
California - New York Solar Research Partnership Proposal



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“Achieving global sustainability is the defining challenge of our time.

It requires unprecedented levels of collaboration—among governments, institutions, corporations, and scientists.

The proposed California - New York Solar Research Partnership will bring together leading solar researchers in the two U.S. states most committed to developing and implementing solar and renewable energy.

Together we can achieve things that individually we cannot, making this partnership just one of many necessary steps toward a better and more sustainable future.”



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UC Solar Institute Director

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The Energy to Lead

2015 New York State Energy Plan

NY has ambitious goals for clean energy, captured at the highest level with these targets for the year 2030

Progress against these targets requires that significant progress be made against known technology challenges, infrastructure limitations, and policy constraints.

40% Reduction
in GHG emissions from 1990 levels

Reducing greenhouse gas (GHG) emissions from the energy sector—power generation, industry, buildings, and transportation—is critical to protecting the health and welfare of New Yorkers and reaching the longer term goal of decreasing total carbon emissions 80% by 2050.

50% Generation
of electricity must come from renewable energy sources

Renewable energy sources, including solar, wind, hydropower, and biomass, will play a vital role in reducing electricity price volatility and curbing carbon emissions.

23% Decrease
in energy consumption in buildings from 2012 levels

Energy efficiency results in lower energy bills and is the single most cost-effective tool in achieving energy objectives. 600 trillion British thermal units (BTU) in energy efficiency gains equates to 23% reduction in energy consumption by buildings.

Proposed California-New York Solar Research Partnership

- Centered on promoting and supporting university-based solar R&D through collaboration and collective effort
- CA engagement to be led by the 10-campus University of California Advanced Solar Technologies Institute (UC Solar)
- NY engagement will be led by the University at Buffalo - SUNY
- Bi-coastal partnership will support applied research, facilitate scientific interchange, streamline innovation, promote education, accelerate system commercialization, and enhance America's industrial competitiveness

Partnership Activities

- Address the solar industry's core technology and workforce challenges by focusing on the following key areas:
 - Making solar electric and solar thermal energy systems cost-competitive with all fossil fuels
 - Facilitating solar system integration at all scales and enabling the 100% renewable energy grid
 - Influencing solar energy economic and policy drivers
 - Educating and developing tomorrow's solar scientists and entrepreneurs



Overview—UC Solar

- UC Solar is a ten-campus multidisciplinary research institute that was established in 2010 by the University of California Office of the President

UC DAVIS
UNIVERSITY OF CALIFORNIA

Cal

UC MERCED

UC SB

UC San Diego

UC RIVERSIDE
UNIVERSITY OF CALIFORNIA

UC SANTA CRUZ

UC IRVINE

UCLA



- Includes 37 ladder-rank faculty
- UC Solar faculty are leaders in their fields with long track records of research and development success
- Emphasis is on “applied” research—solutions that can be brought to market quickly and efficiently

Overview—NY Universities

- The New York side of the partnership will be made up of a new consortium of leading universities
- This consortium is being led by the University at Buffalo, with partners Stony Brook and Binghamton
- Likely partners include SUNY's Albany and Alfred State campuses, along with the Rochester Institute of Technology (RIT), Clarkson University, Syracuse University, and Rensselaer Polytechnic Institute (RPI)



Partnership Activities

- CA and NY researchers will conduct impactful solar energy research in the areas of:
 - Solar cell design and manufacturing
 - Thermal and hybrid system development
 - Solar energy storage
 - Forecasting and performance modeling
 - Building-, community-, and grid-scale integration
- Researchers will also:
 - Participate in joint research symposiums
 - Visit their colleagues and encourage student exchanges
 - Collaborate on multi-campus research proposals and projects
 - Represent the partnership at high-impact conferences
 - Host visiting faculty from their partner campuses

Partnership Strengths

- The model for this collaboration has been successfully proven over the last seven years by the UC Solar Institute
- All of the universities in the proposed partnership are among the top ranked research universities in the world
- Each has extensive experience with licensing and commercialization activities
- Each has an active infrastructure that encourages and supports industry engagement and faculty and student entrepreneurship



Partnership Capabilities

- Participating faculty are leaders in their fields, and receive significant funding from federal and state agencies and corporate research grants
- Partnership university doctoral programs and graduate students are among the world's finest
- Participants come from all scientific disciplines and work in state-of-the-art research centers and laboratories



Proposed Funding

- To make the CA-NY partnership a reality we are seeking a level of extramural support sufficient to facilitate interchange activities and empower faculty research
- The participants anticipate requesting a multi-year grant with an approximate annual budget of \$2M, to be split evenly between CA and NY
- Projected expenses include:
 - R&D project seed funding (~\$50-75k per participating campus)
 - Administration, outreach, and engagement (~\$150k per lead campus)
 - Symposium expenses (~\$30k per year)
 - Faculty-student exchange activities/grants (~\$200k per year)

Conclusion

- The proposed California-New York Solar Research Partnership is centered on supporting, promoting and enhancing university-based solar R&D in the two U.S. states most committed to solar energy
- It empowers and incentivizes faculty to work with their like-minded colleagues and turns competitors into partners
- Both states, and the nation, will benefit from the innovations developed under the partnership, the resultant greenhouse gas reductions, the jobs created, and the expertise of the students educated under this program



“California and New York are our nation’s leaders in fighting the battle against man-made global warming, and together we can lead our nation and the world in solar energy research, innovation and education.”

Roland Winston

Questions

- For more information regarding this proposal, contact:

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