

SCHEDULE –M
(See Clause 19.2.1)

TERMS OF REFERENCE FOR INDEPENDENT ENGINEER

1 Scope

- 1.1 These Terms of Reference for the Independent Engineer (the “**TOR**”) are being specified pursuant to the Concession Agreement dated *** (the “**Agreement**”), which has been entered into between the Authority and **** (the “**Concessionaire**”) for Upgradation of the Water Supply and Sewerage System in the city of Shimla in the State of Himachal Pradesh on Build, Operate and Transfer (BOT) Basis, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.
- 1.2 This TOR shall apply to construction, operation and maintenance of the Water Supply and Sewerage Project.

2 Definitions and interpretation

- 2.1 The words and expressions beginning with or in capital letters used in this TOR and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.
- 2.2 References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.
- 2.3 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Agreement shall apply, *mutatis mutandis*, to this TOR.

3 Role and functions of the Independent Engineer

- 3.1 The role and functions of the Independent Engineer shall include the following:
- (i) review of the Drawings and Documents as set forth in Paragraph 4;
 - (ii) review, inspection and monitoring of Construction Works as set forth in Paragraph 5;
 - (iii) conducting Tests on completion of construction and issuing Completion/ Provisional Certificate as set forth in Paragraph 5;
 - (iv) review, inspection and monitoring of O&M as set forth in Paragraph 6;
 - (v) review, inspection and monitoring of Divestment Requirements as set forth in Paragraph 7;
 - (vi) determining, as required under the Agreement, the costs of the works or services and/or their reasonableness w.r.t this Project and certifying the

same;

- (vii) determining, as required under the Agreement, the period or any extension thereof, for performing any duty or obligation;
- (viii) assisting the Parties in resolution of disputes as set forth in Paragraph 9; and
- (ix) undertaking all other duties and functions in accordance with the Agreement.

3.2 The Independent Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.

4 Development Period

4.1 During the Development Period, the Independent Engineer shall undertake a detailed review of the Drawings to be furnished by the Concessionaire along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites and topographical surveys. The Independent Engineer shall complete such review and send its comments/observations to the Authority and the Concessionaire within 15 (fifteen) days of receipt of such Drawings. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.

4.2 The Independent Engineer shall review any modified Drawings or supporting Documents sent to it by the Concessionaire and furnish its comments within 7 (seven) days of receiving such Drawings or Documents.

4.3 The Independent Engineer shall review the detailed design, construction methodology, quality assurance procedures and the procurement, engineering and construction time schedule sent to it by the Concessionaire and furnish its comments within 15 (fifteen) days of receipt thereof.

4.5 Upon reference by the Authority, the Independent Engineer shall review and comment on the EPC Contract or any other contract for construction, operation and maintenance of the Water Supply and Sewerage System, and furnish its comments within 7 (seven) days from receipt of such reference from the Authority.

5 Construction Period

5.1 In respect of the Drawings and Documents received by the Independent Engineer for its review and comments during the Construction Period, the provisions of Paragraph 4 shall apply, *mutatis mutandis*.

5.2 The Independent Engineer shall review the monthly progress report furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receipt of such report.

