Course 1- Energy Access and Human Development

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| A. Name of the Institute | The Energy and Resources Institute (TERI) |
| B. Name/Title of the Course | Energy Access and human development |
| C. Course Dates with Duration in Weeks  *[note: dates may be fixed keeping in mind with festivals, holidays, weather conditions, availability of accommodations, etc. No request for change in dates, once approved/ circulated will be entertained]* | **05-09-2016 23-09-2016 3 weeks** |  |
| D. Eligibility Criteria for Participants  1. Educational Qualifications  2. Work Experience required, if any  3. Age Limit  *[note: ITEC norms is 25-45 years]*  4. Target Group *[Level of participants and target ministries/departments etc. may be indicated]* | 1) Bachelors degree in technology or science  2) 2 years  3) 25- 45 years  Government officials from the Ministry;  Executives from public sector organizations;  Representatives of accredited NGOs working on energy & conservation for at least past 5 years and involved in promotion of micro-enterprises in rural areas  Personnel from technical and/or financial Institutes  25 – 45 years |
| E. Aims & Objectives of the Course | Sensitization of the participants on the planning, designing, implementation and utilization of Solar technology for livelihood based projects. The course aims to explain the extent to which solar technology can be utilized in improving the energy access scenario in the rural areas through creation of energy enterprises at local level to meet the energy needs. |
| F. Course Contents / Syllabus *[please attach course details / profile in Word Format for uploading on ITEC website]* | Module 1: Introduction to the Solar Technology  Introduction to Solar technologies  Various applications of Solar energy systems and their relevance  Advantages and limitations of solar technology  Current programs, policies & trends of select developing countries  Advancement of solar technology: trends and costs  Module 2: Solar Energy Systems – Assessment, Design, Economics, Operations and maintenance  Components of Solar PV and thermal systems  Solar Systems: planning and design including use of RETScreen  Pre-feasibility, Feasibility and DPR for Solar Energy Projects  Solar energy system – operation, maintenance and trouble-shooting  Energy Storage – Batteries  Overview of solar PV standards, conformity and quality  Cost Economics of Solar energy system  Module 3: Project Management and design of business models  Planning and designing of livelihood based rural energy projects  Case-study analysis on various institutional and business models (ownership, delivery channels, market and/or financial linkages etc)  Case studies on solar energy based projects and Lighting a Billion Lives initiative for enhanced energy access and livelihood generation  Analysis of solar based livelihood projects through experience sharing  Solar energy based livelihood projects – Issues and Challenges  Module 4: Monitoring and evaluation of projects  Monitoring of solar energy systems including concept of remote monitoring  Evaluation and impact assessment  Module 5: Exposure Visits to Solar Projects & Manufacturing Facility  Visit to a solar PV module manufacturing facility in North India  Visit to a solar lantern assembly unit in Noida  Learning by practice –Visit to Solar Charging Station / Solar Power Plant  Visit to Northern India cultural and heritage sites  Tools and techniques for undertaking feasibility/scoping survey of decentralized solar PV projects  Module 6: Group Exercises & practical sessions  Hands-on training of installation and commissioning of solar PV systems  Design of service delivery and business model for solar energy based livelihood projects for participants’ countries. |
| G. Mode of evaluation of performance of the participants | Class participation during the course  A brief report or presentation by the participants summarizing the learning from the course |