

**SINDH WATER SECTOR IMPROVEMENT PROJECT PHASE I**

**PREPARATION OF FEASIBILITY STUDIES FOR THE  
REHABILITATION AND MODERNIZATION OF GUDDU BARRAGE,  
DETAILED DESIGN & TENDER DOCUMENTS AND FOR  
SUPERVISION OF CONSTRUCTION OF WORKS**

**CONTRACT FOR CONSULTANTS' SERVICES**

**Time-Based**

between

Irrigation Department  
Government of Sindh, Pakistan

and

Mott MacDonald Ltd  
Demeter House, Station Road,  
Cambridge CB1 2RS, UK

\_\_\_ March 2011

## I. Form of Contract

### TIME-BASED

This CONTRACT (hereinafter called the “Contract”) is made the ..... day of the month of March, 2011, **Irrigation Department, Government of Sindh, Pakistan** on the one hand, (hereinafter called the “Client”) and, on the other hand, **Mott MacDonald Ltd, Demeter House, Station Road, Cambridge CB1 2RS UK** (hereafter called the “Consultant”). The Consultant has associated with **MM Pakistan (Pvt) Ltd, Dolmen Estate, 1<sup>st</sup> Floor, 18-C Union Commercial Area, Shaheed-e-Millat Road, Karachi 75350, Pakistan** and **Pakistan Engineering Services (Pvt) Ltd of 188-Y Commercial Area Phase III, DHA Lahore** and **BM Consulting Engineers, M-1 Building, C-29 Badar Commercial Main Kh-e-Badar Phase V, DHA, Karachi, Pakistan** (as a sub consultant to MM Pakistan). Notwithstanding such association, the Consultant shall retain full and undivided responsibility for the performance of obligations and for the satisfactory completion of the Services to be performed under the Contract.

### WHEREAS

- (a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the “Services”);
- (b) the Consultant, having represented to the Client that it has the required professional skills, and personnel and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;
- (c) the Client has received a loan from the International Bank for Reconstruction and Development (hereinafter called the “Bank”) towards the cost of the Services and intends to apply a portion of the proceeds of this loan to eligible payments under this Contract, it being understood (i) that payments by the Bank will be made only at the request of the Client and upon approval by the Bank, (ii) that such payments will be subject, in all respects, to the terms and conditions of the agreement providing for the loan, and (iii) that no party other than the Client shall derive any rights from the agreement providing for the loan or have any claim to the loan proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

- (a) The General Conditions of Contract;
- (b) The Special Conditions of Contract;
- (c) The following Appendices:

Appendix A: Description of Services  
Appendix B: Reporting Requirements  
Appendix C: Personnel and Sub-Consultants – Hours of Work for Key Personnel  
Appendix D: Cost Estimates in Foreign Currency  
Appendix E: Cost Estimates in Local Currency  
Appendix F: Duties of the Client  
Appendix G: Form of Advance Payment Guarantee

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultants shall carry out the Services in accordance with the provisions of the Contract; and

(b) the Client shall make payments to the Consultants in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of  
**Irrigation Department**  
**Government of Sindh**

For and on behalf of  
**Mott MacDonald Ltd**

\_\_\_\_\_  
Zahoor ul Husnain Kazi  
Chief Engineer (Guddu Barrage Region)  
Sukkur

\_\_\_\_\_  
Guy Chawner Jones  
Divisional Director

## II. General Conditions of Contract

### 1. GENERAL PROVISIONS

#### 1.1 Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

- (a) “Applicable Law” means the laws and any other instruments having the force of law in the Government’s country, or in such other country as may be specified in the Special Conditions of Contract (SC), as they may be issued and in force from time to time.
- (b) “Bank” means the International Bank for Reconstruction and Development, Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A.
- (c) “Consultant” means any private or public entity that will provide the Services to the Client under the Contract.
- (d) “Contract” means the Contract signed by the Parties and all the attached documents listed in its Clause 1, that is these General Conditions (GC), the Special Conditions (SC), and the Appendices.
- (e) “Day” means calendar day.
- (f) “Effective Date” means the date on which this Contract comes into force and effect pursuant to Clause GC 2.1.
- (g) “Foreign Currency” means any currency other than the currency of the Client’s country.
- (h) “GC” means these General Conditions of Contract.
- (i) “Government” means the Government of the Client’s country.
- (j) “Local Currency” means the currency of the Client’s country.
- (k) “Member” means any of the entities that make up the joint venture/consortium/association; and “Members” means all these entities.
- (l) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them.
- (m) “Personnel” means professionals and support staff provided by the Consultants or by any Sub-Consultants and assigned to perform the Services or any part thereof; “Foreign Personnel” means such professionals and support staff who at the time of being so provided had their domicile outside the Government’s country; “Local Personnel” means such professionals and support staff who at the time of being so provided had their domicile inside the Government’s country; and “Key Personnel” means the Personnel referred to in Clause GC 4.2(a).
- (n) “Reimbursable expenses” means all assignment-related costs other

than Consultant's remuneration.

(o) "SC" means the Special Conditions of Contract by which the GC may be amended or supplemented.

(p) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(q) "Sub-Consultants" means any person or entity to whom/which the Consultant subcontracts any part of the Services.

(r) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-Consultant.

(s) "In writing" means communicated in written form with proof of receipt.

**1.2 Relationship  
Between the Parties**

Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of Personnel and Sub-Consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

**1.3 Law Governing  
Contract**

This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

**1.4 Language**

This Contract has been executed in the language specified in the SC, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

**1.5 Headings**

The headings shall not limit, alter or affect the meaning of this Contract.

**1.6 Notices**

1.6.1 Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the SC.

1.6.2 A Party may change its address for notice hereunder by giving the other Party notice in writing of such change to the address specified in the SC.

**1.7 Location**

The Services shall be performed at such locations as are specified in Appendix A hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

**1.8 Authority of  
Member in  
Charge**

In case the Consultant consists of a joint venture/ consortium/ association of more than one entity, the Members hereby authorize the entity specified in the SC to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

**1.9 Authorized Representatives** Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the SC.

**1.10 Taxes and Duties** The Consultant, Sub-Consultants, and their Personnel shall pay such indirect taxes, duties, fees, and other impositions levied under the Applicable Law as specified in the SC, the amount of which is deemed to have been included in the Contract Price.

**1.11 Fraud and Corruption** If the Client determines that the Consultant and/or their Sub-Consultants has engaged in corrupt, fraudulent, collusive coercive, or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving 14 days notice to the Consultant, terminate the Consultant's employment under the Contract, and the provisions of Clause 2 shall apply as if such expulsion had been made under Sub-Clause 2.9.1(d).

Should any personnel of the Consultant be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Contract, then that personnel shall be removed in accordance with Sub-Clause 4.5.

**1.11.1 Definitions** For the purpose of this Sub-Clause, the terms set forth below as follows:

- (i) “corrupt practice”<sup>1</sup> is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- (ii) “fraudulent practice”<sup>2</sup> is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) “collusive practice”<sup>3</sup> is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) “coercive practice”<sup>4</sup> is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (v) “obstructive practice” is
  - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank

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<sup>7</sup> “Another party” refers to a public official acting in relation to the selection process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

<sup>8</sup> A “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

<sup>9</sup> “Parties” refers to participants in the selection process (including public officials) attempting to establish bid prices at artificial, non competitive levels.

<sup>10</sup> A “party” refers to a participant in the selection process or contract execution.

investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

- (bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under Clause 3.6.

**1.11.2 Commissions and Fees**

The Client will require the successful Consultants to disclose any commissions or fees that may have been paid or are to be paid to agents, representatives, or commission agents with respect to the selection process or execution of the contract. The information disclosed must include at least the name and address of the agent, representative, or commission agent, the amount and currency, and the purpose of the commission or fee.

**2. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT**

- 2.1 Effectiveness of Contract** This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SC have been met.
- 2.2 Termination of Contract for Failure to Become Effective** If this Contract has not become effective within such time period after the date of the Contract signed by the Parties as specified in the SC, either Party may, by not less than twenty one (21) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
- 2.3 Commencement of Services** The Consultant shall begin carrying out the Services not later than the number of days after the Effective Date specified in the SC.
- 2.4 Expiration of Contract** Unless terminated earlier pursuant to Clause GC 2.6 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SC.
- 2.5 Entire Agreement** This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
- 2.6 Modifications or Variations**
- (a) Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. Pursuant to Clause GC 7.2 here of, however, each Party shall give due consideration to any proposals for modification or variation made by the other Party.
- (b) In cases of substantial modifications or variations, the prior written consent of the Bank is required.

## 2.7 Force Majeure

### 2.7.1 Definition

- (a) For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and which makes a Party’s performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by Government agencies.
- (b) Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party’s Sub-Consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected both to take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.
- (c) Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

### 2.7.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

### 2.7.3 Measures to be Taken

- (a) A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.
- (b) A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.
- (c) Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.
- (d) During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:
  - (i) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or

- (ii) continue with the Services to the extent possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.
- (e) In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clause GC 8.

## **2.8 Suspension**

The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) days after receipt by the Consultant of such notice of suspension.

## **2.9 Termination**

### **2.9.1 By the Client**

The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (g) of this Clause GC 2.9.1. In such an occurrence the Client shall give a not less than thirty (30) days' written notice of termination to the Consultants, and sixty (60) days' in case of the event referred to in (g).

- (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GC 2.8 hereinabove, within thirty (30) days of receipt of such notice of suspension or within such further period as the Client may have subsequently approved in writing.
- (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary.
- (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GC 8 hereof.
- (d) If the Consultant, in the judgment of the Client, has engaged in corrupt or fraudulent practices in competing for or in executing this Contract.
- (e) If the Consultant submits to the Client a false statement which has a material effect on the rights, obligations or interests of the Client.
- (f) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) days.
- (g) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

**2.9.2 By the  
Consultant**

The Consultant may terminate this Contract, by not less than thirty (30) days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause GC 2.9.2.

- (a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GC 8 hereof within forty-five (45) days after receiving written notice from the Consultant that such payment is overdue.
- (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) days.
- (c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GC 8 hereof.
- (d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

**2.9.3 Cessation of  
Rights and  
Obligations**

Upon termination of this Contract pursuant to Clauses GC 2.2 or GC 2.9 hereof, or upon expiration of this Contract pursuant to Clause GC 2.4 hereof, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GC 3.3 hereof, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GC 3.6 hereof, and (iv) any right which a Party may have under the Applicable Law.

**2.9.4 Cessation of  
Services**

Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GC 2.9.1 or GC 2.9.2 hereof, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GC 3.9 or GC 3.10 hereof.

**2.9.5 Payment  
upon  
Termination**

Upon termination of this Contract pursuant to Clauses GC 2.9.1 or GC 2.9.2 hereof, the Client shall make the following payments to the Consultant:

- (a) remuneration pursuant to Clause GC 6 hereof for Services satisfactorily performed prior to the effective date of termination, and reimbursable expenditures pursuant to Clause GC 6 hereof for expenditures actually incurred prior to the effective date of termination; and
- (b) except in the case of termination pursuant to paragraphs (a) through (e) of Clause GC 2.9.1 hereof, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract including the cost of the return travel of the Personnel and their eligible dependents.

