

MOU Number: MOU-18-516

## **MEMORANDUM OF UNDERSTANDING**

Between

The National Renewable Energy Laboratory

And

University of Oldenburg

**For** coordination on Wind Plant Physics and Advanced Control Methodologies

### **INTRODUCTION**

The National Renewable Energy Laboratory (NREL), 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-AC36-08GO28308.

The Carl von Ossietzky University of Oldenburg Institute of Physics “ForWind” (hereafter referred to as “ForWind-OL”), is located at K pkersweg 70, D-26129 in Oldenburg, Germany.

As part of its mission for DOE, NREL conducts research and development on advanced control methodologies for wind plants. This work at NREL is supported by the DOE Office of Energy Efficiency and Renewable Energy.

As part of its mission for the University of Oldenburg, ForWind-OL conducts research and development as well as teaching in the field of the physics of wind energy utilization, namely the interaction of the atmospheric flow with wind power plants and the control of wind power plants. This work at ForWind-OL is supported by the Federal Ministry of Economic Affairs and Energy, and the Ministry of Science and Culture of Lower Saxony in Germany.

NREL or ForWind-OL is each individually referred to as “Participant” and collectively as “Participants.”

The purpose of this MOU is to encourage coordination in areas of mutual interest and benefit the 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: Areas of Coordination and Collaboration**

The coordination activities planned under, and the programs of collaboration contemplated in furtherance of, are focused on cooperation to maximize the benefit of each Participant’s respective institutional interests, which may include the following selected topics:

- Wind plant flow model (FLORIS) refinements

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

#### **Section 5: 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 6: 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 7: 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 8: Future Collaborations**

Any specific future research and development collaboration or the transfer or commitment of funds between the Participants 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 9: 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. This review should take the form of periodic meetings of representatives of each Participant to discuss ongoing coordination and to identify and plan future collaboration that involves the conduct of research and development activities.

#### **Section 10: 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 should involve, at a minimum, the following individuals, their successors and/or designees as follows:

- (a) For the National Renewable Energy Laboratory:  
Dr. Alan Wright  
15013 Denver West Parkway  
Golden, CO 80401  
Tel: 1 303 384-6928  
Alan.Wright@nrel.gov

(b) For ForWind-OL  
Professor Dr. Martin Kuehn  
Küppersweg 70  
26129 Oldenburg, Germany  
Tel: +49 441 798 5090  
Email: martin.kuehn@uni-oldenburg.de

#### **Section 11: General Considerations**

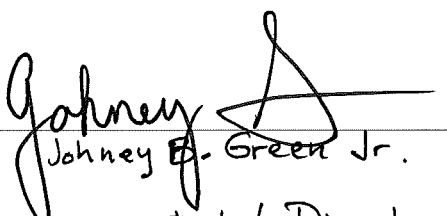
1. This MOU is not intended to create any legally binding obligations between the Participants.
2. Each Participant should conduct the coordination contemplated by this MOU in accordance with applicable laws and regulations to which it is subject and international agreements to which its government is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

#### **Section 12: 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 modify 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 endeavor to provide the other Participant at least 90 days advance written notice.

Signed in duplicate.

For  
The National Renewable Energy Laboratory

  
John E. Green Jr.

Title Associate Lab Director  
26 Aug 2019

Date

GOLDEN COLORADO USA  
Place

For  
Carl von Ossietzky University of Oldenburg  
(ForWind-OL)

Prof. Dr. Dr. Hans Michael Piper  
President

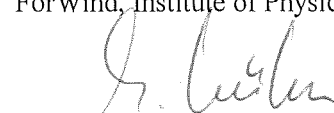
28.7.18

Date

Oldenburg



Prof. Dr. Martin Kühn  
Director of research group Wind Energy Systems  
ForWind, Institute of Physics



Date 15/05/2019

Oldenburg

  
CARL  
VON  
OSSIEZKY  
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