

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND
THE ABU DHABI FUTURE ENERGY COMPANY
ON CLEAN ENERGY COOPERATION

The Department of Energy of the United States of America (DOE) and the Abu Dhabi Future Energy Company (Masdar), hereinafter referred to as the “Participants;”

WISHING to invigorate cooperation between DOE and Masdar in the sustainable energy sphere, through both bilateral and multilateral engagement;

ACKNOWLEDGING the strategic importance of promoting cleaner energy growth through improving alternative energy research and development, energy efficiency, carbon capture and sequestration techniques, buildings technology, biofuels research, water desalination and sustainable water purification systems;

TAKING INTO ACCOUNT the history of cooperative bilateral relations between the United Arab Emirates and the United States of America;

REAFFIRMING the desire to work collaboratively to ensure that the global energy economy operates on terms that are commercially and sustainably driven;

ACKNOWLEDGING the common goals and responsibilities to address climate change; and

DECLARING the intention that their cooperation will reinforce and complement joint participation in multilateral partnerships to achieve clean energy development and use and shared climate change goals;

HAVE REACHED THE FOLLOWING UNDERSTANDING:

SECTION 1

OBJECTIVE

The purpose of this Memorandum of Understanding (MOU) is to establish a framework for mutually beneficial energy cooperation and various forms of collaboration in the areas listed in Section 2.

SECTION 2

AREAS OF COOPERATION

1. Priority areas of cooperation may include the following:

Carbon Capture and Sequestration

- Carbon Capture
 - Improving the efficiency (usage and cost/capital-requirement) of existing technologies such as amines-based technology.
 - Development of next-generation technologies such as solid absorption, membrane, cryogenic, which are expected to yield a significant technological and cost improvement over existing technology.
- Transportation of CO₂
 - Safe and efficient transportation of high-pressure CO₂.
- CO₂ Storage
 - Development of effective long-term storage media/systems.

Buildings Technology

- Building Envelope (active systems)
 - Development of next-generation cooling technologies, including a de-centralized cooling system.
 - Systems integration and building controls and interface with the electrical grid.

Water and Bio-fuels

- Development of cost-effective water purification techniques.
- Energy harvesting from “black-water”.
- Development of efficient and cost-effective desalination techniques (for example, reverse osmosis, membrane).
- Next-generation technologies for converting waste-matter to fuels.

2. The list of areas of cooperation may be expanded by the written consent of both Participants.
3. The Participants may develop a work plan to define activities to implement any of the areas of cooperation listed above.

SECTION 3

FORMS OF COOPERATION

The forms of bilateral and multilateral cooperation in the framework of this MOU may include:

1. Exchanges of scientific and technical information as well as information on clean energy policy;
2. Organization of seminars, workshops, and other events on mutually determined topics;
3. Exchanges of experts, engineers, scientists, and other specialists as jointly determined, including those from industry and other non-governmental sectors;
4. Visits by a Participant's specialist teams or experts to the facilities of the other Participant, including field visits to research labs and industrial sites, for the exchange of technical information and experience;
5. Identification of areas and projects suitable for the possible future conduct of joint research and development and realization of pilot-scale and commercial-scale projects;
6. Facilitation of the ability of Masdar, together with other public and private entities, to participate in DOE-funded projects.
7. Promotion of the potential for DOE to have fast-track demonstration and pilot opportunities in Masdar with research and development support from Masdar Institute;
8. Facilitation of small- and medium-sized enterprises operating in clean technology clusters within the United Arab Emirates and the United States to access each other's markets;
9. Fostering of the development of human capital in the United Arab Emirates and the United States to address the future needs of the clean technology sector.

10. Other forms of cooperation as determined in writing by the Participants at a later time.

SECTION 4

COORDINATION

1. *Principals.* Activities within the framework of this MOU are to be led by the U.S. Secretary of Energy and the Chief Executive Officer of Masdar.
2. *Coordinators.* Principals are to designate Coordinators to coordinate activities to implement cooperative activities within this MOU.
3. *Interaction.* The Principals and/or Coordinators may interact directly and/or through subsidiary bodies, such as expert groups created as appropriate, to advise and consult on priority areas for cooperation under this MOU.
4. *Work Plan.* Implementation of this MOU is to be based on a detailed work plan which the Coordinators are to present to the Principals for their approval within two months of signing the MOU.
5. *Reporting.* The Coordinators are to report quarterly to the Principals on cooperative activities being conducted under this MOU.
6. *Annual Review.* The Principals or their designees should meet at least once a year to review progress of cooperation under this MOU.

SECTION 5

PARTICIPATING ORGANIZATIONS

Based on mutual written determination of the Participants, representatives from other government agencies or organizations in their respective countries, including national laboratories or research centers, may participate in the activities under this MOU.

SECTION 6

GENERAL PROVISIONS

1. Each Participant is responsible for the costs of its participation in all cooperative activities carried out in the framework of this MOU, unless specified otherwise in writing.

2. The conduct of cooperative activities under this MOU is subject to the availability of funds, technical resources, and personnel.
3. Each Participant is to conduct the cooperative activities under this MOU in accordance with applicable laws and regulations, including applicable international agreements.
4. This MOU does not create any legally binding obligations between the Participants.

SECTION 7

COMMENCEMENT, MODIFICATION, AND DISCONTINUATION

1. Cooperative activities under this MOU may commence on the date of its signature.
2. This MOU may be modified in writing by mutual determination of the Participants.
3. The Participants may discontinue cooperation under this MOU by mutual determination in writing. A Participant that desires to discontinue its participation in this MOU should endeavor to give the other Participant at least ninety (90) days advance written notice.

Signed at Washington, in duplicate, on this 26th day of April, 2010.

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:



FOR THE ABU DHABI FUTURE
ENERGY COMPANY:

