

Cell and module manufacturing cooperations  
Hannover Messe

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## 200 MW

*MODULE MANUFACTURING*

*EPC*

*OPERATION & MAINTENANCE*

**400 MW BY 2015**  
**600 MW BY 2016**  
**1.2 GW BY 2019**



- State of art module manufacturing of 200 MW capacity at present
- Technically advanced production processes
- Current module efficiency > 16% (multi-Si)
- India's only Tier 1 module manufacturer (BNEF)
- Highest performance for PTC ratings (*72 cell*)
- Highest performance globally for NOCT efficiency (*OST Energy*)
- Cell production lines of 200MW capacity to be set up by 2016

Our ISO 9001 and ISO 14001 certified manufacturing facility is strategically located in Falta, West Bengal - **India**

- The MoU will manifest the following main intentions of both parties:
- Undertake R&D activities in industrial PV cell and module manufacturing to improve efficiency at minimized cost
- Fraunhofer ISE and Vikram support each other in set-up of local R&D and academic infrastructure
- Fraunhofer ISE will bring in its expertise to support Vikrams aim to rapidly expand its manufacturing capabilities
- Both parties will cooperate and support each other in equipment and material supply analysis, benchmarking and testing
- Fraunhofer ISE will offer its profound knowledge for qualification and reliability testing of final solar cell and module products



Centrotherm AG is a world class manufacturer of cell production tools and addresses levels of competencies across crystalline silicon solar cell manufacturing value creation chain i.e. process, technology, system and application.

*The present MoU aims to:*

- Collaborate and use Centrotherm production equipments and manufacturing expertise to improve cell efficiency and productivity with intent to reduce cost of solar cell manufacturing in high volume.
- Further intend to work on Research & Development for materials, process improvements and technology innovations for the future.

- Meyer Burger is a leading global technology group focusing on four technology areas of silicon photovoltaic manufacturing viz. crystallization, wafering, cell and module.
- Vikram Solar has an existing relationship with Meyer Burger and uses Meyer Burger lamination equipments and sun simulators for module manufacturing lines

*Scope of the MoU with Meyer Burger is the following:*

- Supply of selected solar cell and module manufacturing equipment.
- Collaborate on process improvements on solar cell and module manufacturing, Research & Development for materials, processes and device technologies