

MEMORANDUM OF UNDERSTANDING

Between

**THE U.S. DEPARTMENT OF ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY**

And

THE KOREA INSTITUTE OF ENERGY RESEARCH

I. PURPOSE

This Memorandum of Understanding (MOU) reflects a mutual interest on the part of the U.S. Department of Energy's National Energy Technology Laboratory (NETL) and the Korea Institute of Energy Research (KIER) to pursue collaborative work to advance the technical, environmental, and cost performance of fossil energy technologies.

II. AREAS OF COOPERATION

Cooperative activities may include, but are not limited to, research on base and enabling technologies and assessments of technology options and economics. Cooperative topics may include:

- a. Environmentally friendly discovery, characterization, production, processing, and transportation technologies for fossil fuels
- b. Advanced, high-efficiency power systems, including:
 - Integrated gasification combined cycle (IGCC) systems
 - Advanced pulverized coal combustion systems
 - Advanced gas turbines
 - Chemical looping
 - Hybrid systems
- c. Advanced environmental control systems for conventional and advanced power systems, including:
 - Nitrogen oxides (NO₂)
 - Sulfur oxides (SO₂)
 - Particulates
 - Hazardous air pollutants (e.g., mercury)
 - Greenhouse gases
 - Process water treatment

- d. All operations in the production and use of high-quality transportation fuels and chemicals including gasifiers, gas cleanup, gas separations, sorbents and membranes, reactors, catalysts, materials, and control systems.
- e. Development of advanced central-station power and/or fuels production systems with very low emissions.
- f. Development and assessment of sequestration options for carbon dioxide (CO₂) and other greenhouse gases from fossil fuel-based systems, including capture, storage, and utilization.
- g. Development and assessment of technologies to recover coal bed and coal mine methane, including options to sequester CO₂ from fossil fuel-based systems.
- h. Other environmental technologies for assessment, control, and remediation of ground water and soils, including acid mine drainage, affected by fossil fuel production and use.
- i. Other related technologies, such as minimization and utilization technologies for wastes resulting from fossil fuel production and use (e.g., coal combustion byproducts).

Other areas of cooperation may be added by mutual written agreement of each Party's Lead Coordinator.

III. FORMS OF COOPERATION

Specific cooperative projects will be defined in supplemental agreements between the Parties. Cooperation may include:

- a. Exchange of information, publications, reports, technical data, samples, materials, and instruments.
- b. Exchange of scientists, engineers and other specialists for participation in training, project definition activities, research, and technology transfer. Each Party agrees to abide by the other's safety and security requirements.
- c. Jointly funded activities in which NETL and KIER share the cost of performance.

V. LEAD COORDINATOR

Each Party shall designate a Lead Coordinator who shall serve as that Party's principle representative for activities under this MOU.

VI. FINANCIAL COMMITMENTS

NETL's commitments in furtherance of this MOU are contingent on the availability of funds appropriated by the Congress of the United States. KIER's commitments in furtherance of this MOU are contingent on the availability of funds to pursue collaborative activities. Unless otherwise agreed by the Parties, each Party shall be responsible for its own costs incurred in furtherance of this MOU.

VII. INTELLECTUAL PROPERTY

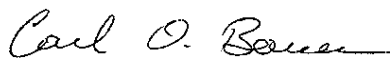
Each Party will retain rights to its own background intellectual property. The allocation of rights to newly generated intellectual property will be determined on a project by project basis.

VIII. EFFECTIVE DATE, AMENDMENT, AND TERMINATION

This MOU is effective upon the date of the last signature by the Parties and shall remain effective for a 5-year period unless terminated in accordance with the terms set forth herein. The MOU may be modified by mutual consent of the Parties.

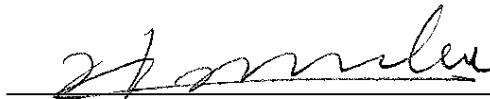
Either Party may terminate this MOU by providing written notice to the other Party at least 90 calendar days in advance.

SIGNATORIES



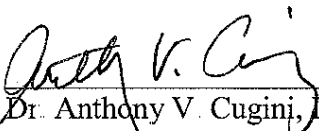
Mr. Carl O. Bauer, Director
National Energy Technology Laboratory
U.S. Department of Energy

Date: _____



Dr. Moon-Hee Han, President
Korea Institute of Energy Research

Date: _____



Dr. Anthony V. Cugini, Director
Office of Research & Development
National Energy Technology Laboratory
U.S. Department of Energy

Date: _____



Dr. Hwa Choon Park, Vice President
Korea Institute of Energy Research

Date: _____