

Terms of reference (ToRs)

Engagement of a consultant to conduct technical evaluations of selected rooftop solar PV power plants in India – Moving from kW to kWh part II	Project number/ cost centre: 16.2080.6-001.00
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List of abbreviations:

AC	Alternating Current
DC	Direct Current
DC	Development Co-operation
DISCOM	Distribution Company
I-V	Current-Voltage
kW	Kilowatt
kWh	Kilowatt-hour
kWp	Kilowatt-peak
MNRE	Ministry of New and Renewable Energy
MPPT	Maximum Power-Point Tracker
O&M	Operation and Maintenance
OEM	Original Equipment Manufacturer
PID	Potential Induced Degradation
PR	Performance Ratio
PV	Photo-Voltaic
SECI	Solar Energy Corporation of India
ToR	Terms of Reference

1. Context

Under the Indo-German technical cooperation, the Government of the Federal Republic of Germany is cooperating with the Government of India on the project, Indo-German Solar Energy Partnership - Photovoltaic Rooftop Systems (IGSP-PVRT). The project is financed by the German Federal Ministry for Economic Cooperation and Development and is being implemented by GIZ in partnership with Ministry of New and Renewable Energy (MNRE), Government of India.

Under the National Solar Mission, the Government of India has set a target of meeting an installed capacity of 40,000 MW of rooftop solar photovoltaic by 2022. The official statistics of the MNRE show that the currently installed capacity is around 2,500 MW as of 31.03.2020.

While the efforts are being directed towards substantially increasing the rooftop solar capacity addition with the aim of meeting the target of 40 GW, it is imperative to ensure that these rooftop solar systems perform optimally – with high specific yields (kWh/kWp). The current approach towards this goal has been to increase the installed capacity (kWp) of rooftop PV systems across various sectors. Additionally, the government subsidies for rooftop PV plants are disbursed based on the capacity installed and not the generation achieved from the installed PV plants. The rooftop solar team at the German Development Cooperation (GIZ) has analysed the specific yields of various PV systems and has found that many systems currently being installed are performing sub-optimally. There is a need to identify the causes of sub-optimal performance, quantify those in terms of contribution to loss in generation and propose cost-optimal solutions to fix the quality issues.

Understanding the importance of ensuring that these installed rooftop solar systems perform optimally, GIZ undertook a technical study titled kWtokWh in 2019. The study was aimed at currently installed rooftop PV systems to identify the causes of sub-optimal performance, quantify those in terms of contribution to loss in generation and propose cost-optimal solutions to fix the quality issues. The study involved the on-site analysis of the selected rooftop PV plants along with analysis of the contracts, warranties and O&M practices in four locations in India and covered a range of segments including government, educational, residential and commercial PV plants. The results from the study have highlighted significant shortcomings in installation and maintenance practices for rooftop PV systems with issues such as mechanical damages in cells, soiling and improper plant design and construction among other things which were present in a significant number of plants. A website for the kWtokWh study (www.kwtokwh.in) has also been developed where the results of the Phase I of study have been uploaded.

Building on the knowledge gained in the earlier study, GIZ in partnership with the Ministry of New and Renewable Energy (MNRE) aims to conduct the Part II of the kWtokWh study. The focus on this next phase of the study will be to analyze additional sites along with delving into detailed causes for cell cracking by analyzing the logistics aspects and mounting structures for the PV plants. Under this ToR, GIZ wishes to hire the services of a consulting company/companies to carry out on-site technical evaluations along with logistics monitoring of selected rooftop PV power plants in India. Further, the approach of the current assignment will be to help improve the generation of the plants being studied and to help the Indian rooftop solar sector in improving actual generation.

2. Tasks to be performed by the consultant

The objective of this assignment is to conduct quality evaluation of selected rooftop solar PV systems in India to quantify the issues leading to sub-optimal performance and suggest specific measures along with cost benefit analysis to increase their performance. The evaluation would also include identifying aspects related to logistics, such as transportation and handling of the PV modules to the site. The results of the study would lead to identifying issues, which were previously not being considered and eventually synthesizing a solution, potentially in the form of business models for O&M Companies.

The assignment will be conducted in two phases and a total of 60 sites will be evaluated. The broad scope for both phases shall remain the same.

