Memorandum of Understanding

between

The Regents of the University of California

and

Korea Electrotechnology Research Institute

Concerning Cooperation on Exploration of Future Collaborations relating to Demand Response, OpenADR, Energy Efficiency, Standards, and Research Exchange

This Memorandum of Understanding (MOU) is between The Regents of the University of California, in its capacity as the manager and operator of the Lawrence Berkeley National Laboratory (LBNL), and the Korea Electrotechnology Research Institute (KERI). LBNL is a U.S. Department of Energy National Laboratory managed and operated by The Regents of the University of California pursuant to Contract No. DE-AC02-05CH11231. KERI is a research institute in the field of Energy Efficiency and Demand Response research in South Korea, having its registered office at Euiwang-city, Kyunggi-do, 437-082, Republic of Korea.

For purposes of this MOU, LBNL and KERI are collectively herein referred to as "Participants" or separately as "Participant."

1. Objective

The objective of this MOU is to provide a framework to explore potential future collaboration between the Participants in Smart Grid, Demand Response (DR), OpenADR, Energy Efficiency, standards development and deployments, and related research exchange ("the Field"). While the Participants already complement one another in the Field, the proposed collaboration aims to enhance the technical exchanges between LBNL and KERI and to allow them to share research and industry experiences and achievements. Finally, it is hoped that the proposed collaboration will lead to the formation of joint projects in the Field, that would help both entities accelerate the cultivation of international research exchange, increase research cooperation, and elevate both entities' influence in the Field worldwide.

2. Areas of Planned Cooperation

- A. The Participants express their intention to promote research and information exchanges and to facilitate future joint research and dissemination activities in the following areas:
 - i. DR, Automated DR (AutoDR) and its application within facilities, and their systems and networks (e.g., utility information systems);
 - ii. Open Smart Grid standards for DR in the Republic of Korea (e.g., Open AutoDR or OpenADR);
 - iii. Demand-side and end-use strategies for Smart Grid (e.g., heating/cooling, lighting) and

- iv. Measurement and verification of energy efficiency programs and related policies.
- B. The proposed areas of cooperation may include:
 - i. Visits and exchanges of researchers and experts, intended to promote understanding, expand areas of collaboration, share information and achievements of research activities, and identify funding opportunities in the Field;
 - ii. Joint activities relating to Smart Grid, DR, AutoDR for end-users and OpenADR standards to widen the visibility of the U.S. Smart Grid to international Smart Grid- and buildings-related activities, and to accelerate training of the inter-disciplinary talent;
 - iii. Joint activities in the area of Measurement and Verification of energy efficiency strategies and related policies; and
 - iv. Discussions regarding future collaborative research projects.

The scope of above activities and cooperation may be changed or extended to other areas by written consent of the Participants, with any future collaborative research or projects to be undertaken pursuant to an appropriate written agreement therefor.

3. Commencement, Modification and Discontinuation

- A. Cooperative activities under this MOU may commence upon signature and continue for a five (5) year period, unless discontinued in accordance with paragraph B of this Section 3.
- B. The Participants may discontinue this MOU at any time in writing. A Participant that wishes to discontinue its participation in this MOU should endeavor to provide at least thirty (30) days written notice to the other Participant.
- C. This MOU may be modified in writing by mutual consent of the Participants, and may be extended for additional periods.

4. Designated Representatives

- A. To administer the implementation of this MOU, each Participant should designate one principal coordinator in charge of the collaboration, through whom all requests and plans of that Participant are to be made.
- B. The designated representatives may hold meetings when necessary to discuss matters related to cooperation under this MOU.
- C. For purposes of this MOU, the designated representative for LBNL is the Environmental Energy Technologies Division Director, or another LBNL designated principal coordinator. The designated representative for KERI is intended to be Dr. Ho-Yong Kim, President, KERI, or other designee as may be appointed by KERI.

5. General Considerations

- A. This MOU does not create any legally binding obligations.
- B. Each Participant should conduct the activities contemplated by this MOU in accordance

MOU – LBNL and KERI Page 3 of 3

with all applicable laws, regulations and other requirements to which it is subject, including, without limitation, export control laws and environment, health and safety laws and regulations.

- C. The conduct of cooperative activities contemplated by this MOU is subject to the availability of funding, personnel, and other resources.
- D. Each Participant is to be responsible for the costs it incurs in participating in cooperative activities under this MOU.

Signed in duplicate.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, LAWRENCE BERKELEY NATIONAL LABORATORY KOREA ELECTROTECHNOLOGY RESEARCH INSTITUTE

By:	fort	Ву:	Hoyong Kim
Name:	Dr. A. Paul Alivisatos	Name:	Dr. Ho-Yong Kim
Title:	Laboratory Director	Title:	President
Date	08 02 13.	Date	08 /02 /13