- 2.9.6 Disputes about Events of Termination** If either Party disputes whether an event specified in paragraphs (a) through (f) of Clause GC 2.9.1 or in Clause GC 2.9.2 hereof has occurred, such Party may, within forty-five (45) days after receipt of notice of termination from the other Party, refer the matter to Clause GC 8 hereof, and this Contract shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.

### **3. OBLIGATIONS OF THE CONSULTANT**

#### **3.1 General**

##### **3.1.1 Standard of Performance**

The Consultant shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with Sub-Consultants or Third Parties.

##### **3.1.2 Law Governing Services**

The Consultant shall perform the Services in accordance with the Applicable Law and shall take all practicable steps to ensure that any Sub-Consultants, as well as the Personnel of the Consultant and any Sub-Consultants, comply with the Applicable Law. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

##### **1.2 Conflict of Interests**

The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

##### **3.2.1 Consultants Not to Benefit from Commissions, Discounts, etc.**

(a) The payment of the Consultant pursuant to Clause GC 6 hereof shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GC 3.2.2 hereof, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-Consultants, as well as the Personnel and agents of either of them, similarly shall not receive any such additional payment.

(b) Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's applicable procurement guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

- 3.2.2 Consultant and Affiliates Not to be Otherwise Interested in Project** The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-Consultants and any entity affiliated with such Sub-Consultants, shall be disqualified from providing goods, works or services (other than consulting services) resulting from or directly related to the Consultant's Services for the preparation or implementation of the project.
- 3.2.3 Prohibition of Conflicting Activities** The Consultant shall not engage, and shall cause their Personnel as well as their Sub-Consultants and their Personnel not to engage, either directly or indirectly, in any business or professional activities which would conflict with the activities assigned to them under this Contract.
- 3.3 Confidentiality** Except with the prior written consent of the Client, the Consultant and the Personnel shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Personnel make public the recommendations formulated in the course of, or as a result of, the Services.
- 3.4 Liability of the Consultant** Subject to additional provisions, if any, set forth in the SC, the Consultants' liability under this Contract shall be provided by the Applicable Law.
- 3.5 Insurance to be Taken Out by the Consultant** The Consultant (i) shall take out and maintain, and shall cause any Sub-Consultants to take out and maintain, at their (or the Sub-Consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverages specified in the SC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.
- 3.6 Accounting, Inspection and Auditing** The Consultant shall permit the Bank and/or persons appointed by the Bank to inspect its accounts and records as well as those of its Sub-Consultants relating to the performance of the Contract, and to have such accounts and records audited by auditors appointed by the Bank if required by the Bank. The Consultant's attention is drawn to Clause 1.11.1 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under Clause 3.6 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Consultant Guidelines).
- 3.7 Consultant's Actions Requiring Client's Prior Approval** The Consultant shall obtain the Client's prior approval in writing before taking any of the following actions:
- (a) Any change or addition to the Personnel listed in Appendix C.
  - (b) Subcontracts: the Consultant may subcontract work relating to the Services to an extent and with such experts and entities as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services. In the event that any Sub-Consultants are found by the Client to be incompetent or incapable in discharging assigned duties, the Client may request the Consultant to provide a replacement, with qualifications and experience acceptable to the Client, or to resume the performance of the Services

itself.

- (c) Any other action that may be specified in the SC.

- 3.8 Reporting Obligations** The Consultant shall submit to the Client the reports and documents specified in Appendix B hereto, in the form, in the numbers and within the time periods set forth in the said Appendix. Final reports shall be delivered in CD ROM in addition to the hard copies specified in said Appendix.
- 3.9 Documents Prepared by the Consultant to be the Property of the Client** All plans, drawings, specifications, designs, reports, other documents and software prepared by the Consultant for the Client under this Contract shall become and remain the property of the Client, and the Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents and software, and use such software for their own use with prior written approval of the Client. If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of any such computer programs, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the SC.
- 3.10 Equipment, Vehicles and Materials Furnished by the Client** 1. Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.
- 3.11 Equipment and Materials Provided by the Consultants** 2. Equipment or materials brought into the Government's country by the Consultant and the Personnel and used either for the Project or personal use shall remain the property of the Consultant or the Personnel concerned, as applicable.

#### 4. CONSULTANTS' PERSONNEL AND SUB-CONSULTANTS

- 4.1 General** The Consultant shall employ and provide such qualified and experienced Personnel and Sub-Consultants as are required to carry out the Services.
- 4.2 Description of Personnel** (a) The title, agreed job description, minimum qualification and estimated period of engagement in the carrying out of the Services of each of the Consultant's Key Personnel are described in Appendix C. If any of the Key Personnel has already been approved by the Client, his/her name is listed as well.
- (b) If required to comply with the provisions of Clause GC 3.1.1 hereof, adjustments with respect to the estimated periods of engagement of Key Personnel set forth in Appendix C may be made by the Consultant by written notice to the Client, provided (i) that such adjustments shall not

alter the originally estimated period of engagement of any individual by more than 10% or one week, whichever is larger, and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause GC 6.1(b) of this Contract. Any other such adjustments shall only be made with the Client's written approval.

- (c) If additional work is required beyond the scope of the Services specified in Appendix A, the estimated periods of engagement of Key Personnel set forth in Appendix C may be increased by agreement in writing between the Client and the Consultant. In case where payments under this Contract exceed the ceilings set forth in Clause GC 6.1(b) of this Contract, this will be explicitly mentioned in the agreement.

**4.3 Approval of Personnel** of The Key Personnel and Sub-Consultants listed by title as well as by name in Appendix C are hereby approved by the Client. In respect of other Personnel which the Consultant proposes to use in the carrying out of the Services, the Consultant shall submit to the Client for review and approval a copy of their Curricula Vitae (CVs). If the Client does not object in writing (stating the reasons for the objection) within twenty-one (21) days from the date of receipt of such CVs, such Personnel shall be deemed to have been approved by the Client.

**4.4 Working Hours, Overtime, Leave, etc.** (a) Working hours and holidays for Key Personnel are set forth in Appendix C hereto. To account for travel time, Foreign Personnel carrying out Services inside the Client's country shall be deemed to have commenced, or finished work in respect of the Services such number of days before their arrival in, or after their departure from the Client's country as is specified in Appendix C hereto.

- (b) The Key Personnel shall not be entitled to be paid for overtime nor to take paid sick leave or vacation leave except as specified in Appendix C hereto, and except as specified in such Appendix, the Consultant's remuneration shall be deemed to cover these items. All leave to be allowed to the Personnel is included in the staff-months of service set forth in Appendix C. Any taking of leave by Personnel shall be subject to the prior approval by the Consultant who shall ensure that absence for leave purposes will not delay the progress and adequate supervision of the Services.

**4.5 Removal and/or Replacement of Personnel** (a) Except as the Client may otherwise agree, no changes shall be made in the Personnel. If, for any reason beyond the reasonable control of the Consultant, such as retirement, death, medical incapacity, among others, it becomes necessary to replace any of the Personnel, the Consultant shall forthwith provide as a replacement a person of equivalent or better qualifications.

- (b) If the Client (i) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a criminal action, or (ii) has reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Consultant shall, at the Client's written request specifying the grounds therefore, forthwith provide as a replacement a person with qualifications and experience acceptable to the Client.

- (c) Any of the Personnel provided as a replacement under Clauses (a) and (b) above, as well as any reimbursable expenditures (including expenditures

due to the number of eligible dependents) the Consultants may wish to claim as a result of such replacement, shall be subject to the prior written approval by the Client. The rate of remuneration applicable to a replacement person will be obtained by multiplying the rate of remuneration applicable to the replaced person by the ratio between the monthly salary to be effectively paid to the replacement person and the average salary effectively paid to the replaced person in the period of six months prior to the date of replacement. Except as the Client may otherwise agree, (i) the Consultant shall bear all additional travel and other costs arising out of or incidental to any removal and/or replacement, and (ii) the remuneration to be paid for any of the Personnel provided as a replacement shall not exceed the remuneration which would have been payable to the Personnel replaced.

**4.6 Resident  
Project  
Manager**

If required by the SC, the Consultant shall ensure that at all times during the Consultant's performance of the Services in the Government's country a resident project manager, acceptable to the Client, shall take charge of the performance of such Services.

**5. OBLIGATIONS OF THE CLIENT**

**5.1 Assistance and  
Exemptions**

Unless otherwise specified in the SC, the Client shall use its best efforts to ensure that the Government shall:

- (a) Provide the Consultant, Sub-Consultants and Personnel with work permits and such other documents as shall be necessary to enable the Consultant, Sub-Consultants or Personnel to perform the Services.
- (b) Arrange for the Personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Government's country.
- (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Personnel and their eligible dependents.
- (d) Issue to officials, agents and representatives of the Government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services.
- (e) Exempt the Consultant and the Personnel and any Sub-Consultants employed by the Consultant for the Services from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity according to the Applicable Law.
- (f) Grant to the Consultant, any Sub-Consultants and the Personnel of either of them the privilege, pursuant to the Applicable Law, of bringing into the Government's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Personnel and their dependents and of withdrawing any such amounts as may be earned therein by the Personnel in the execution of the Services.
- (g) Provide to the Consultant, Sub-Consultants and Personnel any such other

assistance as may be specified in the SC.

- 5.2 Access to Land** The Client warrants that the Consultant shall have, free of charge, unimpeded access to all land in the Government's country in respect of which access is required for the performance of the Services. The Client will be responsible for any damage to such land or any property thereon resulting from such access and will indemnify the Consultant and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default or negligence of the Consultant or any Sub-Consultants or the Personnel of either of them.
- 5.3 Change in the Applicable Law Related to Taxes and Duties** If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause GC 6.1(b).
- 5.4 Services, Facilities and Property of the Client**
- (a) The Client shall make available to the Consultant and the Personnel, for the purposes of the Services and free of any charge, the services, facilities and property described in Appendix F at the times and in the manner specified in said Appendix F.
  - (b) In case that such services, facilities and property shall not be made available to the Consultant as and when specified in Appendix F, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Consultant for the performance of the Services, (ii) the manner in which the Consultant shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Consultant as a result thereof pursuant to Clause GC 6.1(c) hereinafter.
- 5.5 Payment** In consideration of the Services performed by the Consultant under this Contract, the Client shall make to the Consultant such payments and in such manner as is provided by Clause GC 6 of this Contract.
- 5.6 Counterpart Personnel**
- (a) The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in Appendix F.
  - (b) If counterpart personnel are not provided by the Client to the Consultant as and when specified in Appendix F, the Client and the Consultant shall agree on (i) how the affected part of the Services shall be carried out, and (ii) the additional payments, if any, to be made by the Client to the Consultant as a result thereof pursuant to Clause GC 6.1(c) hereof.
  - (c) Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

