

## **Memorandum of Understanding**

between

### **Solar Energy Centre**

**Ministry of New and Renewable Energy**, Government of India  
Block No.14, CGO Complex, Lodhi Road, New Delhi – 110003, India

- hereinafter referred to as 'SEC'

and

### **Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e. V.,**

Hansastraße 27 c, 80686 München

as legal entity for its

### **Fraunhofer Institut für Solare Energiesysteme (ISE)**

- hereinafter referred to as 'ISE'

Whereas,

The Fraunhofer-Gesellschaft is Europe's largest research institution. The Fraunhofer-Gesellschaft develops products and processes right up to commercial maturity. Individual solutions are sought in direct contact with the customer. The key objective of the Fraunhofer-Gesellschaft is to transform scientific expertise into applications of practical utility;

as a link between academic research and business practice, the Fraunhofer-Gesellschaft contributes considerably to technology transfer between universities and industry;

Fraunhofer Institute of Solar Energy (FISE) is one of the 60 institutes of Fraunhofer-Gesellschaft. It is one of the most prominent international research institutions in the field of renewable energy materials, technology and systems.

Whereas,

the Ministry of New and Renewable Energy (MNRE), the nodal Ministry of the Government of India for all matters relating to new and renewable energy.

the Solar Energy Centre (SEC) is a premier applications research and technology evaluation institute in India and is a part of MNRE. SEC works in the area of solar energy and hydrogen and serves as an interface between government, research organizations and industry.

This Memorandum of Understanding (MoU) memorializes the Participants' intent to cooperate to maximize the benefit of their respective institutional interests.

## **HAVE REACHED THE FOLLOWING UNDERSTANDING:**

### **Article 1 – Objectives & Fields of Cooperation**

The main objective of cooperation under the MoU would be to implement research/demonstration/pilot projects between SEC and ISE in the mutually identified areas after detailed deliberations.

Both the Parties agree to co-operate in various areas of solar energy and Hydrogen & Fuel cells as detailed below:

#### **1. Solar Photovoltaic (PV)**

- Co-operation in testing, evaluation, characterization of PV modules and calibration of Reference modules and cells
- Testing, Monitoring, performance evaluation and analysis of Solar PV systems including stand-alone (lighting, telecom applications), CPV and Large capacity PV power plants
- Establishment of facilities for testing of large capacity inverters
- Long term outdoor performance studies of different technology PV modules and Degradation analysis of the EVA/ polymers on different aging PV modules
- Joint studies on design and analysis of distributed generation and smart mini-grids
- Technical assistance for Feasibility Study, Economic Assessment, system Design etc.

#### **2. Solar Thermal Systems**

- Research co-operation in solar thermal systems
  - Concentrating solar thermal power

- Solar Industrial Process Heat
- Solar cooling
- Solar desalination
- Evaluation of concentrating solar collectors and systems
  - Accelerated testing procedures
  - Optical testing of concentrating surfaces
  - Thermal performance of concentrator systems
  - Development of test standards and test protocols for concentrating solar thermal collectors

### 3. Hydrogen and Fuel Cells

- Co-operation for hydrogen and fuel cell based system development and implementation
  - Hydrogen and fuel cells for remote rural electrification
  - Establishment of Test bench for Fuel Cells at Solar Energy Centre
  - Hydrogen generation demonstration system based on concentrated PV directly combined with a PEM electrolyser at Solar Energy Centre
4. Exchange of Research Scholars in solar PV, solar thermal, hydrogen and fuel cells

The areas mentioned above are however, only illustrative and not exhaustive. Further areas of co-operation can be identified through mutual consultations.

## **Article 2 - Terms of Cooperation**

All terms and conditions relating to specific projects under this Memorandum of Understanding shall be agreed upon separately in individual agreements.

Although the parties wish to cooperate in future projects this Memorandum of Understanding does not impose any duty on one of the Parties to disclose any information to the other Party nor to enter into any individual agreement or obligation.



### **Article 3 – Results**

Arrangements regarding intellectual property shall be formally agreed in the terms and conditions for the individual contracts on a case to case basis. However, it is anticipated that each Party shall lay claim to intellectual property arising out of research conducted by its employees. In the event that intellectual property is developed jointly by employees of both Parties, joint ownership shall apply and the Parties will agree on a strategy for the protection and exploitation of the intellectual property.

### **Article 4 – Confidentiality**

SEC and ISE shall, for the duration of the Memorandum of Understanding not make accessible to third parties information of a technical or commercial nature received from the other Party and declared to be confidential. This however, shall not apply to information

- which is known or generally accessible to the other party or to the public, or
- which becomes known or generally accessible to the public after disclosure without any involvement or fault on the part of the other party, or
- which corresponds to information disclosed or made accessible to the other party by an entitled third party, or
- which is independently developed by an employee of the other party not in possession of the information disclosed, or
- which is required, by the advice of legal counsel, to be provided to any government, judicial, regulative or administrative body or to a listing authority, self-regulatory body or any entity similar to the foregoing.

### **Article 5 - Duration**

This Memorandum of Understanding (MoU) shall enter into force on date of its signature and shall remain in force until either Party gives notice of termination of the MoU 90 days in advance.

### **Article 6 – Dispute Settlement**

Any dispute arising out of the interpretation of this MoU shall be mutually settled through negotiations between the Parties. In case of failure to settle

the dispute through negotiations, either Party may submit the dispute to the arbitration under International Chamber of Commerce (ICC), Paris.

### **Article 7 - Miscellaneous**

As far as any export licenses are necessary for the fulfilment of any contractual obligation of this Memorandum of Understanding these obligations are under the proviso of the granting of the corresponding license.

Ancillary agreements, amendments and supplements hereto must be made in writing.

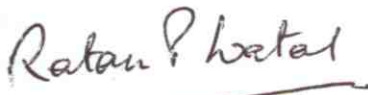
Signed on 11<sup>th</sup> of April 2013 in two originals in English.

On behalf of:

Solar Energy Center  
Ministry of New and Renewable Energy  
Government of India

On behalf of:

Fraunhofer-Gesellschaft zur  
Förderung der angewandten  
Forschung e. V.  
Deutschland



Mr. Ratan P. Watal  
Secretary



Prof. Dr. Eicke Weber  
Institute Director,  
Fraunhofer-Institut für Solare  
Energiesysteme ISE

Place: Berlin

Date: 11<sup>th</sup> of April, 2013