

**ATTACHMENT 11
Commitment and Support Letters**

Letter of Commitment/Support # 1 of 7 for Wind Harvest International	
Type of Letter	<input checked="" type="checkbox"/> Commitment <input type="checkbox"/> Support
Commitment Letter Subject Matter (select one or more as appropriate)	<input type="checkbox"/> Match Funding <input checked="" type="checkbox"/> Project Partner <input type="checkbox"/> Pilot Test/Demonstration/ Deployment Site
Type of Match Funding (if applicable)	<input type="checkbox"/> Cash in hand <input type="checkbox"/> Travel <input type="checkbox"/> Equipment <input type="checkbox"/> Subcontractor costs <input type="checkbox"/> Materials <input type="checkbox"/> Contractor/project partner in-kind labor costs <input type="checkbox"/> Information technology services <input type="checkbox"/> Advanced practice costs
Author of Letter (name and title)	Natalie Muzzio, Office of Sponsored Research, Stanford University
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California Energy Commission

Sponsor Reference: GFO-16-310

Stanford Reference: SPO 131767

Title: Simulations of VAWT Wakes in Atmospheric Boundary Layers

Principal Investigator: Sanjiva K. Lele

Period: 01 January 2018 – 31 December 2019

Amount Requested: \$ 410,000.00

Dear California Energy Commission and Grant Reviewers,

As a project partner of Wind Harvest International's (WHI) application for the grant funding opportunity Improving Performance and Cost Effectiveness of Wind Energy Technologies, the Stanford University unconditionally commits to support their proposal "Researching and developing the potential of VAWTs to double capacities of California's wind resource regions while preventing harm to birds – Phase I" by conducting the following research tasks with Prof. Sanjiva Lele as Stanford PI, if WHI is awarded the grant:

- 1) Aerodynamic modeling of VAWT wake for a single turbine (Jan-June 2018)
- 2) Aerodynamic modeling of counter-rotating VAWT pair (Jan-June 2018)
- 3) Simulations of VAWT pair wake in an atmospheric boundary layer (July-Dec 2018)
- 4) Simulations of VAWT wakes for VAWT configurations (Jan-Dec 2019)
- 5) Work with team partners (WHI and San Jose State University) on validating the numerical modeling using the field data
- 6) Participate in monthly meeting by phone. Participate in six monthly in-person meetings in California.
- 7) Write peer reviewed papers to disseminate the research results.

At Stanford University we take special pride in connecting fundamental research to real world science and engineering problems. Therefore, we strongly endorse Prof. Lele's participation in the proposed research.

Stanford University is a nonprofit U.S. institution of higher education which conducts fundamental research in basic and applied science and engineering that is widely and openly published and made available to the scientific and academic community. Stanford University has an Openness in Research Policy, which can be viewed at <http://doresearch.stanford.edu/openness>. Based on this policy, as well as federal laws prohibiting discrimination based on nationality, country of origin, ethnicity, gender, race or religion, Stanford does not undertake classified work, research requiring national security controls, or research whose results are subject to export control. Stanford cannot accept any conditions of award which would restrict any member of the research group, including faculty, students and staff, from the ability to participate fully in all of the intellectually significant portions of the project. For these reasons, sponsors may not provide export control-listed information to Stanford unless it has received its written concurrence. Stanford retains the right to decline receipt of export control-listed information that a sponsor wishes to provide. In the event

that a sponsor makes such a disclosure to Stanford without its concurrence, Stanford reserves the right to immediately terminate the Agreement. In the event of termination, Stanford shall recover costs for all non-cancellable commitments.

In the event of an award, Stanford should be identified as "The Board of Trustees of the Leland Stanford Junior University", a body having corporate powers under the laws of the State of California. Please include the applicable federal CFDA number if funded in whole or in part from federal sources. Professor Lele will deliver reports defined as product as listed in the proposal and shall disseminate the underlying results and findings in the open literature, including any student thesis, dissertations, or reports relating to the work.

Thank you for your consideration of this proposal and should you require additional information, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, consisting of a series of loops and curves, representing the name Natalie Muzzio.

Natalie Muzzio
Office of Sponsored Research