## 6. PAYMENTS TO THE CONSULTANT

- 6.1 Cost Estimates; Ceiling Amount**
- (a) An estimate of the cost of the Services payable in foreign currency is set forth in Appendix D. An estimate of the cost of the Services payable in local currency is set forth in Appendix E.
  - (b) Except as may be otherwise agreed under Clause GC 2.6 and subject to Clause GC 6.1(c), payments under this Contract shall not exceed the ceilings in foreign currency and in local currency specified in the SC.
  - (c) Notwithstanding Clause GC 6.1(b) hereof, if pursuant to any of the Clauses GC 5.3, 5.4 or 5.6 hereof, the Parties shall agree that additional payments in local and/or foreign currency, as the case may be, shall be made to the Consultant in order to cover any necessary additional expenditures not envisaged in the cost estimates referred to in Clause GC 6.1(a) above, the ceiling or ceilings, as the case may be, set forth in Clause GC 6.1(b) above shall be increased by the amount or amounts, as the case may be, of any such additional payments.
- 6.2 Remuneration and Reimbursable Expenses**
- (a) Subject to the ceilings specified in Clause GC 6.1(b) hereof, the Client shall pay to the Consultant (i) remuneration as set forth in Clause GC 6.2(b) hereunder, and (ii) reimbursable expenses as set forth in Clause GC 6.2(c) hereunder. Unless otherwise specified in the SC, said remuneration shall be fixed for the duration of the Contract.
  - (b) Payment for the Personnel shall be determined on the basis of time actually spent by such Personnel in the performance of the Services after the date determined in accordance with Clause GC 2.3 and Clause SC 2.3 (or such other date as the Parties shall agree in writing), at the rates referred to in Clause SC 6.2(b), and subject to price adjustment, if any, specified in Clause SC 6.2(a).
  - (c) Reimbursable expenses actually and reasonably incurred by the Consultant in the performance of the Services, as specified in Clause SC 6.2(c).
  - (d) The remuneration rates referred to under paragraph (b) here above shall cover: (i) such salaries and allowances as the Consultant shall have agreed to pay to the Personnel as well as factors for social charges and overhead (bonuses or other means of profit-sharing shall not be allowed as an element of overhead), (ii) the cost of backstopping by home office staff not included in the Personnel listed in Appendix C, and (iii) the Consultant's fee.
  - (e) Any rates specified for Personnel not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Client, once the applicable salaries and allowances are known.
  - (f) Payments for periods of less than one month shall be calculated on an hourly basis for actual time spent in the Consultant's home office and directly attributable to the Services (one hour being equivalent to 1/176<sup>th</sup> of a month) and on a calendar-day basis for time spent away from home office (one day being equivalent to 1/30<sup>th</sup> of a month)
- 6.3 Currency of** Foreign currency payments shall be made in the currency or currencies

**Payment** specified in the SC, and local currency payments shall be made in the currency of the Client's country.

**6.4 Mode of Billing and Payment** Billings and payments in respect of the Services shall be made as follows:

- (a) Within the number of days after the Effective Date specified in the SC, the Client shall cause to be paid to the Consultant advance payments in foreign currency and in local currency as specified in the SC. When the SC indicate advance payment, this will be due after provision by the Consultant to the Client of an advance payment guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the SC. Such guarantee (i) to remain effective until the advance payment has been fully set off, and (ii) to be in the form set forth in Appendix G hereto, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal instalments against the statements for the number of months of the Services specified in the SC until said advance payments have been fully set off.
- (b) As soon as practicable and not later than fifteen (15) days after the end of each calendar month during the period of the Services, or after the end of each time intervals otherwise indicated in the SC, the Consultant shall submit to the Client, in duplicate, itemized statements, accompanied by copies of invoices, vouchers and other appropriate supporting materials, of the amounts payable pursuant to Clauses GC 6.3 and GC 6.4 for such month, or any other period indicated in the SC. Separate statements shall be submitted in respect of amounts payable in foreign currency and in local currency. Each statement shall distinguish that portion of the total eligible costs which pertains to remuneration from that portion which pertains to reimbursable expenses.
- (c) The Client shall pay the Consultant's statements within sixty (60) days after the receipt by the Client of such statements with supporting documents. Only such portion of a statement that is not satisfactorily supported may be withheld from payment. Should any discrepancy be found to exist between actual payment and costs authorized to be incurred by the Consultant, the Client may add or subtract the difference from any subsequent payments. Interest at the annual rate specified in the SC shall become payable as from the above due date on any amount due by, but not paid on, such due date.
- (d) The final payment under this Clause shall be made only after the final report and a final statement, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall be deemed completed and finally accepted by the Client and the final report and final statement shall be deemed approved by the Client as satisfactory ninety (90) calendar days after receipt of the final report and final statement by the Client unless the Client, within such ninety (90) day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final statement. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. Any amount, which the Client has paid or caused to be paid in accordance with this Clause in excess of the amounts actually payable in accordance with the provisions of this Contract, shall be reimbursed by the Consultant to the Client within thirty (30) days after receipt by the Consultant of notice thereof. Any such claim by the Client

for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with the above.

- (e) All payments under this Contract shall be made to the accounts of the Consultant specified in the SC.
- (f) Payments in respect of remuneration or reimbursable expenses, which exceed the cost estimates for these items as set forth in Appendices D and E, may be charged to the respective contingencies provided for foreign and local currencies only if such expenditures were approved by the Client prior to being incurred.
- (g) With the exception of the final payment under (d) above, payments do not constitute acceptance of the Services nor relieve the Consultant of any obligations hereunder.

## 7. FAIRNESS AND GOOD FAITH

- 7.1 Good Faith** The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.
- 7.2 Operation of the Contract** The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with Clause GC 8 hereof.

## 8. SETTLEMENT OF DISPUTES

- 8.1 Amicable Settlement** If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within 14 days after receipt. If that Party fails to respond within 14 days, or the dispute cannot be amicably settled within 14 days following the response of that Party, Clause GC 8.2 shall apply.
- 8.2 Dispute Resolution** Any dispute between the Parties as to matters arising pursuant to this Contract that cannot be settled amicably according to Clause GC 8.1 may be submitted by either Party for settlement in accordance with the provisions specified in the SC.

### III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(a)	The words “in the Government’s country” are amended to read “in the Islamic Republic of Pakistan
1.4	The language is English
1.6	<p>The addresses are:</p> <p><b>Client</b> Irrigation Department Government of Sindh Pakistan</p> <p>Attention of Zahoor ul Husnain Kazi, Chief Engineer (Guddu Barrage Region), Sukkur T +92 (0) 71 931 0181 F +92 (0) 71 931 0966 E cegb@gudubarrage.com</p> <p><b>Consultant</b> Mott MacDonald Ltd Demeter House, Station Road, Cambridge CB1 2RS, UK</p> <p>Attention of G C Jones, Divisional Director</p> <p>T +44 (0)1223 463683 F +44 (0)1223 461007 E guy.jones@mottmac.com</p>
1.7	<p>The location of the Services will be in Lahore, although design work will be carried out from offices in Cambridge, Sukkur, Karachi and Hyderabad. Formal coordination meetings with the Client will be held in Sukkur at a maximum of monthly intervals. During the survey and investigation phase, a field coordination office will be maintained at Kashmir.</p> <p>The Resident Project Manager (Team Leader) and his Deputy (Chief Design Engineer) will be available for meetings with the Client at 24 hours’ notice.</p> <p>Some of the expatriate inputs are to be provided at the UK home office – as indicated in Appendix D. In other circumstances – as determined by project requirements and in consultation with the Client - services may be provided at the UK office or elsewhere.</p>
1.8	<p>The Member in Charge is</p> <p>Mott MacDonald Ltd</p>

	Demeter House, Station Road, Cambridge CB1 2RS, UK
<b>1.9</b>	The Authorized Representatives are:  For the Client: Zahoor ul Husnain Kazi, Chief Engineer, Guddu Barrage  For the Consultant: G C Jones, Divisional Director
<b>1.10 (a)</b>	The Consultant, on behalf of the Consultant, the Sub-Consultants and the Personnel, shall be responsible for the payment of any indirect taxes, duties, fees, levies and other impositions imposed, under the Applicable Law (including corporate and personal income tax whether as withholding tax, advance tax, income tax or company tax), on the Consultant, the Sub-Consultants and the Personnel in respect of any payments whatsoever made to the Consultant, Sub-Consultants and the Personnel (other than nationals or permanent residents of the Government's country), in connection with the carrying out of the Services.
<b>1.10(b)</b>	The Client warrants that the Consultant, the Sub-Consultants and the Personnel shall be exempt from any taxes in respect to any property brought into the Government's country by the Consultant, any Sub-Consultants or the Personnel (other than nationals or permanent residents of the Government's country), or the eligible dependents of such Personnel for their personal use and which will subsequently be withdrawn there from by them upon their respective departure from the Government's country, provided that:  (i) the Consultant, Sub-Consultants and Personnel, and their eligible dependents, shall follow the usual customs procedures of the Government's country in importing property into the Government's country; and  (ii) if the Consultant, Sub-Consultants or Personnel, or their eligible dependents, do not withdraw but dispose of any property in the Government's country upon which customs duties and taxes have been exempted, the Consultant, Sub-Consultants or Personnel, as the case may be, (1) shall bear such customs duties and taxes in conformity with the regulations of the Government's country, or (2) shall reimburse them to the Client if they were paid by the Client at the time the property in question was brought into the Government's country.
<b>2.1</b>	The date on which the Contract will become effective is the date of signing the Contract by both parties.
<b>2.2</b>	If this Contract has not become effective within 60 days after the date of the Contract signed by the Parties, either Party may, by not less than twenty one (21) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
<b>2.3</b>	The date of commencement of Services is 30 Days after the date the Contract becomes effective.

