

MEMORANDUM OF UNDERSTANDING

between

the MILLENNIUM CHALLENGE CORPORATION

and

the U.S. DEPARTMENT OF ENERGY

I. Introduction

The Millennium Challenge Corporation (“MCC”), acting on behalf of the U.S. Government, has signed funding agreements (“Compacts”) with several developing countries with the aim of reducing poverty through economic growth. A few existing Compacts include a variety of energy projects and it is anticipated that future Compacts will include a variety of energy projects. The U.S. Department of Energy (“DOE”) maintains and otherwise has access to world class technical expertise and technology which could be brought to bear in achieving existing and proposed Compact objectives in the energy sector. MCC and DOE would like to leverage DOE’s access to U.S. technical expertise and technology in favor of achieving Compact objectives in the energy sector. With MCC funding, DOE’s access to technical expertise and technology will be requested to provide technical and analytic services to advance certain energy related Compact objectives. Technical experts will provide technical assistance to MCC and their partner countries in the analysis, design, and implementation of certain energy related projects as specified in Compact proposals and signed Compacts and as will be outlined in individual agreements to be established pursuant to this Memorandum of Understanding (“MOU”). It is the aim of both MCC and DOE (together, the “Parties”) to provide world class technical assistance in developing countries that have proposed or been granted MCC Compact funding in the energy sector. This MOU establishes a framework for the provision of technical services.

MCC is a US Government corporation designed to work with some of the poorest countries in the world. MCC’s mission is to reduce global poverty through the promotion of sustainable economic growth, based on the principle that aid is most effective when it reinforces good governance, economic freedom and investments in people. Before a country can become eligible to receive assistance from MCC, MCC considers the country’s performance on 17 independent and transparent policy indicators. Based on performance on these policy indicators, MCC selects eligible countries, who then submit proposals to MCC and may receive a grant from MCC under an agreement called a Compact. Once an eligible country signs a Compact with MCC (such country is hereinafter referred to as an “MCA Country”), the MCA Country establishes an accountable entity that is responsible for implementing the Compact. To date, MCC has signed 22 Compacts with 22 MCA Countries for a total of \$7.9 billion. These Compacts include projects in, among other sectors, infrastructure, agriculture, energy, health, and education.

DOE has an interest in facilitating sustainable, low-carbon economies in countries around the world. DOE's world class technical expertise and capabilities in energy sector development, policy, innovation, and technology transfer can help MCC ensure that investment in Compact eligible countries is technically sound, feasible, and cost-effective, with positive or neutral climate impacts.

DOE's mission is discovering the solutions to power and secure America's future by advancing energy security, scientific discovery and innovation, safety in handling nuclear materials, and radioactive waste disposal. DOE has a renewed focus in research, development and deployment of transformational technologies to meet U.S. and global climate and energy challenges. DOE sponsors more basic and applied scientific research than any other US federal agency, mostly funded through its system of 17 national laboratories. To nurture and harness science to support clean energy pathways and solve energy and climate change problems across the globe, DOE fosters collaboration on science and technology by building research networks with national labs, universities, and industry in the United States and abroad and developing partnerships with foreign governments and international organizations. DOE's clean energy data and technical resources are online at the DOE's Open Energy Information platform at http://en.openei.org/wiki/Main_Page.

II. Purpose

This MOU provides the framework and scope within which technical assistance may be requested and implemented pursuant to subsequent country- or project-level agreements as may be agreed upon from time to time by and among MCC, DOE, MCA Countries, National Laboratories, and/or other affiliates of MCC and DOE. As a consequence of MCC's operating model, described above, both MCA Countries and MCC will be the likely counterparts to any country- or project-level agreements. Such country- or project-level agreements would need to be agreed consistent with the principles and guidelines specified in the Compact documents, and separately negotiated, pursuant to this MOU.

This MOU is not intended to affect the separate and unique missions, mandates, and accountabilities of the Parties. Unless specifically provided otherwise, the technical cooperation between the Parties as outlined in this MOU or any project-level MOU is not to be considered or construed as a partnership or other type of legal entity or personality. Nothing in this MOU is to be construed as superseding or interfering in any way with any agreements or contracts unrelated to this MOU entered into between the Parties, either prior to or subsequent to the signing of this MOU. Nothing in this MOU is to be construed as an exclusive working relationship, nor as an endorsement of a specific entity, program, person, or technology. The Parties specifically acknowledge that this MOU is not an obligation of funds, nor does it constitute a legally binding commitment by any Party or create any rights in any third party under this MOU or any project-level MOU.

This MOU in no way restricts either of the Parties from participating in any activity with other public or private agencies, organizations or individuals.

This MOU is neither a fiscal nor a funds obligation document. Nothing in this MOU authorizes or is intended to obligate the Parties to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value.

This MOU is strictly for internal management purposes for each of the Parties. It is not legally enforceable and shall not be construed to create any legal obligation on the part of either Party. This MOU shall not be construed to provide a private right or cause of action for or by any person or entity.

III. Objectives

The Parties aim to leverage each other's strengths in developing countries and in energy technology and policy to achieve sustainable development for MCA Countries, recognizing the following points:

Where MCA countries have expressly requested MCC assistance in the energy sector, MCC desires to leverage its funding by using the U.S. Government's technical capability, especially in the areas of energy sector development, energy policy, energy innovation, and energy technology transfer.