Phase 1: 30 sites in two locations/ states

Phase 2: 30 additional sites in two different locations/ states

The consultant is responsible for providing services according to the tasks outlined as follows:

Task 1: Shortlisting of sites

The consultant shall identify a broad list of 60 sites in at least 4 different locations as per the conditions below:

- I. Installed capacity:
 - a. Between 1-5 kWp (at least 10% of sites)
 - b. 20 kWp and above

- ii. Specific Yield:
 - a. Less than 1100 kWh/kWp (70% of sites)
 - b. More than 1200 kWh/kWp (30% of sites)

- iii. Age of the plant:
 - a. More than one year old
 - b. Recent installations of less than one year old (at least 10 % of sites)
 - c. Ongoing installations (For logistics monitoring; refer to Task 3)

- iv. Availability of reliable generation data

The consultant shall identify a broad list of potential sites themselves by coordinating with the respective site owners, DISCOMs, State Nodal Agencies, Solar Energy federations, et cetera. The aim is to identify a good mix of underperforming as well as good performing plants meeting different criteria.

The consultant shall submit a methodology for preparing the broad list of sites based on the criteria as listed above. The list of shortlisted sites shall be shared with GIZ for mutual agreement before proceeding further. GIZ shall take inputs from MNRE to select the final list of sites and shall convey the same to the consultant.

The consultant shall take up discussions with system owners for evaluating their systems and arrange all necessary approvals and permissions to conduct the study. It is expected that finally 60 systems owners would agree and cooperate in the evaluation. Any changes or deviations from the agreed selection criteria will have to be in consultation with GIZ.

Task 2: On-Site inspection of grid connected rooftop PV plants

The inspections shall have a 'solution oriented' approach to the identified issues, failures or deviations from international standards and the Technical Specifications mentioned by MNRE. The consultant shall also refer to the technical standards mentioned in latest tenders released by the DISCOMs for rooftop solar in prospective study locations. The consultant shall identify the gaps in designing, planning, installation and component quality, maintenance and operation; and logistics related issues of rooftop solar PV Systems.

The key intent of the study is to not only identify the reasons of under-performance but to also separately quantify these reasons for each plant, to the extent possible, and to propose & rank the cost-optimal pragmatic solutions (along with cost - benefit analysis) to address the reasons which would lead to significant increase in the performance of the system relative to present performance. Wherever quantitative assessment is not possible, the consultant shall analyse the reason qualitatively and suggest measures to either improve generation or increase life of the system / components.

The consultant shall coordinate the appointments with the system owners for the on-site system survey and map out a schedule for the complete survey. The consultant shall also collect all the documentation required for assessing the warranties, contracts and/or system performance and any other documents as required for completing the survey. The consultant should possess or arrange at its own cost, all the necessary instruments for conducting the on-field testing; and the licensed version of the software tools. With this context, the consultant shall identify the reasons of underperformance resulting to sub-optimal system performance and major deviations on safety aspects and life of the system, as indicated below but not limited to:

a) System design & planning

Reasons for under-performance attributed to following non-exhaustive aspects:

- i. Orientation, inclination, inter-row shading, far shadow and near shadow analysis using shadow analyser like solar path finder and simulation software.
- ii. Selection of PV modules and inverters (string, multi MPPT, optimizer).
- iii. Issues attributed to quality, handling, and operation of PV modules, inverters and other standard components.
- iv. DC cable sizing, combination of strings, placement of strings according to shadow profile and orientation of plan, inverter sizing (DC: AC ratio).
- v. String and module level performance
- vi. Location of inverters, combiner boxes and other equipment
- vii. Statics and dead weight analysis suitable for wind load conditions
- viii. System protection for over current and over voltage as per site climatic and geographical conditions
- ix. Fire safety compliances

Specifically for each site, the consultant shall conduct on-site tests for identifying general degradation rate, PID, hot spots, soldering failures, micro-cracks, by-pass diodes among others using industry Standards measuring tools like IV tracer, Infra-red camera and

Electroluminescence on modules. In addition, string level electrical measurements (I-V curve) should be plotted. A detailed shadow analysis should be carried out at each plant.

b) Installation

Analysis of following aspects of the solar PV system:

- i. Mounting structure, type and module attachment
- ii. Module backsheet quality and level of degradation
- iii. Cable routing and conduit
- iv. Grounding and equipotential bonding
- v. Grid instability and set-points of inverters
- vi. Adequate Provision and arrangement for system accessibility for maintenance

c) Mounting structure

The consultant shall analyse in detail the mounting structure used based on the following factors:

