

MEMORANDUM OF UNDERSTANDING**Between**

**The National Renewable Energy Laboratory
Managed and operated by the Alliance for Sustainable Energy, LLC
For the United States Department of Energy**

And

**The Australian National University
as represented by the
ANU Energy Change Institute**

For coordination on activities to share knowledge and best practices in an ongoing effort to meet an increased energy demand with a focus on clean energy.

INTRODUCTION

The National Renewable Energy Laboratory (NREL) is a national laboratory managed and operated by the Alliance for Sustainable Energy, LLC for the United States Department of Energy (DOE) under Contract No. DE-AC-08GO28308.

The Australian National University (ANU) A.B.N. 52 234 063 906, CRICOS Provider Number 00120C, is an institution pursuant to the *Australian National University Act 1991* (Cth), of Acton, in the Australian Capital Territory, 2601, Australia, and as represented by its Energy Change Institute (ANU ECI).

Integral to its mission for the U.S. Department of Energy, NREL conducts research and development on photovoltaics under the NREL National Center for Photovoltaics (NCPV) leadership and for concentrated solar thermal and other relevant non-PV solar technologies under the leadership of NREL's Solar Program office. NREL will benefit from collaboration with ANU ECI for the further development of solar photovoltaic technology, solar thermal technology, and other relevant solar technologies.

Integral to its mission the ANU ECI conducts research and development on solar photovoltaic and solar thermal technologies, energy efficiency and demand management (with applications to the ANU building design program and the ANU Energy Master Plan), geological characterization for enhanced oil and gas extraction and carbon capture and storage, renewable fuels and artificial photosynthesis, grid integration of renewables and storage, and energy storage and recovery. Further, the ANU ECI complements this expertise in energy technology with significant expertise in the human dimensions needed for the implementation of new energy technologies, including energy economics, regulatory, governance, sociology and policy expertise. The ANU ECI will benefit directly from the complementary exchange of expertise with cognate research areas at NREL, which fit with the ANU ECI objectives of enhancing the energy research capability of ANU. ANU will also apply this knowledge to reducing its own campus energy footprint through the ANU Energy Master Plan.

NREL or ANU ECI is each referred to as a "Participant". Both NREL and ANU ECI are collectively referred to as "Participants."

The purpose of this MOU is to encourage coordination in areas of mutual interest and benefit to both Participants. Based on the principles of equality and reciprocity, this MOU is intended to serve as a general framework for planned coordination between the two Participants and is intended to facilitate discussions for the development of a more specific planned program of research and development collaboration. Any specific program of collaboration or sharing of confidential information is to be implemented through an appropriate written contract between the Participants.

Section 1: Scope of Coordination

1. The coordination activities planned under this MOU, and the programs of collaboration contemplated in furtherance of, are focused on cooperation to maximize the benefit to their respective institutional interests, which may include the following selected topics:

- solar photovoltaic technology
- solar thermal technology
- energy efficiency and demand management (including energy efficient building design)
- renewable fuels
- energy storage and recovery
- grid integration of renewables and storage

2. Potential outcomes from the collaborative activities include:

- joint research programs
- PhD student research opportunities
- innovative energy policy outcomes
- new energy products and devices.

Section 2: Funding

1. The scope of planned activities under this MOU should be mutually determined in light of time, resources and/or funds available at both institutions for the types of coordination undertaken and by such other financial assistance as may be obtained by either Participant from external sources.
2. Unless the Participants otherwise determine in a separate written agreement, each Participant is to be responsible for the costs it incurs in participating in the coordination contemplated by this MOU, including all administrative costs, overhead expenses, labor costs, insurance costs, travel expenses and similar costs.

Section 3: Researcher Exchanges

It is anticipated that:

1. Each Participant retains responsibility for its own personnel in relation to researcher exchanges to carry out coordination under this MOU;
2. Each Participant's personnel is to abide by the regulations, policies, and procedures of the host Participant in carrying out activities under this MOU, including protection of business proprietary information, protection of intellectual property, compliance with export control laws and regulations, conditions of cooperation and decorum, health, safety, and security requirements, and all other terms under which personnel are authorized to participate in researcher exchanges at the host Participant's facility. Such activities may require entry into separate written agreements.
3. Each Participant is to be solely responsible for its own personnel in relation to matters as visa and travel formalities, appropriate insurance (medical insurance and medical evacuation and repatriation insurance), travel expenses, and suitable living accommodation and expenses.
4. To the extent possible, the Host Participant will assist in facilitating travel arrangements of

the other Participant's personnel in relation to researcher exchanges in accordance with the applicable procedures governing foreign national access to the host Participant's facility.