<p><b>2.4</b></p>	<p>The time period to complete the Contract (Assignment A) shall be <b>24 months</b>, although most of the work will be completed by the consultants during the first 15 months.</p> <p>Final versions of the Bidding Documents for all civil works, hydraulic and electrical and mechanical equipment, BOQs, tender cost estimates, technical specification and, and evaluation reports will be delivered within <b>24 months</b> of the date of signing the contract.</p> <p>Assignment B will cover the Supervision of Construction Works for which the Project Implementation period is about five years plus about two years' warranty period. The contract for Assignment B will be signed contingent upon a satisfactory outcome of Assignment A and performance of the Consultant. The Technical and Financial Proposals submitted in May 2010 will form the basis for negotiating the contract for Assignment B.</p>
<p><b>2.7.2</b></p>	<p>Expatriate staff inputs in Pakistan and in the Project area will be subject to travel advisory instructions issued by the British High Commission. No financial penalty will be incurred if the Consultant temporarily withdraws staff because of worsening security, provided the Consultant gives due notice to the Client. In such a case, and where practicable, modified arrangements may be agreed between the Client and Consultant for the continuation of services to fulfil the terms of the agreement using office-based inputs.</p>
<p><b>3.5</b></p>	<p>The risks and the coverage shall be as follows:</p> <p>(a) Third Party liability insurance, with a minimum coverage of PKR 1,000,000/-;</p> <p>(b) professional liability insurance to be equal to the contract price amount;</p> <p>(c) employer's liability and workers' compensation insurance in respect of the Personnel of the Consultant and of any Sub-Consultants, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel or other insurance as may be appropriate; and</p> <p>(d) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.</p>
<p><b>3.9</b></p>	<p>The Consultant shall not use these documents and software for purposes unrelated to this Contract without the prior written approval of the Client.</p>
<p><b>4.6</b></p>	<p>The person designated as Team Leader in Appendix C shall serve in the capacity of the Resident Project Manager, as specified in Clause GC 4.6.</p>
<p><b>5.1</b></p>	<p>The Client will provide the following inputs and facilities:</p> <p>The Client is the focal responsible agency to provide all information and give the consultants access to all available data relevant to their task as per Government</p>

	<p>rules.</p> <p>All available relevant documents in physical and / electronic form (specifically including all results for the earlier modelling carried out at Nandipur and Hyderabad), clearances for access to project sites, assistance in contacting and liaising with government officials and agencies, suitable designated counterpart, or liaison staff, and support in obtaining working permits, or any other relevant government clearances.</p> <p>Direct costs of advertising the Project (via newspaper, radio, TV etc), and setting up and maintaining websites etc will be paid by the Client.</p> <p>Any direct costs of training of Client’s staff at external training institutes either in Pakistan or overseas, workshops, training facilities, accommodation, per diems, etc provided under the Project for IPD staff, contractors etc will be paid by the Client, unless otherwise agreed in writing with the Consultant.</p> <p>The Client will arrange appropriate security provisions for the personnel of the Consultant during field visits.</p> <p>The Client will not provide routine administrative support, local transportation, equipment, data collection and processing, or other services. The Client will provide office space to the Consultant in Kashmour and Sukkur Irrigation Colonies to facilitate the coordination of survey and design activities.</p>
<p><b>6.1(b)</b></p>	<p>The ceiling in foreign currency is: <b>£ 945,137</b> including estimated taxes (£96,937) and estimated price contingencies (£40,390)</p> <p>The ceiling in local currency is: <b>PKR 120,770,722</b> including estimated price contingencies (PKR 10,979,157)</p> <p>For Assignment B, the ceiling in foreign currency is <b>£249,731</b> including estimated taxes (£23,456) and price contingencies (£30,810) and in local currency is <b>PKR 557,637,569</b> including estimated price contingencies (of PKR 89,434,313). The technical and financial proposals submitted in May 2010 shall form the basis for negotiating the contract for Assignment B, with due allowance for escalation of rates of remuneration and reimbursable expenses.</p> <p>Although it is a time-based contract, in case of delays in deliverables (refer Appendix B.1) the justifications and reasons shall be reviewed by the Client. In case the delays are not found to be justified client may take appropriate action as provided under the contract, including a review of payments claimed in accordance with GCC 6.2 (b).</p>
<p><b>6.2 (a)</b></p>	<p>Payments for remuneration made in accordance with Clause GC 6.2(a) in foreign and/or local currency shall be adjusted as follows:</p> <p>(a) Remuneration paid in foreign currency pursuant to the rates set forth in Appendix D shall be adjusted every 12 months (and, the first time, with effect for the remuneration earned in the 13<sup>th</sup> calendar month after the date of the Contract) by applying the following formula:</p> $R_f = R_{fo} \times \frac{I_f}{I_{fo}}$

	<p>where <math>R_f</math> is the adjusted remuneration, <math>R_{fo}</math> is the remuneration payable on the basis of the rates set forth in Appendix F for remuneration payable in foreign currency, <math>I_f</math> is the official index for salaries in the country of the foreign currency for the first month for which the adjustment is supposed to have effect, and <math>I_{fo}</math> is the official index for salaries in the country of the foreign currency for the month of the date of the Contract.</p> <p>(b) Remuneration paid in local currency pursuant to the rates set forth in Appendix E shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 12th calendar month after the date of the Contract) by applying the following formula:</p> $R_l = R_{lo} \times \frac{I_l}{I_{lo}}$ <p>where <math>R_l</math> is the adjusted remuneration, <math>R_{lo}</math> is the remuneration payable on the basis of the rates set forth in Appendix E for remuneration payable in local currency, <math>I_l</math> is the official index for salaries in the Client's country for the first month for which the adjustment is to have effect and, <math>I_{lo}</math> is the official index for salaries in the Client's country for the month of the date of the Contract.</p>
<p><b>6.2(b)</b></p>	<p>(i) The rates for Foreign Personnel and for the Local Personnel to be paid in foreign currency are set forth in Appendix D, and the rates for Local Personnel to be paid in local currency are set forth in Appendix E.</p> <p>The remuneration rates shall cover (1) such salaries and allowances as the Consultants shall have agreed to pay to the Personnel as well as factors for social charges and overhead based on the Consultants' latest three fiscal years, (2) the cost of backstopping by home office staff not included in the Personnel listed in Appendix C and (3) the Consultants' fee, (ii) the bonuses or other means of profit-sharing shall not be allowed as an element of overhead, and (iii) that any rates specified for persons not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Client, once the applicable salaries and allowances are known.</p> <p>Remuneration for periods of less than one month shall be calculated on an hourly basis for actual time spent in the Consultants' home office and directly attributable to the Services (one hour being equivalent to 1/240<sup>th</sup> of the month) and on a calendar-day basis for time spent away from home office (one day being equivalent to 1/30<sup>th</sup> of month).</p>
<p><b>6.2(c)</b></p>	<p>The Reimbursable expenses to be paid in foreign currency are set forth in Appendix D, and the Reimbursable expenses to be paid in local currency are set forth in Appendix E.</p>
<p><b>6.3</b></p>	<p>The foreign currency shall be Pounds Sterling. The local currency shall be Pakistan Rupees.</p>
<p><b>6.4(a)</b></p>	<p>The following provisions shall apply to the advance payment and the advance payment guarantee:</p> <p>(i) An advance payment of 20% of total shall be made on or before 15 days after</p>

	<p>the Effective Date. The advance payment will be set off by the Client in equal instalments against the statements for the first 12 months of the Services, starting from the Consultants' third invoice, until the advance payment has been fully set off.</p> <p>(ii) The advance payment guarantee shall be in the amount and in the currency of the foreign and local currency portion of the advance payment.</p>
<p><b>6.4 (c)</b></p>	<p>The interest rate for foreign currency is one percent over the London Interbank Offered Rate (LIBOR) rate.</p> <p>The interest rate for local currency is: five percent per annum.</p>
<p><b>6.4(e)</b></p>	<p>The accounts are -</p> <p><b>For foreign currency:</b></p> <p>Mott MacDonald Limited; VAT Reg. number: GB 523 7656 36 National Westminster Bank plc, 57 Victoria Street, London SW1H 0HN Account no: 48279714, Sort code: 56-00-33</p> <p><b>For local currency:</b></p> <p>MM Pakistan (Pvt.) Limited Standard Chartered Bank, Gulberg Branch, Lahore Account No. 01-79 57718-01</p>
<p><b>8.2</b></p>	<p>Disputes shall be settled by arbitration in accordance with the following provisions:</p> <p>(a) <u>Selection of Arbitrators</u>. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three arbitrators, in accordance with the following provisions:</p> <p>(i) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the United Nations Commission on International Trade Law (UNCITRAL) for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the United Nations Commission on International Trade Law (UNCITRAL) shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute.</p> <p>(ii) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair</p>

	<p>the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by the Secretary General of the Permanent Court of Arbitration, The Hague.</p> <p>(iii) If, in a dispute subject to Clause SC 8.2 1.(b), one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the Secretary General of the Permanent Court of Arbitration, The Hague to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute</p> <p>(b) <u>Rules of Procedure.</u> Except as stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract.</p> <p>(c) <u>Substitute Arbitrators.</u> If for any reason an arbitrator is unable to perform his function, a substitute shall be appointed in the same manner as the original arbitrator.</p> <p>(d) <u>Nationality and Qualifications of Arbitrators.</u> The sole arbitrator or the third arbitrator appointed pursuant to paragraphs (a) through (c) of Clause SC 8.2 1 hereof shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country or of the home country of any of their Members or Parties] or of the Government's country. For the purposes of this Clause, "home country" means any of:</p> <ul style="list-style-type: none"><li>(i) the country of incorporation of the Consultant or of any of their Members or Parties]; or</li><li>(ii) the country in which the Consultant's or any of their Members' or Parties' principal place of business is located; or</li><li>(iii) the country of nationality of a majority of the Consultant's or of any Members' or Parties' shareholders; or</li><li>(iv) the country of nationality of the Sub-Consultants concerned, where the dispute involves a subcontract,</li></ul> <p>(e) <u>Miscellaneous.</u> In any arbitration proceeding hereunder:</p> <ul style="list-style-type: none"><li>(i) proceedings shall, unless otherwise agreed by the Parties, be held in Switzerland;</li><li>(ii) the English language shall be the official language for all purposes; and</li><li>(iii) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity</li></ul>
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	in respect of such enforcement.
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## **IV. APPENDICES**

## APPENDIX A – DESCRIPTION OF SERVICES

### SINDH WATER SECTOR IMPROVEMENT PHASE-I PROJECT (WSIP-I)

#### Consulting Services Preparation of Feasibility Studies for Rehabilitation and Modernization of Guddu Barrage, Detailed Design & Tender Documents

### I. Introduction

1.1 The Government of Sindh has received a credit from International Development Association for implementing Sindh Water Sector Improvement Project Phase-I (WSIP-I). The overarching project objective is to improve the efficiency and effectiveness of irrigation water distribution in three AWBs (Ghotki, Nara and Left Bank), particularly with respect to measures of reliability, equity and user satisfaction. This would be achieved by: (a) deepening and broadening the institutional reforms that are already underway in Sindh; (b) improving the irrigation system in a systematic way covering key hydraulic infrastructure, main and branch canals, and distributaries and minors; and (c) enhancing long-term sustainability of irrigation system through participatory irrigation management and developing institutions for improving operation and maintenance of the system and cost recovery. Component C of the Project covers preparing project for rehabilitation and modernization of the Guddu barrage which is linked to improving the irrigation system.

1.2 It is intended to apply part of the proceeds of this credit to payments under the contract for the services for preparation of Feasibility Report for Rehabilitation and Modernization of Guddu barrage, Detailed Design & Tender Documents and carry out Supervision of Construction of Works.

1.3 **General.** Guddu barrage is located in about 13km (8 miles) north-east of Kashmore district of Sindh Province having longitude coordinate of 69° 45'E and latitude coordinate of 28° 25' N. It is first of the three barrages constructed across the Indus River in Sindh Province downstream of Taunsa barrage located in Punjab Province. It is situated at a distance of 630Km from Karachi, 190Km from Sukkhar and 130Km from Rahimyar Khan. It is accessible by metalled road from these cities. The nearest airport, where the commercial flights are operative, is at Rahimyar Khan.