- 5.3 The Independent Engineer shall inspect the Construction Works and the Water Supply and Sewerage System once every month, preferably after receipt of the monthly progress report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out a report of such inspection (the “**Inspection Report**”) setting forth an overview of the status, progress, quality and safety of construction, including the work methodology adopted, the materials used and their sources, and conformity of Construction Works with the Scope of the Project and the Specifications and Standards. In a separate section of the Inspection Report, the Independent Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in the construction of the Water Supply and Sewerage System. The Inspection Report shall also contain a review of the maintenance of the existing lanes in conformity with the provisions of the Agreement. The Independent Engineer shall send a copy of its Inspection Report to the Authority and the Concessionaire within 7 (seven) days of the inspection.
- 5.4 The Independent Engineer may inspect the Water Supply and Sewerage System more than once in a month if any lapses, defects or deficiencies require such inspections.
- 5.5 For determining that the Construction Works conform to Specifications and Standards, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests on a sample basis, to be specified by the Independent Engineer in accordance with Good Industry Practice for quality assurance. The Independent Engineer shall issue necessary directions to the Concessionaire for ensuring that the tests are conducted in a fair and efficient manner, and shall monitor and review the results thereof.
- 5.6 The sample size of the tests, to be specified by the Independent Engineer under Paragraph 5.5, shall comprise 10% (ten per cent) of the quantity or number of tests prescribed for each category or type of tests in the Quality Control Manuals; provided that the Independent Engineer may, for reasons to be recorded in writing, increase the aforesaid sample size by up to 10% (ten per cent) for certain categories or types of tests.
- 5.7 The timing of tests referred to in Paragraph 5.5, and the criteria for acceptance/rejection of their results shall be determined by the Independent Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Concessionaire for its own quality assurance in accordance with Good Industry Practice.
- 5.8 In the event that the Concessionaire carries out any remedial works for removal or rectification of any defects or deficiencies, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests to determine that such remedial works have brought the Construction Works into conformity with the Specifications and Standards, and the provisions of this Paragraph 5 shall apply to such tests.
- 5.9 In the event that the Concessionaire fails to achieve any of the Project Milestones, the Independent Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Independent Engineer shall determine

that completion of the Water Supply and Sewerage System is not feasible within the time specified in the Agreement, it shall require the Concessionaire to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Concessionaire, the Independent Engineer shall review the same and send its comments to the Authority and the Concessionaire forthwith.

- 5.10 If at any time during the Construction Period, the Independent Engineer determines that the Concessionaire has not made adequate arrangements for the safety of workers and passersby in the zone of construction or that any work is being carried out in a manner that threatens the safety of the workers and the passersby, it shall make a recommendation to the Authority forthwith, identifying the whole or part of the Construction Works that should be suspended for ensuring safety in respect thereof.
- 5.11 In the event that the Concessionaire carries out any remedial measures to secure the safety of suspended works, it may, by notice in writing, require the Independent Engineer to inspect such works, and within 3 (three) days of receiving such notice, the Independent Engineer shall inspect the suspended works and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- 5.12 If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Independent Engineer shall determine the extension of dates set forth in the Project Completion Schedule, to which the Concessionaire is reasonably entitled, and shall notify the Authority and the Concessionaire of the same.
- 5.13 The Independent Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-I and issue a Completion Certificate or Provisional Certificate, as the case may be. For carrying out its functions under this Paragraph 5.13 and all matters incidental thereto, the Independent Engineer shall act under and in accordance with the provisions of Article 14 and Schedule-H.
- 5.14 Upon reference from the Authority, the Independent Engineer shall make a fair and reasonable assessment of the costs of providing information, works and services as set forth in Article 15 and certify the reasonableness of such costs for payment by the Authority to the Concessionaire.
- 5.15 The Independent Engineer shall aid and advise the Concessionaire in preparing the Maintenance Manual.

6 Operation Period

- 6.1 In respect of the Drawings and Documents received by the Independent Engineer for its review and comments during the Operation Period, the provisions of Paragraph 4 shall apply, *mutatis mutandis*.
- 6.2 The Independent Engineer shall review the annual Maintenance Programme furnished by the Concessionaire and send its comments thereon to the Authority

