JISEA
Joint Institute for
Strategic Energy Analysis





The Joint Institute for Strategic Energy Analysis

The Joint Institute for Strategic Energy Analysis (JISEA) is the National Renewable Energy Laboratory's (NREL's) institute for launching new research domains addressing future challenges to the clean energy transition. Through innovative approaches, JISEA serves as an engine for collaboration to build expertise around complex, multidisciplinary issues that the world will face in the decades to come.

JISEA's Approach

JISEA focuses on the clean energy implications of emerging trends in technology, society, and the environment. To address these challenges, JISEA connects researchers, innovators, and partners, and fosters a flexible innovation environment to produce insights, research, and solutions.

Network Development: Through convenings, workshops, and the annual meeting, JISEA connects researchers with each other and external partners to identify emerging challenges and curate a network of expertise across disciplines.

Catalyzers Initiative: JISEA launches 2-year seed catalyzer research projects to improve sector-wide understanding of challenges in our exploratory areas and build the capabilities needed to address them in the future.

Prizes, Vouchers, and Training: Through American-Made, JISEA brings real-world challenges and gaps in the clean energy economy to light, then addresses those needs by advancing technology innovation and community development.

Ultimately, JISEA's approach provides early-stage nurturing and investment for long-term, mature research and innovation networks and interdisciplinary research capabilities for upcoming energy systems challenges.

JISEA's Exploration Areas

At the institute's annual meeting and virtual convenings, and through networks of experts, stakeholders, and academic partners, we select exploratory areas that encompass diverse questions that invite further investigation.

- **Climate Adaptation and Clean Energy Intersections:** The effects of climate change on the efficiency, security, and resilience of the energy system
- **Technology-Society Interface:** The societal implications of the advancement of clean energy technology
- **Clean Energy Workforce:** The scale and scope of future clean energy workforce needs
- **Hard-to-Decarbonize Industries:** The development of sustainable, energy-efficient industrial processes

AMERICAN MADE
U.S. DEPARTMENT OF ENERGY

American-Made Program

JISEA is home to the American-Made program and its prizes and competitions, innovative network, and national lab vouchers. Through the implementation of hundreds of millions of dollars in prizes in support of the U.S. Department of Energy, American-Made infuses the clean energy marketplace with solutions to real world challenges and creates networks of clean energy innovators in every corner of the energy sector. In addition, the learnings from prize winners and applicants inform the clean energy sector of emerging challenges, identify novel solutions, and feed technology research portfolios with on-the-ground information about needs and opportunities. For more information on how American-Made challenges supercharge the clean energy revolution, visit **americanmadechallenges.org**.

Scaling up early efforts to address these challenges before they evolve into major threats to the energy system transformation is critical. JISEA gets ahead of emerging challenges, building a portfolio of foundational research and establishing NREL and other partners as leaders in the field.

- In 2011, JISEA supported research on supply chain issues for rare earth metals, preparing researchers and analysts for today's extensive materials challenges related to clean energy.
- Between 2014 and 2016, JISEA provided seed investments in research at the intersections of energy, food, and water, informing current research portfolios in co-benefits driving agrivoltaics.

Engaging with JISEA

JISEA fosters collaborations across institutions and brings benefits to all partners, including connecting partners with NREL researchers and other interdisciplinary experts for long-term collaboration or co-proposing, providing opportunities to contribute to or attend the JISEA Annual Meeting, and more. There are many ways to engage with JISEA and gain access to our network of experts.

Participate in our virtual workshops and annual meeting. These events are opportunities to hear about and contribute to high-impact research and cutting-edge research approaches in our exploration areas. Grow your professional network for further collaborations and take an active role in steering the direction of JISEA's networks and research.

Engage in a research opportunity. Through our Catalyzers Initiative and other network research projects, you can collaborate with JISEA researchers and network partners on an innovative research and analysis project addressing an emerging challenge in one of our exploratory areas.

Apply for an internship. JISEA offers funded and partnered internships to encourage students to explore interdisciplinary challenges to clean energy. These internships are perfect for undergraduate, graduate, and postgraduate students who are interested in being on the forefront of complex energy challenges.

Sponsor our initiatives. JISEA actively works with sponsors of all commitment levels to craft individualized sponsorship opportunities tailored to research interests that align with our exploration areas. Sponsorships, singly or in consortia, can enable new catalyzers, prizes, and workshops, and can support the annual meeting.

We are looking to expand engagements across the energy systems fields to identify and understand complex challenges to clean energy transformation and to increase our global impact.

Learn more at jisea.org.

If you are interested in JISEA's exploration areas and collaborations with the national laboratories of the U.S. Department of Energy, contact JISEA Director Elizabeth Doris.

Elizabeth.Doris@nrel.gov **or (202) 277-4012**

NREL Transforming ENERGY · Colorado School of Mines · Colorado State University · Howard University Office of Research · Massachusetts Institute of Technology · Stanford University · University of Colorado Boulder

JISEA is operated by the Alliance for Sustainable Energy, LLC, on behalf of the U.S. Department of Energy's National Renewable Energy Laboratory, the University of Colorado-Boulder, the Colorado School of Mines, Colorado State University, Massachusetts Institute of Technology, and Stanford University.

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