1.4 The total width of the barrage between the two abutments is 4,445ft, comprising 54 bays each of 60ft clear width in the main barrage, 7 bays each of 60ft clear width in the right pocket (under sluices between the divide wall and right abutment) and 4 bays in the left pocket (between the divide wall and left abutment), one of these 4 bays is a navigation bay having a clear width of 50ft while the other 3 bays (under sluices) have clear width of 60ft each. There are, thus, a total of 65 bays in the barrage. Ordinary piers are 8ft wide each except for the intermediate piers #18, #29, #39 and #50 each of which is 10ft wide. Each of the two divide walls has an adjoining fish ladder. A 22ft wide AA loading road bridge along with a 3ft wide foot path on each side provides the means of transportation across the bridge. The Guddu barrage was designed to cater for passing a maximum discharge of 1,100,000 cfs. Guddu Thermal Power Station is located immediately downstream of the barrage, on the right bank, and draws cooling water from the BS Feeder.

1.5 The Government of Pakistan through WAPDA, as the Implementing Agency, has recently implemented some structural changes in Guddu barrage under the Raine Canal Project. There are several technical reports, prepared by M/s BARQAB, consultants employed by WAPDA in connection with implementation of Raine Canal Project, which describe the changes made to the Guddu barrage. The contents of these reports prepared by M/s BARQAB may provide some material for identifying the problems and shortcomings in the barrage.

1.6 The Irrigation and Power Department (IPD) of Sindh is the executing agency for the Project. IPD will execute the Project through Chief Engineer Guddu Barrage by establishing the Project Directorate or by a Project Management Unit (PMU). The Consulting Firm (herein after called 'Consultants') selected under these Terms of Reference shall carry out: (i) investigations and studies to find the problems associated with the barrage, and prepare a Feasibility Report to determine the preferred solutions; (ii) prepare detail design, prepare tender documents to procure requisite works; and (iii) supervise construction of the civil works and procurement of other related works required for rehabilitation and modernization of the Guddu barrage and Head Regulators of off-taking canals.

1.7 **Safety Problems of Guddu Barrage.** After completion of its construction in 1962-63, for ensuring the flow the barrage structure, training works comprising a T-head spur on the right side 12,000ft upstream of the barrage and a T-head spur on the left side 9,000ft upstream of the barrage were constructed in 1965 and 1966 respectively. Later on, a J-head spur 9,500ft upstream of the barrage and a J-head spur on the left side 12,000ft upstream of the barrage were constructed in 1994 and 2006 respectively. The barrage, however, still faces problems that have to be addressed by the proposed Project. These include: (i) flood and sediment management problems; (ii) gates and gearing; (iii) a realm of safety of foundations and sub-surface flow conditions; (iv) operational constraints; and (v) lack of monitoring systems and equipment etc.

1.8 The Guddu barrage was designed to cater for passing a maximum discharge of 1,100,000 cfs. Since its construction it has passed 4 times the discharges in excess of 1,100,000 cfs, maximum being on 1,199,672 cfs on August 15, 1976. The barrage is now considered safe for passing 1,200,000 cfs. Since its construction it has passed 9 times the discharges in excess of 900,000 cfs, considered as super flood discharge. However, bela (shoal) formation and "masking" the most significant being on the left side ( now the formation is also noticed at right side ) by consolidated sand banks colonized with grass, shrubs and small trees tend to reduce barrage flood discharge capacity.

## II. Objectives and Scope of Work

2.1 The main objective of the proposed consultancy services is to support Irrigation and Power Department (IPD) in project preparation studies, preparation of detailed designs, bidding documents including engineering, economic, environment and social studies and construction supervision of all works and activities included under the Rehabilitation and Modernization of Guddu barrage and project management. These works will be carried out according to international standards.

2.2 It is more than 45 years already when Guddu barrage was put to operation after its construction. The barrage is not safe and rehabilitation program needs to be developed to ensure the safety, integrity and continued serviceability of Guddu barrage, together with a timeline for implementation. Broadly it would include to: (i) determine the condition and current performance of the barrage and appurtenant works; (ii) identify a solution to the problem of asymmetric river flow to ensure straight approach water in to left pocket for supplying authorized flows in to both the Ghokti Canal and the Raine Canal off-taking from the left pocket; (iii) identify works required to ensure the safety, integrity and continued serviceability of Guddu barrage; and (iv)

assess environmental and social constraints associated with the proposed works and identify measures for their mitigation.

2.3 The consulting services are divided into two assignments, Assignment A and Assignment B. Assignment A covers support for the preparation of feasibility report, detailed designs, and bidding documents and project preparation studies including investigation, technical and engineering, economic, financing as well as environmental and social studies and advance procurement activities; and Assignment B for construction supervision, contract management and support for project management. The activities of Assignment A will be carried out in two stages; (a) preparation of Feasibility Report in respect of the preferred solution; and (b) preparation of detailed design, engineer's cost estimate, construction planning, implementation schedule, tender documents, and provide assistance in invitation of bids and their evaluation for award of contract(s).

2.4 The technical and financial proposals of the consulting services should cover both assignments A and B. However, at this stage the contract would be signed for only Assignment A. The contract for Assignment B would be signed contingent upon a satisfactory outcome of the first phase and performance of the consultants. The technical and financial proposals submitted at this stage would form the basis for negotiating a contract for Assignment B.

#### **General Scope of Services for Assignment A: Preparation of Feasibility Report, Detail Design and Tender Documents etc.**

2.5 In order to accomplish first stage of Assignment A, consulting services will include but not limited to the following activities:

- (i) Collect topographical, hydrological, hydro-graphic, geological and other relevant data pertinent to the study and review and analyze the above data;
- (ii) Review and appraise all previous studies, reports and publications on the subject; the review should include but should not limited to studies and experiences on Sukkur and Kotri and other barrages of Pakistan. It should also include the review of similar literature on the alluvial Rivers outside Pakistan. Draw the key learning from the reviews for the incorporation into the proposed studies and the works for the Guddu barrage .
- (iii) Prepare comprehensive Security Management Plan for the consultants specially for the field Survey teams. This is to ensure that the filed work is carried out without any hindrance and the real time data is collected for modelling and other works
- (iv) Document, study and analyse the impact of changed status of some of the off taking canals from non-perennial to perennial
- (v) Analyse the pond level maintenance with available water flows in the up stream of Guddu Barrage.
- (vi) Carry out Human Resource Capacity Assessment of the staff, official and officers of the Barrage Region with respect to Regulation, Operation and Maintenance of the Barrage. Carry out Training Need Assessment of the staff and develop strategy for the Capacity Building of the staff to ensure the efficient and professional O & M of the Barrage.
- (vii) Carry out any surveys required and geotechnical investigations particularly of foundation and subsurface conditions; Also carry out the Traffic Engineering Analysis on the Bridge of the barrage and analyse its impact on the stability of the barrage if any .
- (viii) Carry hydrological investigations of surface & subsurface flows;
- (ix) Study the behaviour of river training and flood protection works and their adequacy;
- (x) Establish physical health of the various components of the structure;

- (xi) Identify problems and proposed remedial works with cost and project implementation plan;
- (xii) Identify environment, resettlement and land acquisition issues due the proposed remedial works and in the long run;
- (xiii) Carry out economic and financial analyses; and
- (xiv) Prepare full feasibility study cover engineer, technical, social, environmental and economic and financial aspects.

2.6 The general scope of services for the second stage of Assignment A will include but not be limited to:

- (i) Update the assessment of condition relating to all structure and appurtenant equipment and confirm the extent of the rehabilitation program;
- (ii) Develop a mathematical model of the barrage reach of the Indus river using suitable hydrodynamic modelling software to predict likely water levels along the river and flows through the barrage during flood events of varying magnitude;
- (iii) Following calibration, use the model to refine design proposals and define operating rules by simulation;
- (iv) Analyze design options for all facets of the rehabilitation of the barrage and appurtenant structures with a view to cost effective rehabilitation;
- (v) Prepare the detailed design, construction drawings, bills of quantities, technical specifications and tender documents for all aspects of the rehabilitation works;
- (vi) Assist in the bidding process including pre-qualification of contractors, invitations to bid, pre-bid consultations, bid evaluation and recommendations for award;
- (vii) The Consultant shall prepare a complete detailed engineering design study report; and
- (viii) Prepare rules for optimal sediment sluicing, update the rules for both flood management and normal barrage operations incorporating all into a revised operation manual for Guddu barrage.

### **River Approach**

2.7 A major element of the study will be the investigation and resolution of issues concerning flow to the barrage, and exclusion of silt from off taking canal.

The Consultant shall:

- (i) Present for IPD approval a detailed methodology for implementation of model tests, including a programme, proposed model parameters and full details of the proposed test regime. Model tests shall included but not be limited to:
  - the three pairs of spurs originally proposed by Sogreah Grenoble France.
  - to conduct river survey U/S 15 miles and D/S 7 miles, to assess the river flow pattern and behaviour.
- (ii) Rectification in the laying curve of right guide bank:- During the construction of barrage the laying of right guide bank was not done at its designed curvature and its exposure is asymmetrical to the left guide bank, so its improper laying may generate the problem to the river approach.
- (iii) In order to stabilize river approach condition to carry out the model study for providing the identical spur on left side opposite of the right J-spur (recently constructed under Rainee canal Project).
- (iv) In order to stabilize the flow of water there is need to carryout the model study for construction of short spurs along the both guide banks or with spurs U/S and D/S of the barrage to avoid the silt deposition within the pond area of barrage and its pockets.

- (v) Due to unstable hydraulic conditions the river never attains a permanent regime, the deposition of silt bars / shoals in the both pockets along the divide walls is observed, which reduces the still pond capacity and increases the silt entry into the off taking canals.
- (vi) To provide the training to the technical and skilled staff of barrage with modern and new techniques in the field of particularly regarding the operation of barrage, flushing operation, techniques for silt exclusion, preventing silt entry into the off taking canals, to conduct river surveys, soundings, probing soundings, and procedures.
- (vii) To equip with the modern equipments for discharge observation and latest devices for river surveying, sounding and probing mechanically operated floating machines or vessels.

### **Sub Surface flow, Uplift Pressure and stability**

2.8 Many of the pressure pipes installed in the barrage at the time of construction are now either choked or are giving unreliable readings. Under the full range of current and future water levels the Consultant shall:

- (i) Study the historic readings from those pressure pipes that are still functioning and assess the integrity of the barrage with respect to uplift and exit gradient.
- (ii) Assess the need for installation of improved instrumentation, such as remote reading piezometers, at both the barrage and head regulators – to enable future monitoring of barrage performance. If considered appropriate, the Consultant shall present a preliminary arrangements of new instrumentation.

### **Specific Scope of Services**

#### **Task A1: Preparation of Feasibility Report**

2.10 **Review and use of Existing Information.** The Consultant will review and make use of all the existing information available and in particular data, tools and models used in preparing a detailed design. This will include, reports, maps, surveys conducted so far, hydrological studies, hydrological models, cost estimates, feasibility level designs, Environmental and Social Assessments, economic analysis, etc.

2.11 **Hydrological/Hydraulic Analysis and Project Definition.** The consultants would carry out hydrological including sediment studies of the Indus System upstream and downstream the Guddu Barrage and re-confirm the design, and maximum floods and sediment regimes the Barrage should be able to handle at least over the next 50 year.