Section 4: Dissemination of Information

Each Participant intends to participate in the coordination in a manner that facilitates exchanges of publicly available, non-proprietary business information. Subject to applicable laws and regulations of its country, each Participant may disseminate information, data, and reports of the coordination carried out under this MOU.

Section 5: Use of Information

Any information transmitted by one Participant to the other Participant under this MOU should be accurate to the best knowledge and belief of the transmitting Participant.

Section 6: Intellectual Property

The Participants do not anticipate the transfer of rights in intellectual property or the sharing of confidential information to occur under any planned coordination activity under this MOU.

Section 7: Future Collaborations

Any specific future research and development or the transfer or commitment of funds is to be implemented through an appropriate written contract between the Participants. Any such contract should include a work plan, staffing requirements, cost estimates, funding sources, the adequate and effective protection and allocation of intellectual property rights, and other arrangements or conditions; and must be authorized under NREL's Management and Operating Contract.

Section 8: Review of Coordination

The Participants intend to review the coordination undertaken under this MOU as a means to ascertain its effectiveness, document achievements and lessons learned, recognize technical personnel, and identify and plan areas for potential future collaboration that involves the conduct of research and development activities.

Section 9: Contacts

One or more designated representatives from each Participant should oversee, manage and facilitate implementation of this MOU in cooperation with each other on behalf of their respective institutions. All notices, communications and coordination shall involve, at a

minimum, the following individuals, their successors and/or designees as follows:

(a) For the National Renewable Energy Laboratory:

Greg Wilson
15013 Denver West Parkway
Golden, CO 80401

Tel: 011-303-384-7950

Gregory.Wilson@nrel.gov

(b) For the ANU ECI:

Professor Kenneth Baldwin
ECI Director
Energy Change Institute

The Australian National University
Building 141, Linnaeus way
Canberra, ACT, 2601

+61 2 6125 4702 (direct)

Kenneth.Baldwin@anu.edu.au

Section 10: General Conditions

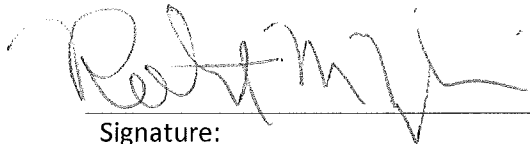
1. This MOU is not intended to create any legally binding obligations between the Participants.
2. Each Participant should conduct the coordination contemplated by this MOU in accordance with applicable laws and regulations to which it is subject and international agreements to which its government is party.

Section 11: Commencement, Modification and Discontinuation

1. Coordination under this MOU may commence upon signature, and may continue for a period of two (2) years, unless discontinued in accordance with paragraph 3 of this section.
2. The Participants may revise this MOU at any time by mutual consent in writing.
3. The Participants may discontinue coordination under this MOU at any time by mutual consent in writing. Alternatively, a Participant that desires to discontinue its participation in this MOU should endeavour to provide the other Participant at least 90 days advance written notice.

Signed in duplicate.

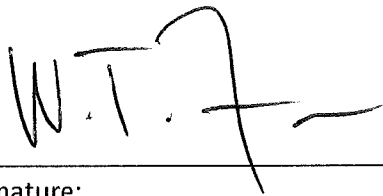
For
The National Renewable Energy Laboratory
managed and operated by the
Alliance for Sustainable Energy, LLC for the
United States Department of Energy



Signature:
Dr. Robert Margolis
Senior Energy Analyst and Group Manager

2/23/18

Date

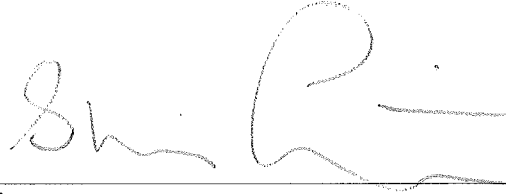


Signature:
William T. Farris
Associate Lab Director
Innovation Partnering and Outreach

3/22/18

Date

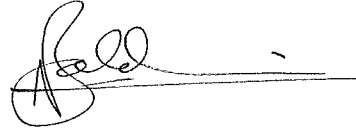
For
The Australian National University



Signature:
Professor Shirley Leitch
Deputy Vice-Chancellor Global Engagement

2/23/18

Date



Signature: **Professor Kenneth G H Baldwin**
Director, ANU Energy Change Institute

2/23/18

Date