- i. Design of the mounting structure
- ii. Material used
- iii. Structural integrity
- iv. Ease of installation/maintenance of PV modules
- v. Environmental factors such as wind loading, corrosion, et cetera

The aim will be to identify whether the mounting structure has a significant impact in the development of cell cracks in the PV modules. Further, the consultant shall quantify the same to the extent possible.

d) Operation and maintenance

The consultant shall analyse the following factors:

- i. Yield loss due to soiling - Cleaning frequency, cleaning method (dry or wet), availability of water, hardness of water used, type and quality of scrubber used,
- ii. Maintaining inverter ventilation and cooling System,
- iii. Schedule of preventive maintenance practices and general awareness on maintenance.
- iv. Availability of remote monitoring and owner's awareness on the same.
- v. Checking integration of inverter with the grid.

e) Contracts – warranties

The consultant shall review the following aspects :

- i. The warranties provided by the OEM and their applicability under the operation conditions.
- ii. Analysis of existing O&M contract shall be done for potential means to address some of the identified issues.
- iii. Review reaction time of the O&M agency, in case of valid contracts.
Any other major findings having implication on safety of living beings and property

f) System performance

The Performance Ratio shall be evaluated considering the availability of the data and efforts would be made to calculate it for each of the 60 systems. Correlations can be drawn between the estimated PR and actual PR derived from the study.

It is expected that the consultant carries with them all the necessary equipment for performing on-site survey of systems with sufficient details. An indicative list of equipment includes: I-V tracer, Infrared camera, Electroluminescence tester, Irradiation sensor, shadow analyser, temperature sensor, clamp meters, volt meter among others. The Instruments used must be calibrated.

Task 3: Logistics Monitoring

The consultant shall aim to identify the logistics related challenges faced by 20 currently installed plants (out of the selected 60 sites) and shall find the exact reasons for mechanical damages in the PV modules and cells. The consultant shall compare the flash lists of the modules from the manufacturer with those of the onsite evaluation for identifying issues. Any other similar approach to identify the issues can be suggested by the consultant to GIZ.

Further, the consultant shall identify at least 10 Rooftop PV plants of different sizes (out of the selected 60 sites) currently being installed for real time monitoring of logistics related issues. The consultant shall map out each point in the supply chain for the PV modules from the manufacturer's warehouse to the EPC company/sub-vendor and then to the installation site. The consultant shall quantitatively test/monitor the PV modules at each step to identify the exact point where chances of mechanical damages are highest for the PV modules. The detailed approach for the methodology adopted by the consultant shall be shared with GIZ.

Task 4: Reporting & recommendations on solutions for specific plant and for the sector at large

Once the on-site inspection has been carried out, the consultant shall perform the desktop analysis by simulating the systems over solar PV design software such as PV Syst and use other analytical approaches to quantify the failures, link examined issues and underperformance. The quantification of failures and/or under performance is translated to recommended measures together with cost-benefit analysis of each measure for the system owners for achieving substantially higher specific yield/system performance. The analysis is performed, and results are documented for all the 60 systems evaluated on-site. A separate analysis shall be performed for the systems selected for logistics monitoring separately.

Further, the under-performing PV plants analysed shall be compared against the best performing plants. A benchmark shall be established for the performance of the PV plants in the locations where the study has been carried out based on the results of the analysis.

The consultant shall suggest appropriate O&M related business models to tackle issues identified during the course of the study. It is expected that the analysis and suggestions would be of a level that any third party solar O&M company and DISCOM would trust the results to implement the suggested recommendations.

A report and a presentation shall be prepared detailing the approach and methodology of the study along with implementable recommendations for improving the quality and safety aspects of the rooftop solar systems at large. All the reports shall be in a format that could be published and should be developed professionally. The format of the results shall be as per the requirements of GIZ and shall be agreed upon before publishing.

Task 5: Webpage on results

The consultant is required to upload in phases all the results, graphs, pictures and reports to the current web-page (www.kwtokwh.in). The format for uploading the information shall be as per the current web-page and shall be done in coordination with GIZ.