2.12 The consultants would also observe, examine and analyse the hydraulic conditions at the barrage and off-taking canals approach of the river hydraulic conditions immediately upstream and downstream of the barrage status of energy dissipation and identify issues that need to be addressed for safe operation of the barrage at varying flows. Through detailed survey and analysis, document the working pond level rise from 256 to 260 ft. Study its impact on the barrage and regulation of the flow into off taking Canals. Collect, analyse and document the regulation of water into the main canals, the placement of indents and their rationality, also ascertain the impact on the pond level, stability of the barrage and the head regulators of the off taking canals

2.13 The consultants would carry out necessary surveys including construction material surveys and investigations including geological, geophysical and geotechnical investigations and seismic Studies. The consultants would carryout structural safety analysis of the barrage canal

structures, afflux bunds, and various associated structures and assess the safety of these structures and any remedial work that may be required. The consultants would examine operational components of the barrage, such as gates, etc, and observational components of the barrages and related structures.

**2.14 Possible Hydropower Generation Plant at Guddu Barrage.** Examine the feasibility, technical, economic, financial feasibility of installing a hydropower plant at the Guddu barrage, possible generation capacity design etc. The hydropower plant work would be carried out only to the feasibility stage including economic, financial social analysis. The detailed design and bidding and bidding documents for hydropower would not be included in the Assignment unless separately agreed by the Client.

**2.15** Based on these analysis and need for modernization of the operation of the barrage the consultants would define the overall project addressing various safety and operational aspects of the barrage and its associated structures. The Consultant shall suggest and compare alternatives, and as a result of the substantiated technical economic comparison, and consideration of environmental, social, and other safeguard aspects, select and recommend the best alternative for which a detailed design shall be carried out (under a separate assignment).

**2.16 Preparation of Feasibility Level Designs.** The objective of this task is to carry out a feasibility level engineering design and drawings, specifications, bill of quantities and cost estimates. The Consultant shall carry out, but not limited to the following activities:

- (a) Prepare feasibility level designs and for that purpose carry out surveys, site investigations, analyses, and prepare technical notes and designs reports keeping in view the following:
  - site conditions and circumstances;
  - technical standard and use;
  - technological innovation to meet the requirements with least cost solutions including technology and construction methods;
  - architectural and aesthetics,
  - functionality, durability and sustainability
  - services according to the acceptable standards,
- (b) Carry out geo-technical field investigations, which may be required to determine the basic design parameter for the envisaged works and to locate appropriate borrow areas (and/or disposal areas as needed) for material and concrete aggregates. In particular consultants will carry out technical, environmental and social impact analysis of materials to be disposed off that may be generated during the construction activities and prepare detailed design for safe disposal of such materials;
- (c) Prepare design criteria and the designs including supporting computations for the proposed remedial works. Drawings will be prepared to the extent that adequate cost estimates will be possible;
- (d) Chose appropriate materials, optimize the designs of various options that meet technical requirements and estimate quantities of construction, material, etc. to prepare cost estimates for fair comparison to select least cost option;
- (e) Prepare technical specifications, quantities of works and their costs; and
- (f) Review the works required for environmental management plan (discussed below) during construction and long term operation and include them in the designs to the extent possible and in the cost estimates.

## **Task A2 Project Cost Estimates, Benefits, Economic and Financial Analysis**

2.17 This would include but not limited to the following:

- (a) Based on the detailed analysis for project and using appropriate methods to extrapolate various parameters for preparing an overall project design, prepare project cost estimates. These cost estimates would include cost of all components of the project, namely: (i) civil works and other ancillary works depending upon the design of the project; (ii) project management cost, engineering, construction supervision and other institutional strengthening costs; (iii) other services, and equipment that are proposed to be provided under the project or financial and economic costs; (iii) monitoring and evaluation of the project implementation and project impact in long run; and (iv) surveys and detailed design of the works, contract management, field engineers requirement, operation of the project offices etc.
- (b) Estimate total project cost, benefits and economic and financial returns for the total project. Identify project risks and carry out sensitivity analysis, switching values and impact on the economic rate of return.

2.18 Operation and Maintenance (O&M).

- (i) Estimate O&M requirements of the project facilities over the project life, estimate materials required, implementation arrangements and cost estimates.;
- (ii) Propose effective institutional arrangements, for ensuring the proper O&M of the project facilities, define the role of public and private institutions in O&M of the project facilities and identify training requirements and develop a training program;
- (iii) Prepare operational plan for the barrage, handling flood management and irrigation diversions during the construction period. Identify, if irrigation diversions would be interrupted for short or long period during construction. If the irrigation diversions are interrupted then a mitigation plan would have to be developed and costed out along with implementation arrangements etc.
- (iv) Prepare a detailed O&M Manual reflecting the above; and
- (v) Identify equipment, office and other facilities required for O&M of the project facilities.

2.19. Monitoring and Evaluation. Develop framework for:

- (a) monitoring and evaluation of project implementation performance, mechanisms for feedback to the implementing agencies, mechanisms for ensuring that the lessons learnt are accounted for, and for development of management information systems to monitor the project performance effectively;
- (b) devise program for monitoring impact on operation of barrage during construction, and also implementation of the remedial/compensatory measures designed to eliminate any negative effects of interruptions and their implementation;
- (c) assigning the impact of the project on the physical, economic and other environmental and social aspects, monitoring indicators and establish baseline for the indicators;
- (d) monitoring and supervision of the environment, social, and resettlement action plans; and
- (e) preparing required cost estimates for continuous monitoring and evaluation during project implementation and terms of reference for an independent consultancy

services for plan M&E and supervision of environmental management plan and Resettlement Action Plan, etc.,

**2.20 Development of a Financing Strategy and Financing Plan.** Develop a financing plan for the project and develop a project specific least cost financing plan identifying various sources of possible financing. Based on the implementation program prepare cash flows for each financier of the project. Particularly, if the hydropower plant is to be included in the project then explore/examine ways finance such component through private public partnership approach.

**2.21 Development of a Financial Management System.** Assess the financial management capacity of the institutions proposed for implementation of the project. Develop a computerized project and financial management system which is appropriate for the size and scope of the project. The computerized project financial management system should be capable of generating periodic progress reports required for project management. The Financial Management System would be documented in a Project Financial Management Manual which would include the following: (a) flow of funds process; (b) accounting system including internal controls; (c) financial and accounting policies; (d) planning and budgeting system; (e) financial forecasting system; (f) procurement and control of administration monitoring system; (g) financial reporting (quarterly reports and annual financial statements); (h) auditing arrangements; and (i) Organization, staffing, training, and technical support for financial management.

## **2.22 Project Implementation Planning and Procurement Packaging etc.**

- (i) Considering the availability and performance of the contractors, and the construction industry as a whole, size and nature of works based on the detailed designs, and available technology, propose suitable construction scenarios for the project. In the context, identify packages of works which are to be implemented on the basis of International Competitive Bidding (ICB), National Competitive Bidding (NCB) or through other appropriate methods;
- (ii) For each type of package identified above, outline the basis for engineering, supervision and administration arrangements including implementation arrangements for EMP and RAP etc.;
- (iii) Prepare an overall implementation plan and plans for each components of the project as well as operation plan for the project consulting services for supervision and administration, and monitoring and evaluation of the project impact; civil works; equipment, vehicles and other goods required for the project implementation;
- (iv) Prepare an operational plan for the operation of the canals off-taking from the barrage during the construction period, identify and operational constraints, reduction in water diversion if any, its potential impact and possible remedial measures, also prepare the cost estimates for remedial measures which would be included in the overall cost, implementation arrangements etc.;
- (v) Propose project implementation arrangements including institutional structure clearly defining the role of Sindh Irrigation and Power Department, Sindh Irrigation and Drainage Authority, Planning and Development Department Sindh P&D), any linkage with WAPDA, and its various entities. Potential need for a special project management unit (PMU), field officers, contractors, and supervisory engineers. Layout and appropriate work flow using the proposed institutional setup such as technical approvals, approvals for technical design, approval for changes in technical designs during construction, for effective implementation, measurements and verification of works undertaken, payment procedure, flow of funds, etc. Also prepare a staffing plan for the PMU and other staff required for the project implementation;
- (vi) Prepare cost estimates for project management, detailed design, supervision services and other services required for project implementation;

- (vii) Help Sindh Government and the Project Director in advance procurement activities, that would include preparation of bidding documents, pre-qualifications, receipt of bids, bid evaluation etc.;
- (viii) Prepare draft PC-I document based on the feasibility studies that is to be reviewed by the Provincial PDWP.

*Clause 2.23 (below) was deleted during negotiations when the Client advised that he would take responsibility for communications and consultations with stakeholders.*

**2.23 Development of a communication Strategy.** The consultants would develop and implement effective communication strategy for consultation and disclosure during the project preparation stage, including consultation about technical, environmental and social aspects of the project. The consultants would also develop a plan to disseminate information about the project, possible impact on the operation of the barrage. The information would be disseminated through most effective channels to all stakeholders and users of the Guddu barrage. The consultants would prepare a strategy and program for communication with stakeholders, implementation arrangements, ways to address related issues, and prepare cost estimates and related

### **Task A3. Environmental Assessment (EA), Environmental Management Plan (EMP), EIAs etc.**

2.24 The Consultant will carry out the site specific EIAs as required under the Pakistani Laws. The project is to be implemented following Pakistani and Sindhi Environmental Regulations and the World Bank Guidelines and Operational Policies (Operational Policies 4.01) therefore the consultants will be responsible for preparing and updating these documents as needed to meeting such requirements.

2.25 The Consultant will gather necessary data and information and prepare all the environment related documents for all works to be implemented under the project that may be necessary for getting location, construction and other permits and approvals of Sindh Environmental Protection Agency (Sindh EPA) for constructing works and carrying out activities for obtaining financing from the World Bank.

2.26 The consultants would determine possible short and long term and during construction impact of the project. In particular, possible impact on the operation of the barrage during construction, and possible extent of changes in canal diversions would be assessed. In case of reduction in supplies to the canals, the consultants would determine the nature of impact and develop a remedial program for such negative impact. The consultant will help to operationalize the finding of the EAs and EIAs and implementation of Environment Management Plan (EMP) plans for any adverse impact of the construction activities, and operation of the project may have on the environment. EMP will consist of mitigation measures, monitoring program and institutional development/strengthening program for implementation of EMP. Prepare cost estimates for implementation of EMP, scope of work, terms of reference and a plan of how various mitigating measures will be implemented either through modification of construction contracts for project facilities or through additional works for which consultants will prepare designs or through technical assistance and training which the consultants will carry out for operation of the project facilities.

