



The Berkeley-Tsinghua Joint Research Center on Energy & Climate Change: *From Ambition to Action*

In November 2014, President Obama and President Xi Jinping committed to ambitious climate change mitigation goals prior to the COP21 meeting in Paris. The United States pledged to reduce emissions by 26-28% below 2005 levels in 2025. China pledged to “achieve the peaking of CO₂ emissions around 2030 and to make best efforts to peak early” and “to increase the share of non-fossil fuels in primary energy consumption to around 20% by 2030.”

To achieve these ambitious goals, both countries will require significant technology advances as well as adoption of policies and programs to accelerate action, increase public understanding, and garner the political will necessary to truly make significant, lasting greenhouse gas emissions reductions.

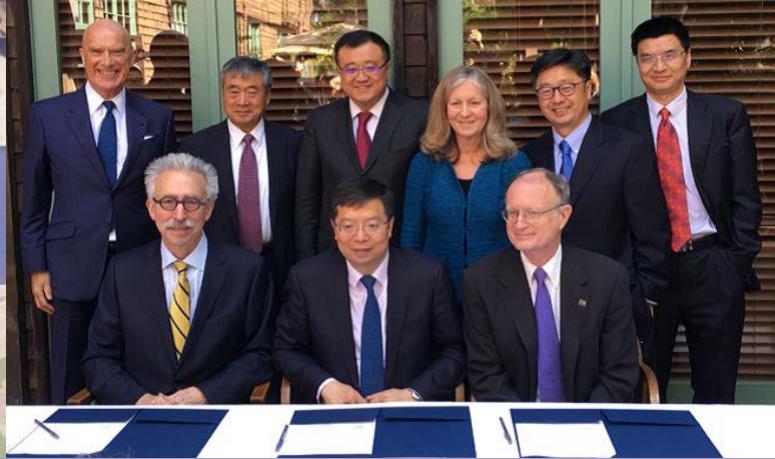
“The Joint China-US announcement signals the shared vision and seriousness with which the world’s two largest economies are moving to a low-carbon future. It demonstrates strong leadership and momentum for a comprehensive global climate agreement in Paris.”

—Ban Ki-moon, Nov. 29, 2015

Understanding the critical importance of making these pledges a reality, Dr. Chen Jining—former President of Tsinghua University and current head of China's Ministry of Environmental Protection—approached the Chancellor of the University of California, Berkeley (UC Berkeley) and the Director of Lawrence Berkeley National Laboratory (Berkeley Lab) with the idea of bringing together the world’s best and brightest to tackle the challenge of translating ambitious goals into actionable interventions.

In order to meet this challenge, and with a belief in the power of collaborative, collective innovation, the University of California, Berkeley (UC Berkeley) and Lawrence Berkeley National Laboratory (Berkeley Lab), in collaboration with Tsinghua University of Beijing, China, have established the Berkeley Tsinghua Joint Research Center on Energy and Climate Change.

This Joint Research Center was announced with the signing of a Memorandum of Understanding at the United Nations COP21 in Paris on December 1, 2015 and launched on May 10, 2016 in a ceremony witnessed by Tsinghua President Qui Yong, Lawrence Berkeley National Laboratory Director Mike Witherell, and University of California, Berkeley Chancellor Nicholas Dirks.



Mission: To drive ambitious clean energy and climate change mitigation policy through world-class scientific research combined with impactful leadership training and targeted communications and policy outreach.

Research

Policies and actions to support achievement of China's current Paris Agreement goals—and to increase the ambition of China's commitments in the future—need to be fundamentally based on scientific research, including best practices and case studies from around the world.

The Berkeley-Tsinghua Joint Research Center will focus on conducting policy-relevant research to understand China's unique and interrelated challenges of development, energy, and environment, and providing integrated policy and technology solutions to support China's ambitious climate change mitigation goals.