2.1 Cumulative deliverables

The consultant is expected to cover all aspects elaborated under the list of tasks while submitting the deliverables as mentioned below:

- A. Phase 1
 - i. Individual plant inspection report for all 30 sites
 - ii. Single report with compilation of key findings from all 30 inspected plants along with recommendations
 - iii. Upload results of Phase 1 to Web-Page
 - iv. Presentation on the results of Phase 1
- B. Phase 2
 - i. Individual plant inspection report for all 30 sites
 - ii. Single final report of all 60 sites with compilation of key findings from all inspected plants along with recommendations
 - iii. Upload results of Phase 2 to Web-Page
 - iv. Final presentation on the results of all sites

Certain milestones, as laid out in the table below, are to be achieved by certain dates during the contract term,

Milestone	From date of signing of contract
Submission of overall concept / kick-off meeting	3 weeks
Finalisation of inception report	5 weeks
Shortlisting of sites for Phase 1	10 weeks
Phase 1 inspections	18 weeks
Shortlisting sites for Phase 2 and reports of Phase 1	22 weeks
Phase 2 Inspections	28 weeks
Phase 2 reports, final report and presentation	32 weeks

Period of assignment: The duration of the contract shall be for a period of one year from the date of signing the contract.

3. Concept

In the bid, the bidder is required to show how the objectives defined in Chapter 2 are to be achieved, if applicable under consideration of further specific method-related requirements (technical-methodological concept). In addition, the bidder must describe the project management system for service provision.

Technical-methodological concept

Strategy: The bidder is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1). Following this, the bidder presents and justifies the strategy with which it intends to provide the services for which it is responsible (see Chapter 2).

The bidder is required to present the actors relevant for the services for which it is responsible and describe the **cooperation** with them.

The bidder is required to present and explain its approach to **steering** the measures with the project partners and its contribution to the results-based monitoring system.

The bidder is required to describe the key **processes** for the services for which it is responsible and create a schedule that describes how the services according to Chapter 2 are to be provided. In particular, the bidder is required to describe the necessary work steps and, if applicable, take account of the milestones and contributions of other actors in accordance with Chapter 2.

The bidder is required to describe its contribution to knowledge management for the partner and GIZ and promote scaling-up effects (**learning and innovation**).

Other specific requirements

The consultant shall strive for gender equality in their proposed staff in the technical proposal.

Project management of the consultant

The bidder is required to explain its approach for coordination with the GIZ project.

- The consultant is responsible for selecting, preparing, training and steering the experts assigned to perform the advisory tasks.
- The consultant makes available equipment and supplies (consumables) and assumes the associated operating and administrative costs.
- The consultant manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ.

The consultant reports regularly to GIZ in accordance with the General Terms of Contract of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (Local) from 2017

In addition to the reports required by GIZ in accordance with the General Terms of Contract, the consultant submits the following reports:

- Inception report
- Contributions to reports to GIZ's commissioning party
- Brief quarterly or half-yearly reports on the implementation status of the project (5-7 pages)

The bidder is required to draw up a **personnel assignment plan** with explanatory notes that lists all the experts proposed in the bid; the plan includes information on assignment dates (duration and expert days) and locations of the individual members of the team complete with the allocation of work steps as set out in the schedule.

4. Company Profile

To be eligible to participate in this tender, the leading consulting firm must have a minimum of 4 years of experience in the field of renewable & solar energy consulting and/or third-party inspections of solar photovoltaic projects. The firm must also have a minimum experience of 2 years related to logistics of Solar PV. Additionally, the firm may form a consortium with relevant partners to undertake specific tasks as part of the assignment.

The leading consulting firm shall meet the following minimum requirements and submit documentary evidence, the reference projects shall have value more than INR 25 Lakh (INR 2.5 million)

- i. Conducted at least 2 third party inspection of rooftop solar plants in India on behalf of a DISCOM, State Nodal Agency, MNRE or SECI in the last 3 years.
- ii. Executed a minimum of 3 projects in the field of rooftop solar photovoltaic related to consultancy, policy development or installations in the past 3 years
- iii. Average annual turnover of the firm for the last 3 years shall be at least INR 3 Crore (INR 30 million)
- iv. Experience of conducting third party inspections of rooftop solar plants internationally shall be an added advantage.

Number of employees as on 31.03.2020 shall be at least 20 persons.

Additionally, the consortia partners shall meet the following criteria:

- i. Executed at least 2 projects related to the core technical capabilities of the firm in the last 2 years in either of the following sectors: Solar PV Logistics, Solar PV consultancy or PV system/structure manufacturing.
- ii. Executed at least 1 project in India in the last 2 years and/or have been operating in India for the last 2 years.
- iii. Average turnover of the company for the last 3 years shall be at least INR 25 Lakh (INR 2.5 million)

5. Personnel concept

The bidder is required to provide personnel who are suited to filling the positions described, on the basis of their CVs (see Chapter 8), the range of tasks involved and the required qualifications.