DOE has a unique set of expertise and capabilities in energy sector development, energy policy, energy innovation, and energy technology transfer, among others, that may help leverage MCC funds to achieve greater impact in MCA Countries.

The Parties intend to pursue the following areas of initial technical cooperation:

- **Renewable Energy** – use of diagnostic tools to support energy planning
- **Energy Efficiency** – technical assistance in standard setting, testing, certification, and monitoring to achieve stated objectives
- **Electricity Generation** – technical assistance in application of advanced technologies
- **Energy Policy** – technical assistance in policy review and development to achieve stated objectives
- **Research and Development** – cooperation, collaboration, and technology transfer to achieve stated objectives
- **Commercialization of Technology** – technical assistance in the access to and/or commercialization of advanced technology in developing countries to achieve stated objectives
- **Appropriateness of Technology** – technical assistance in determination of fit for purpose technologies
- **Economic Analysis** – including project cost-benefit analysis and overall economic impact
- **Market Analysis** – including supply, demand, and legal/regulatory constraints
- **Training**

The Parties may wish to consider other areas, as appropriate and to consult from time to time on the opportunities afforded by this MOU especially when MCC receives Compact proposals in the energy sector and when DOE undertakes new mandates applicable to MCA-Countries

IV. Responsibilities

MCC and DOE intend to:

- Apprise each other of opportunities for cooperation in the energy sector when MCC is reviewing Compact proposals and implementing Compact programs and DOE is developing initiatives in Compact eligible or recipient countries.
- Advance the use of low-emission, clean energy technologies in developing countries where consistent with Compacts.

MCC intends to:

- Promote sustainable development in its partner countries, including in the energy sector.
- Encourage new clean energy business models and technologies within the limits of MCC guidelines.
- Leverage the energy sector capabilities of the U.S. Government in its partner countries.

DOE intends to:

- Provide technical assistance to MCC and its partner countries in the analysis, design, and implementation of energy projects and in specific national capacity building requests, guided by local needs and priorities.
- Advise MCC on appropriate clean energy technologies, energy opportunity assessment, and energy market and policy reform options during Compact development.
- Provide tools, data and expertise in support of energy components of Compact development and implementation and energy projects under Compacts. Example assistance could include:

Technical, Economic, and Market Assessment:

- Energy system modeling to identify low-cost national and regional options for clean energy investment and pathways to accelerate clean energy deployment
- Evaluation of local and regional energy and infrastructure development plans and assistance in improving clean energy development plans and studies; diagnostic tools to support energy planning and incorporating renewable energy and energy efficiency into national energy sector programs
- *Project design* – data and assessments on energy resource potential; software and information to screen and design energy projects and systems
- *Economic and environmental analysis* – impact analysis of energy project development, including project cost-benefit, life cycle assessment, and overall economic impact
- *Market analysis* – supply, demand, and legal/regulatory constraints

Policy and Market Development:

- Technical analysis of sector issues, such as regulatory reform and tariff design

- Promote policy initiatives which could encourage energy project development
- Energy sector policy analysis and review, including options to incentivize clean energy
- *Energy efficiency* – advice on standard setting, testing, certification, and monitoring of project objectives; computer design tools for commercial and residential buildings for reducing energy consumption and optimizing use of on-site renewable energy
- Technical assistance and training with use of policy and program best practices and adaptation of policies to local circumstances
- Evaluation of and technical support for potential clean energy financing and business development programs (incentives, loans, credit schemes, entrepreneur support, etc.)

Research, Development, and Demonstration:

- *Research and development* – technical assistance with design of in-country technology R&D and innovation programs in areas of mutual interest and benefit, including efforts to support adaptation of existing technologies to local needs
- *Technology appropriateness* – cost and performance characteristics of energy technologies, assessment of fit for the target purpose
- *Technology standards and testing* – assistance with adoption of technology and system performance standards and establishing testing and certification programs
- *Opportunity identification for the application of advanced technologies* for electricity generation, transportation systems, etc.
- *Technology demonstration* – technical assistance with design and implementation of demonstrations of emerging technologies or technologies new to target country
- *Technology commercialization* – identification of commercially available technologies and assistance in establishing incentives and programs to attract suppliers of advanced technologies to the market

Training and Capacity Building:

- Capacity building of host government officials or supporting technical institutions in specific technical, policy, or market areas relevant to the energy sector, including training on DOE supported analysis tools and models
- Training programs for clean energy companies and project developers, analysts, and researchers on technologies and systems, analysis tools, project development and financing best practices, and monitoring and verification

V. Contacts

Contacts for management and development of the relationship between the Parties under this MOU are:

- A. MCC:
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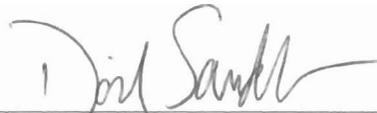
VI. Duration, Extension, and Termination

This MOU is expected to continue for 5 years from the date of signature by both MCC and DOE and may be extended by mutual agreement in writing. MCC or DOE may terminate this MOU at any time by providing written notice to the other party.

Signed at Washington on this 1st day of
February, 2011.



Frances Reid
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David Sandalow
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