### **Task A4. Social Impact Assessment and beneficiary participation aspects and Preparation of Resettlement Action Plan (RAP)**

2.27 The consultants will carry out a Social Assessment as needed by Government of Pakistan (GOP) Government of Sindh (GOS) and World Bank Guidelines for various project activities/works. Based on findings of the Social Assessment, if land or property is to be acquired permanently or temporarily or people are affected in a significant way, the consultants will prepare a Social Management and Resettlement Policy Framework for the area and activities. For

the works to be included in the first year's contract for which detailed designs would be prepared, a full Resettlement Action Plan (RAP) would be necessary. In this context major activities to be carried out will include, but not limited to the following:

- (i) Carry out social assessment studies of the project and prepare a RAP according to the GOP policies, and the World Bank OP 4.12 involuntary resettlement;
- (ii) Collect data for the preparation of the RAP;
- (iii) Prepare alternatives to minimize resettlement and displacement, prior to project start as well as during project implementation. Prepare alternatives to minimize the amount of impact of resettlement by selecting relocation sites, which are suitable and acceptable to the communities;
- (iv) Design and implement a program to involve beneficiaries in project conceptualization, planning and implementation and to facilitate public awareness of the project; and to enhance its ownership;
- (v) Identify sites for relocation, involve PAPs in preparing alternatives for relocation sites, and preparing strategy for site and housing replacement;
- (vi) Describe legal framework for RAP, relevant local laws, customs that apply to resettlement ; describe entitlement policies for each category of impact and specify that resettlement implementation will be based on specific provisions of agreed RAP; describe method of valuation used for affected structures, land, trees, and other assets; and prepare entitlement matrix; describe grievance redress procedures, for registering complaints, mechanisms for appeal, and process for approaching the civil courts;
- (vii) In respect of social impact and RAP preparation:
  - a) Carry out socio-economic surveys and identify project affected peoples and (PAPs) and extent of the adverse impact on the socio-economic conditions due to the project facilities during construction as well as after completion ;
  - b) Prepare a resettlement plan entitlement and policy matrix ;
  - c) Establish a benchmark situation, sketch out property, houses and other structures, trees, vegetation, geo-profile in a map covered by the project works. Video taping maybe used to support the benchmark situation ;
  - d) Propose institutional and organizational arrangement for the implementation of RAP including linkages with the project implementing agencies, local administration, Non-Governmental Organizations (NGOs) and other related organizations;
  - e) Prepare cost estimates of RAP implementation separately identifying the administrative costs, consulting services, equipment, and compensation under major categories, such as land, houses, trees, other property, cost of preparation of alternative sites, etc ;
  - f) Prepare RAP implementation arrangements and identify critical path actions for timely implementation of the project ;
- (viii) Conduct surveys to determine 'cultural property' (according to the definition of GOP and United Nations) including sites having archaeological, paleontological, historic, religious, and unique natural values in the project area and prepare proper documentation for such a cultural property; determine effect, if any, the project, may have on the cultural project and develop plan for its preservation;
- (ix) The RAP would be updated and modified time to time and once a year showing the status of its implementation, changes in the RAP implementation that would be necessary due to changes on ground over the previous period; and
- (x) Provide support in implementation of RAP (though much of this would during Assignment B); be activities during the project implementation, including support to purchase of properties, for that purpose, preparation of documentation to help in negotiations with the beneficiaries, in obtaining of local permits, etc. This may also

include identification of alternative sites for resettling people and related assets and cultural properties, development of the sites, including planning, infrastructure, utilities, and replacement houses etc.

### **Task A5 Detailed Design and Preparation of Bidding Documents.**

2.28 The objective of this task is to carry out a detailed engineering design following the feasibility level design prepared above and upgraded as required and to provide detailed drawings, specifications, bill of quantities and cost estimates. The Consultant shall prepare a complete detailed engineering design study report for the selected option. The Consultant shall carry out the following work, but not limited to:

- (a) Prepare detailed designs and for that purpose carry out surveys, site investigations, analysis, and prepare detailed designs reports for function and use design covering the contracting agency's requirements with respect to the procurement, in particular requirements related to the following:
  - site conditions and circumstances;
  - technical standard and use;
  - technological innovation to meet the requirements with least cost solutions including technology and construction methods;
  - architectural and aesthetics,
  - functionality, durability and sustainability
  - services according to the acceptable standards,
- (b) carry out a comprehensive site examination and collect all information required for the evaluation of the present field conditions;
- (c) carry out topographical surveys to an extent sufficient to select the optimum location, and to facilitate the adequate determination of required quantities for the construction of the works;
- (d) carry out geo-technical field investigations, which may be additionally required to determine the basic design parameter for the construction of intake and powerhouse and to locate appropriate borrow areas (and/or disposal areas as needed) for material and concrete aggregates. In particular consultants will carry out technical, environmental and social impact analysis of any dredged material that may be generated during the construction activities and prepare detailed design for safe disposal of such materials;
- (e) Define characteristics of Electro Mechanical and other measurement equipment for modernization of the project and long-term performance and operation of the barrage;
- (f) prepare design criteria and the detailed designs including supporting computations for the proposed works according to recognized international standards. Drawings will be prepared to the extent that adequate cost estimates will be possible, and to facilitate contractors to prepare their bids and construction drawings;
- (g) chose appropriate materials, optimize the designs and select least cost options that meet technical requirements and estimate quantities of construction, material, etc. for preparation of bidding documents;
- (h) prepare technical specifications, engineering drawings needed for tender documents, bill of quantities (BOQs) and bidding documents. The bidding documents will be prepared in using the World Bank Standard Bidding Documents for ICB which are based on Standard FIDIC documents; and

- (i) prepare engineer's cost estimates for the works/contracts, and requirements for construction supervision, including facilities, material testing labs, on or off site as needed, equipment and staffing or any other special requirements;
- (j) review the works required for environmental management plan (discussed above) for during construction and long term operation and include them in the designs to the extent possible and in the bidding documents for construction of works .

### **III. Implementation Arrangements**

3.1 The Consultant will work closely with Sindh Irrigation and Power Department (SIPD) to whom they will be reporting on a day to day basis and Sindh Irrigation and Drainage Authority coordinate work with other relevant units of other agencies (such as WAPDA), local administration and relevant ministries and agencies.

3.2 After the inception stage the Consultants shall prepare a detailed schedule and task-flow diagram which depicts the interrelationship of various tasks in the assignment which lead to the completion works and mechanism of coordination with the client and other related entities. This will be kept update throughout the Project duration.

3.3 Chief Engineer SIPD will be representative of the client and will designate Head of the Project Management Unit (PMU) to coordinate all interfaces with the Consultants. Head of PMU with support from the Director will also assist the Consultants in resolving various administrative issues which may arise during the study duration. The Consultants' Project Manager will be the principal contact and will be expected to be readily available during project implementation.

3.4 The Consultants shall be responsible for all aspects of performance of services as set forth in the preceding sections of this TOR. Government of Sindh and SIPD will be responsible for providing the existing data and information including all reports prepared so far for the project.

3.6 **Duration of the Assignment.** Duration of the contract will be for twenty four months though most of the work will be completed by the consultants during the first 15 months.

## APPENDIX B - REPORTING REQUIREMENTS

The schedule for various reports the consultants are likely to prepare is given below. The consultant will prepare reports in English and provide five copies of the key reports to the Government and the World Bank. Additional, reports may have to be prepared as needed by the investor, project authorities or based on needs.

Assignment A	Months from Start of Assignment A
<b>1. Inception report</b>	2 <sup>nd</sup> month
2. Draft Feasibility report, consisting of including, definition of the project, cost estimates, economic and financial, environmental and social analysis, implementation plan etc. Environment and Social/Resettlement Reports.	7 <sup>th</sup> month
3. <b>Progress Reports</b> including Monthly, Quarterly and Annual Reports	Every month, quarter and year-end until project completion.
4. Final Feasibility Report	9 <sup>th</sup> Month
4. <b>Design Report</b> consisting of a report describing the detailed design of the project works,	12 <sup>th</sup> Month
5. Draft Bidding documents. Draft Bidding documents for all civil works, hydraulic and electrical and mechanical equipment, BOQs, tender cost estimates, technical specification and, and evaluation reports.	15 <sup>th</sup> Month

## APPENDIX C

### KEY PERSONNEL AND SUB-CONSULTANTS

#### HOURS OF WORK FOR KEY PERSONNEL

#### KEY PERSONNEL

Table C.1 lists the posts designated as Key Foreign Staff for the Project, who will be responsible for the provision of services and submission of deliverables to the Client. Key Staff assigned to these posts will be based in Lahore, Sukkur, Karachi, and/or Cambridge.

**Table C.1 Key Foreign Staff  
Assignment A**

	Post	Name	Staff-Months	
			PAK	UK
F1	Team Leader/Design Engineer	Chris Hall	18	-
F2	Principal Hydraulic Design Engineer	Chris Davey	4	1
F6	Electrical/Mechanical Specialist	Tim Brown	3.5	0.5
F8	Design Engineer	Gugs Guganesharajah	0.5	2.5

Table C.2 summarises the posts designated as Key Local Staff for the Project. Key Staff assigned to these posts will be based in Lahore, Sukkur and/or Karachi or in such other location as may be required.

**Table C.2 Key Local Staff  
Assignment A**

	Post	Name	Staff-Months
L19A	Principal Sociologist	Mohammad Saleem	15
L21A	Environmental Specialist	Shahid Ali Lutfi	15

#### Hours of Work for Key Personnel

Key Personnel will work the hours of Government of Sindh.

#### Travel Time for Foreign Personnel

The travel time for Foreign Personnel from UK to Pakistan will be one day in each direction, and this will be included in the timesheets and paid for under the contract.

#### Entitlement to Overtime Pay, Sick Leave Pay, Vacation Leave Pay

All overtime pay, sick leave pay, vacation leave pay etc is included in the fee rates given in Appendices D and E.

#### INDICATIVE JOB DESCRIPTIONS

**Team Leader/Design:** The Team Leader/Design will be a graduate Civil Engineer. A masters degree or PhD in Water Resources/Hydraulic Engineering is preferable and would be scored higher, and have at least fifteen years experience in design of major water control structures on major rivers in developing countries and a minimum of five years experience as the team leader for similar design undertakings. His duties will include but not limited to the following:

- (i) Review all relevant documents previously prepared on the Guddu Barrage;

- (ii) Assume overall responsibility for management and supervision of the design team for preparing Feasibility Report for Rehabilitation and Modernization of Guddu Barrage, Detailed Design & Tender Documents and timely consultation on design considerations with PMU in IPD;
- (iii) Provide technical support and guidance in all aspects of the design effort including hydrology, flood routing, physical and mathematical hydraulic modeling, hydraulic design, sediment transport, mechanical considerations, etc;
- (iv) Coordinate and supervise the preparation of tender documents for the upgrading and rehabilitation of the barrage;
- (v) In close coordination with PMU supervise the tendering process and subsequent evaluation of bids and preparation of award recommendation;
- (vi) Monitor the progress of capacity building, ensuring IPD staff, benefit from technology transfer;
- (vii) Take overall responsibility for preparation of the Operational Manual for Guddu Barrage reviewing the draft in detail with PMU and IPD prior to finalization and printing; and
- (viii) Report on a regular basis on studies being under taken, design and/or tendering progress to PMU.