The below specified qualifications represent the requirements to reach the maximum number of points.

Team leader: Senior system engineer– Solar Energy (1 position)

Tasks of the team leader

- Overall responsibility for the advisory package of the consultant
- Ensuring the coherence and complementarity of the services of the consultant with other services delivered by the programme at local and national level
- Consideration of cross-cutting themes (e.g. gender equality)
- Personnel management, in particular identifying the need for short-term assignments within the available budget, as well as planning and steering assignments and supporting local and international short-term experts
- Ensuring results monitoring is conducted
- Regular reporting in accordance with deadlines
- Responsibility for controlling the use of funds and financial planning in consultation with GIZ's officer responsible for the commission
- Supporting the officer responsible for the commission in updating/adapting the project strategy, in evaluations and in preparing a follow-on phase

Qualifications of the team leader

- Education/training (2.1.1): University qualification (Master's degree) in Electrical Engineering, Mechanical Engineering, Renewable Energy or related technical fields
- Language (2.1.2): Good business language skills in English.
- General professional experience (2.1.3): 10 years of professional experience in the Energy sector in the field of solar photovoltaic and renewable energy.
- Specific professional experience (2.1.4): 5 years in professional/consulting experience in quality and performance evaluation of rooftop solar photovoltaic systems.
- Leadership/management experience (2.1.5): 6 years of management/leadership experience as project team leader or manager in a company
- Regional experience (2.1.6): 2 years of experience in projects in India
- Development Cooperation (DC) experience (2.1.7): 2 years of experience in DC projects

Project Manager: Electrical engineer (1 position)

Tasks of the project manager

- Responsible for supporting the Team leader in developing and executing the tasks 1 to 5
- Training/capacity building of the pool of inspection engineers

Qualifications of the project manager

- Education/training (2.2.1): University qualification (Degree) in Electrical Engineering or allied technical fields.
- Language (2.2.2): Good business language skills in English
- General professional experience (2.2.3): 5 Years of experience in the energy sector

- Specific professional experience (2.2.4): 3 years' experience in setting up or quality inspections of grid connected and off-grid solar rooftop plants
- Leadership/management experience (2.2.5): 5 years' experience in project management or consulting
- Regional experience (2.2.6): 1 year experience in India
- Development Cooperation (DC) experience (2.2.7): 2 years' experience in working with DC

Logistics Expert (1 position)

Tasks of the logistics expert

- Responsible for supporting the Team leader in tasks 1 to 5 with an emphasis on logistics related topics of the assignment

Qualifications of the project manager

- Education/training (2.3.1): University qualification (Degree) in Logistics management, Supply Chain management or allied technical fields.
- Language (2.3.2): Good business language skills in English
- General professional experience (2.3.3): 5 Years of experience in Logistics and transportation
- Specific professional experience (2.3.4): 3 years' experience in logistics of Photovoltaic components.
- Leadership/management experience (2.3.5): 5 years' experience in project management or consulting
- Regional experience (2.3.6): 2 years' experience in India
- Development Cooperation (DC) experience (2.3.7): 1 years' experience in working with DC

Pool of Inspection engineers: Electrical engineer/ Electrical apprentice (Minimum 3 / Maximum 8)

Tasks of the Inspection engineer

- Responsible for supporting the Team leader and project manager in conducting on-site evaluations of the selected rooftop PV projects
- Coordination with the site owners for setting up appointments for on-site evaluations

Qualifications of the Inspection engineer

- Education/training (2.6.1): University qualification (Degree) in Electrical Engineering or allied technical fields.
- Language (2.6.2): Good business language skills in English Basic knowledge of Hindi required for at least 1 inspection engineer
- General professional experience (2.6.3): 3 years of experience in Indian energy sector
- Specific professional experience (2.6.4): 2 years of experience in setting up or quality inspections of grid connected and off-grid solar rooftop plants
- Regional experience (2.6.5): 1-year experience in India
- Development Cooperation (DC) experience (2.6.6): 1 years' experience in working with DC

Other requirements for the team

- The consultant shall ensure proper training of the inspection engineers for the on-site inspection by organizing one-on-one training sessions
- Atleast one inspection engineer shall be available at each site

- The consultant shall ensure arrangement of adequate labour on-site to support the inspection team in carrying out the on-site inspections

Soft skills of team members

In addition to their specialist qualifications, the following qualifications are required of team members:

- Team skills
- Initiative
- Communication skills
- Sociocultural competence
- Efficient, partner- and client-focused working methods
- Interdisciplinary thinking

The bidder must provide a clear overview of all proposed experts and their individual qualifications.

