to construct, our team blends seamlessly with construction personnel to conduct mitigation monitoring when necessary, ensuring compliance.

The time to act is now!

Now is the time to maximize your opportunity for incentives from the CHIPS and Science Act. Pre-applications for most project types are due May 1st.

ERM is a trusted partner to the semiconductor industry in building a more secure and sustainable domestic semiconductor industry. ERM has the industry expertise needed to guide you along the funding journey.

For more information, contact your current ERM consultant or any of our experts:

Alison Drury
Senior Partner,
Global Technology Lead
alison.drury@erm.com

Jacquie Payette, RPA
Technical Director
jacquie.payette@erm.com

David Murtha, QEP, CVI, TWIC
Consulting Director
david.murtha@erm.com

Lyndsey Colburn
Consulting Partner
lyndsey.colburn@erm

Ed Struzik, CPIM
Partner, Supply Chain
ed.struzik@erm.com

Tiffany Cuni
Partner
tiffany.cuni@erm.com

The business of sustainability

ERM