The Joint Research Center will initially focus on areas that offer the greatest impact in terms of energy savings, emissions reductions, and air quality improvement, and that support China's Paris Agreement goals, including:

- *Low Emissions Policy and Technology Pathways:* Supporting development of enhanced goals for climate change mitigation for China's next submission of its nationally determined contributions through research focused on integration of non-CO₂ GHG emission sources and mitigation options—which represent about 40 percent of the near-term mitigation potential.
- *Clean Power System Planning and Integration:* Supporting China's goal to have 20% of its energy from non-fossil sources by 2030 through research on power sector reform, new business models, and power system planning approaches, as well as technical assistance for China's power sector reform pilots related to renewable integration, demand response, distributed energy resources, microgrids, and retail markets.

- *Early Peaking, Low Carbon Cities:* Supporting China's goal to peak energy-related CO₂ emissions by 2030 or earlier through research on near-zero carbon communities and pilots—including integrated solutions such as passive buildings, distributed energy resources, and transit-oriented development.
- *Environmental Constraints of Fossil Fuel Use:* Supporting China's goal to source 20% of its energy from non-fossil sources by 2030 through research on the water-related constraints of fossil fuel use, focusing on water issues related to coal-fired power plants and coal-to-liquids.
- *Economics of Low-Carbon Transformation:* Supporting China's goal to transition to a low-carbon economy by conducting economic analysis of the costs of transition from coal to clean energy.



The Joint Research Center's operating philosophy is to create an open network of interdisciplinary researchers that can bring scientific approaches to the formidable challenge of transforming China's energy sector, which requires both new technological and institutional solutions.

Leadership Training

Training the next generation of influential Chinese thinkers and policy makers to turn research-based recommendations, best practices, and case studies into impactful policies and programs is essential for achieving China's climate change mitigation goals.

To promote the development and dissemination of up-to-date research and best practices, interdisciplinary education and professional training programs related to energy and climate change will be offered through the Joint Research Center's **Berkeley-Tsinghua Fellows Program for Energy & Climate Change**:

- *Three-Week Certificate Program*: This three-week certificate program is designed for mid-career development and environmental practitioners from a wide range of disciplinary, geographic, and organizational backgrounds—including government, nonprofit organizations, research and education institutions, international agencies, and the business sector—who are working on the challenging issues related to clean energy and climate change in China. Program participants will gain best practices knowledge on how to implement low-carbon solutions in their own jurisdictions.
- *Visiting Fellows Program*: In partnership with the Berkeley Lab China Energy Group Visiting Scholar Program, the Joint Research Center will host professionals, scholars, and researchers from China to work on topics related to energy and climate change in China. Visiting scholars work on-site at Berkeley Lab and enjoy access to the intellectual resources of Berkeley Lab and UC Berkeley to further their research and contribute to ongoing or emerging areas of research.

Communications & Policy Outreach

The Berkeley-Tsinghua Joint Research Center on Energy and Climate Change will conduct targeted outreach activities to key Chinese decision makers to share research results, best practices, and case studies on clean energy and climate change mitigation, ensuring that decision makers in China's government and corporations have robust knowledge of the most cutting-edge, innovative policies and programs.

The Joint Research Center will convene the world's leading researchers, policy makers, and practitioners for an annual **Berkeley-Tsinghua Energy Forum** to highlight research results and serve as a forum to cross-fertilize new interdisciplinary ideas to support China's transition to a clean energy economy.

The Joint Research Center will also hold focused workshops with established partners in China to share best practices on policy and technology solutions.

Leadership Team

The Berkeley-Tsinghua Joint Research Center will be co-led by Dr. Jiang Lin of Berkeley Lab, and Professor Yao Qiang of Tsinghua University. They are supported by a Steering Committee comprised of senior researchers and faculties from the three institutions, which is comprised of Professors He Jiankun and Teng Fei of Tsinghua, Lynn Price of Berkeley Lab, and Professor Paul Wright of UC Berkeley.

An external Advisory Council is being developed to provide additional guidance on strategies and outreach.



Contact the Berkeley-Tsinghua Joint Research Center

On the Web: BTJRC.lbl.gov

By Email: BTJRC@lbl.gov