Other specific requirements

In case of any additional requirements/request from the Ministry of New and Renewable Energy for additional sites, the consultant shall be available for conducting the inspections. The costing for the additional sites will be borne by GIZ based on the initially bid price for each site.

6. Costing requirements

Assignment of personnel

Team leader (1 position): On assignment for 30 expert days

Project Manager (1 position): On assignment for 100 expert days

Pool of Inspection Engineers (Minimum 3 / Maximum 8): On assignment for total 270 expert days

Logistics Expert (1 position): On assignment for 75 expert days

Travel

The bidder is required to calculate the travel by the specified experts and the experts it has proposed based on the places of performance stipulated in Chapter 2 and list the expenses separately by daily allowance, accommodation expenses, flight costs and other travel expenses. The indicative number of days for calculating travel expenses is as below:

Accommodation (total): 220 days

No of flights: 20

Local transportation: 140 days

Per diem (for onsite activities): 220 days

7. Inputs of GIZ or other actors

GIZ shall help in steering the study along with the implementation partners.

8. Requirements on the format of the bid

The structure of the bid must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) is to be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). It must be legible (font size 11 or larger) and clearly formulated. The bid is drawn up in English (language).

The complete bid shall not exceed 30 pages (excluding CVs and company experience).

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs shall not exceed 4 pages. The CVs must clearly show the position and job the proposed person held in the reference project and for how long.

If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment.

Please calculate your price bid based exactly on the aforementioned costing requirements. In the contract the consultant has no claim to fully exhaust the days/travel/workshops/ budgets. The number of days/travel and the budget amount shall be agreed in the contract as 'up to' amounts. The specifications for pricing are defined in the price schedule.

The option is exercised in the form of an extension to the contract based on the already offered individual rates.

9. Further requirements

- a) The entire proposal including approach and methodology, CVs etc, needs to be in English. The CVs need to be in uniform format with a maximum of four pages.
- b) The proposal should clearly line out how the consultants complement each other according to their fields of expertise to give evidence that all relevant work fields are covered appropriately.
- c) In case the bidder is a consortium, a clear proposal (based on deliverables) is to be submitted along with clear definition of the roles and responsibilities of each member of the consortium.
- d) The evaluation of the proposal will follow the attached evaluation matrix.
- e) All communication with media (TV, radio, print and other media) must be approved by the responsible person of GIZ
- f) Timelines shall be strictly adhered and any delay in any of the deliverable shall be reported and aligned with GIZ in advance.
- g) All work results and deliverables must be acceptable to GIZ.
- h) The different phases / activities shall be documented in a professional manner to be shared with relevant stakeholders for information dissemination.

- i) The Consultant should not be dependent on GIZ or the partner distribution licensee for the supply of documents / data; rather it should gather data and information from already existing resources available wherever possible.
- j) All work results, including reports must be in Format, design and layout as specified by GIZ and must follow GIZ design guidelines
- k) All phases shall be coherent and complimentary in nature and they should not be considered as individual isolated phases
- l) The consultant should at all times of the assignment possess the copyrights (licenses in the case of software packages) of the documents, pictures, technical papers, standards used in the study
- m) The software used for simulation, data processing or any other task related to the assignment should be commercial packages available in the market for any person. No proprietary software package is to be used. The bidders should propose the software to be used in their bids and highlight the benefits and limitations related to the assignment.
- n) Cost of venue, food etc for organizing round-tables, workshops shall be borne by GIZ separately. All travel, accommodation, food etc for the staff of the Consultant must be borne by them and have to be budgeted in their proposal. Expenses incurred can only be reimbursed if sufficient bills / proofs are submitted to GIZ as desired. All costs related to participants shall be borne either by the participants themselves or by GIZ separately

10. Unforeseen eventualities due to COVID-19

The COVID-19 pandemic is currently spreading rapidly in India as of May 2020 and may present itself as a hurdle during the implementation of the project. The consequences of the pandemic on travel and site inspection activities due to restrictions cannot be foreseen for the duration of the project. Therefore, based on the existing situation in the prospective assignment locations, a plan of action shall be developed in coordination with all parties involved during the kick-off meeting.