- and the Concessionaire within 15 (fifteen) days of receipt of the Maintenance Programme.
- 6.3 The Independent Engineer shall review the monthly status report furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receipt of such report.
- 6.4 The Independent Engineer shall inspect the Water Supply and Sewerage System once every month, preferably after receipt of the monthly status report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out an O&M Inspection Report setting forth an overview of the status, quality and safety of O&M including its conformity with the Maintenance Requirements. In a separate section of the O&M Inspection Report, the Independent Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in O&M of the Water Supply and Sewerage System. The Independent Engineer shall send a copy of its O&M Inspection Report to the Authority and the Concessionaire within 7 (seven) days of the inspection.
- 6.5 The Independent Engineer may inspect the Water Supply and Sewerage System more than once in a month, if any lapses, defects or deficiencies require such inspections.
- 6.6 The Independent Engineer shall in its O&M Inspection Report specify the tests, if any, that the Concessionaire shall carry out, or cause to be carried out, for the purpose of determining that the Water Supply and Sewerage System is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Concessionaire in this behalf.
- 6.7 In respect of any defect or deficiency referred to in Paragraph 3 of Schedule-J, the Independent Engineer shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also specify the time limit for repair or rectification of any deviation or deterioration beyond the permissible limit.
- 6.8 The Independent Engineer shall determine if any delay has occurred in completion of repair or remedial works in accordance with the Agreement, and shall also determine the Damages, if any, payable by the Concessionaire to the Authority for such delay.
- 6.9 The Independent Engineer shall examine the request of the Concessionaire for closure of part of the Water Supply and Sewerage System for maintenance/repair thereof, keeping in view the need to minimise disruption in service and the time required for completing such maintenance/repair in accordance with Good Industry Practice. It shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Concessionaire. Upon expiry of the permitted period of closure, the Independent Engineer shall monitor the re-opening of such parts of the Water Supply and Sewerage System, and in case of delay, determine the Damages payable by the Concessionaire to the Authority under Clause 16.6.

- 6.10 The Independent Engineer shall monitor and review the curing of defects and deficiencies by the Concessionaire as set forth in Clause 18.4.
- 6.11 In the event that the Concessionaire notifies the Independent Engineer of any modifications that it proposes to make to the Water Supply and Sewerage System, the Independent Engineer shall review the same and send its comments to the Authority and the Concessionaire within 15 (fifteen) days of receiving the proposal.

7 Termination

- 7.1 At any time, not earlier than 90 (ninety) days prior to Termination but not later than 10 (ten) days prior to such Termination, the Independent Engineer shall, in the presence of a representative of the Concessionaire, inspect the Water Supply and Sewerage System for determining compliance by the Concessionaire with the Divestment Requirements set forth in Clause 31.1 and, if required, cause tests to be carried out at the Concessionaire's cost for determining such compliance.
- 7.2 The Independent Engineer shall inspect the Water Supply and Sewerage System once in every 15(fifteen) days during a period of 90 (ninety) days after Termination for determining the liability of the Concessionaire under Article 39, in respect of the defects or deficiencies specified therein. If any such defect or deficiency is found by the Independent Engineer, it shall make a report in reasonable detail and send it forthwith to the Authority and the Concessionaire.

8 Determination of costs and time

- 8.1 The Independent Engineer shall determine the costs of the works or services, and/or their reasonableness w.r.t this Project that are required to be determined by it under the Agreement.
- 8.2 The Independent Engineer shall determine the period, or any extension thereof, that is required to be determined by it under the Agreement.

9 Assistance in Dispute resolution

- 9.1 When called upon by either Party in the event of any Dispute, the Independent Engineer shall mediate and assist the Parties in arriving at an amicable settlement.
- 9.2 In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Independent Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

10 Other duties and functions

The Independent Engineer shall perform all other duties and functions specified in the Agreement.

11 Miscellaneous

- 11.1 The Independent Engineer shall notify its programme of inspection to the Authority and to the Concessionaire, who may, in their discretion, depute their respective representatives to be present during the inspection.
- 11.2 A copy of all communications, comments, instructions, Drawings or Documents sent by the Independent Engineer to the Concessionaire pursuant to this TOR, and a copy of all the test results with comments of the Independent Engineer thereon shall be furnished by the Independent Engineer to the Authority forthwith.
- 11.3 The Independent Engineer shall obtain, and the Concessionaire shall furnish in two copies thereof, all communications and reports required to be submitted, under this Agreement, by the Concessionaire to the Independent Engineer, whereupon the Independent Engineer shall send one of the copies to the Authority along with its comments thereon.
- 11.4 The Independent Engineer shall retain at least one copy each of all Drawings and Documents received by it, including ‘as-built’ Drawings, and keep them in its safe custody.
- 11.5 Upon completion of its assignment hereunder, the Independent Engineer shall duly classify and list all Drawings, Documents, results of tests and other relevant records, and hand them over to the Authority or such other person as the Authority may specify, and obtain written receipt thereof. Two copies of the said documents shall also be furnished in micro film form or in such other medium as may be acceptable to the Authority.