**Principal Hydraulic Design Engineer:** The Principal Hydraulic Engineer will be a graduate Civil Engineer. A masters degree or PhD in Water Resources/Hydraulic Engineering is preferable and would be scored higher and have at least 10 years of professional experience in design of civil works for major hydraulic structures and a minimum of five years specific experience in design/rehabilitation of barrages/head-works and canal head regulators in South Asia. His duties will include but not limited to the following:

- (i) Review all relevant documents previously prepared on the Guddu Barrage;
- (ii) Organize and supervise topographic surveys and any other investigations required to provide necessary input data for both physical and mathematical modelling exercises and design preparation proper;
- (iii) Supervision of follow-up physical model tests to ensure reliable output;
- (iv) Coordinate and supervise the work of the Senior Hydrologist and the Mathematical Modelling Specialist in developing a mathematical model of the barrage reach of the Indus River to predict likely water levels at all critical points and flows through the barrage, during flood events of varying magnitudes;
- (v) Use both physical and mathematical modeling results to refine both design proposals and operating rules;
- (vi) Analyze hydraulic design options divide walls, head regulators and downstream scour protection with a view to cost effective rehabilitation, including but not limited to hydraulic optimization of head regulator parameters and ensuring adequate sediment transport during flushing operations employing the divide walls;
- (vii) Coordinate and supervise detailed design of all hydraulic aspects of the rehabilitation works including preparation of relevant construction drawings and specifications as well as contributing as required to the preparation of the final tender documents; and
- (viii) Draft relevant portions of the Operational Manual for Guddu Barrage with emphasis on operating rules based upon water level observations coupled with available flood prediction information.

**Mechanical/Electrical Engineer:** The Mechanical/Electrical Engineer shall have a Bachelors Degree in Mechanical Engineering and have 10 years experience in the design/fabrication and operation of gates, hoists and mechanical equipment for irrigation and drainage projects. His duties will include but not limited to the following:

- (i) Review all relevant documents available in respect of gates & gearing and electrical installations on Guddu Barrage;

- (ii) Organize, coordinate and carry out a detailed inspection of all barrage gates as well as the head regulator gates for both the four off-taking canals;
- (iii) Prepare detailed designs including drawings, specifications and costs for all remedial measures required for gate rehabilitation;
- (iv) Prepare detailed designs including drawings, specifications and costs for the motorization of all gates, if considered feasible;
- (v) Coordinate and supervise detailed design of all mechanical and electrical aspects of the rehabilitation works including preparation of relevant construction drawings and specifications as well as contributing as required to the preparation of the final tender documents; and
- (vi) Draft relevant portions of the Operational Manual for Guddu Barrage with emphasis on operation and maintenance of the gate and the associated hoisting equipment.

**Senior Hydraulic Engineer :** The Senior Hydraulic Engineer will have a basic Degree in Civil Engineering and preferably have an additional Masters Degree in Civil Engineering and at least 10 years professional experience in detailed design and construction supervision of the hydraulic aspects of civil works related to irrigation and drainage and a minimum of five years experience in design of the rehabilitation of barrages and canal head regulators. His duties will include but not limited to the following:

- (i) Work under the supervision of the Principal Hydraulic Design Engineer and in his absence assume his role and TOR;
- (ii) Organize and supervise topographic surveys and any other investigations required to provide necessary input data for both physical and mathematical modelling exercises and design preparation proper;
- (iii) Supervision of follow-up physical model tests using the physical model currently in place and take the leadership in recommending modifications to and refinement of the model to ensure reliable output;
- (iv) Coordinate and supervise the work of the Senior Hydrologist and the Mathematical Modelling Specialist in developing a mathematical model of the barrage reach of the Indus River to predict likely water levels at all critical points and flows through the barrage, during flood events of varying magnitudes;
- (v) Use both physical and mathematical modeling results to refine both design proposals and operating rules;
- (vi) Analyze hydraulic design options for divide walls, head regulators and downstream scour protection with a view to carry out cost effective rehabilitation, including but not limited to hydraulic optimization of head regulator parameters and ensuring adequate sediment transport during flushing operations employing the divide walls;
- (vii) Coordinate and supervise detailed design of all hydraulic aspects of the rehabilitation works including preparation of relevant construction drawings and specifications as well as contributing as required to the preparation of the final tender documents;
- (viii) During the construction period, under the guidance of the Resident Engineer, advise on construction problems related to or having a bearing on the long term hydraulic performance of the rehabilitated structure; and
- (ix) Assist in preparation of construction progress reports and the construction completion report particularly in regard to tests of hydraulic performance prior to final acceptance of the works.

**Senior Structural Design Engineer:** The Senior Structural Design Engineer shall have a degree in Civil Engineering and have a minimum of ten years of professional experience. A minimum of five years of that experience will have been in the structural design of head-works, barrages, bridges and other hydraulic structures on major rivers in Pakistan/Region. His duties will include but not limited to the following:

- (i) Review all relevant technical documents in respect of Guddu Barrage;

- (ii) Organize and undertake a critical examination targeted to establishing the overall structural and geotechnical (foundation) integrity of the barrage confirming remedial works earlier recommended and identifying additional needs if any;
- (iii) Organize, supervise and carry-out any additional investigations deemed necessary for structural aspects of all features to be included in the rehabilitation and Upgrading package;
- (iv) Analyze structural design options for divide walls, head regulators, road bridge with a view to carry out cost-effective but sustainable rehabilitation;
- (v) Coordinate, supervise and undertake preparation of detailed structural design, bills of quantities and technical specifications for the divide walls, the head regulators as well as any other components identified requiring structural input and treatment and contribute as required to preparation of the final tender documents; and
- (vi) Assist in drafting relevant portions of the Operational Manual for Guddu Barrage with emphasis on procedures/practices to ensure the long term structural integrity of the structure/complex.

**Senior Hydrologist:** The Senior Hydrologist will have a degree in Civil Engineering. Preference will be given to Master's Degree in Civil Engineering with a major in hydrology and a minimum of 10 years professional experience, including a minimum of three years in hydrologic studies on major streams in the Indus Basin. His duties will include but not limited to the following:

- (i) Take the leadership in collecting and organizing all hydrological data and records required for updating the flood frequency analysis of the Indus River at Guddu Barrage;
- (ii) Update the flood frequency analysis of the Indus River at Guddu Barrage;
- (iii) Evaluate the effect of the increased extent of flood levels and embankments along the river and the resulting confinement of flow area on the historic flood of record and the flood distribution regime at Guddu Barrage;
- (iv) Using all available data, simulations and comparisons with like situations in other river basins in South Asia, update and/or prepare a detailed and refined flood frequency analysis at the barrage and comprehensive hydrographs of flood events for all return frequencies required by the principal hydraulic engineer and both the physical and mathematical modellers; and
- (v) Assist the principal hydraulic engineer and the mathematical modeler in assessing water levels upstream, downstream and at the site corresponding to floods of various return intervals.

**Senior Modeler:** The senior modeler will have degree in civil engineering preferably a masters or PhD in Hydraulics/Hydrodynamics and ten years of professional experience with a minimum of five years experience in the development, calibration and application of mathematical hydrodynamic models of similar complexity. His duties will include but not limited to the following:

- (i) Under the direction of the Senior Hydraulic Engineer and in conjunction with Senior Hydrologists develop a mathematical model of the Indus river throughout the barrage reach using the most suitable hydrodynamic modeling software to predict likely water levels along the river and flows through the barrage, during flood events of varying magnitude and differing return intervals;
- (ii) Following calibration of the model, assist the Senior Hydraulic Engineer and relevant team members to refine design proposals and define operating rules;
- (iii) Configure model output so as to optimize its utilization in setting design parameters for the rehabilitation of the barrage, rehabilitation of head regulators of the off-taking canals; and

- (iv) As necessary collaborate in full with the institute conducting the physical model tests ensuring full transfer of relevant data and information between the physical and mathematical modeling efforts.

**Senior Geotechnical Engineer:** The Senior Geotechnical Engineer will be a graduate civil engineer. A masters degree or PhD in Civil Engineering with a major in soil mechanics and foundations is preferable and would be scored higher and a minimum of ten years professional experience including at least three of which were related to sub-surface investigation for hydraulic structures on or adjacent to major streams in the Indus Basin. His duties will include but not limited to the following:

- (i) Review all relevant technical documents previously prepared;
- (ii) Carry out (organize and oversee) a comprehensive review of foundation conditions at each of the existing features and ensure conditions are such to ensure the long-term integrity of the barrage;
- (iii) Identify any remedial foundation stabilization work to be included in the package of works for the rehabilitation and upgrading of the barrage;
- (iv) Formulate plans for and carry out detailed foundation investigations for each of the new barrage features envisaged as under the rehabilitation and upgrading program including but not limited to the divide walls, the new BS Link Canal head regulator gates, the spillway and the highway bridge over the spillway channel;
- (v) Supervise the work of the sub-contracted drilling, sampling and testing services to ensure compliance with best geotechnical practice;
- (vi) Subsequent to the required sub-surface investigations and required laboratory testing, work with the Principal Structural Engineer in preparing detailed designs and specifications for the foundation treatment/features of the new barrage works and any identified remedial work required with respect to the existing complex;
- (vii) Assist in the preparation of the tender documents as required; and
- (viii) During the construction phase, investigate and evaluate any unexpected foundation conditions encountered and recommend alternative treatment as appropriate.

**Contract Engineer:** The Contract Engineer will have at least a BS Degree in Civil Engineering with ten years professional experience in procurement of civil works and contract administration including procurement under World Bank guidelines using international competitive bidding. His duties will include but not limited to the following:

- (i) The Contracts Engineer will develop, in consultation with PMU, the prequalification criteria, prepare notices of pre-qualification and prequalification documents and conduct the prequalification of international contractors in accordance with both GO procedures and WB guidelines.;
- (ii) Under the direction of the Team Leader/Design and using input from various specialists on the team prepare the international tender documents for the rehabilitation and upgrading of Guddu barrage in a format agreeable to both IPD and WB;
- (iii) Advise on the conducting of required pre-bid consultations;
- (iv) Invite the pre-qualified bidders to submit bids and advise the established for evaluation regarding the technicalities of the evaluation process;
- (v) Advise on preparation of the summary of evaluation and recommendation for award; and
- (vi) Liaise with the incoming Resident Engineer with regard to contract administration, an assist in contract administration activities.

**Environmental Specialist:** The Environmental Specialist will have a Master's degree in Environmental Science with at least ten years experience in conducting environmental

screening/assessment of major water resources projects in accordance with GoP and WB's Environmental Guidelines. His duties will include but not limited to the following:

- (i) Review all relevant documents including those prepared previously, particularly relating to the environmental and social aspects;
- (ii) Work with IPD to prepare/update a cost effective environmental management and monitoring plan for the rehabilitation and upgrading of the barrage which is in line with EIA recommendations so as to ensure minimal environmental effects both during and following the construction period;
- (iii) Prepare and execute required appropriate actions to mitigate any negative environmental impacts associated with construction activities in collaboration with IPD and all concerned stakeholders;
- (iv) Prepare a detailed reforestation plan for the Guddu barrage complex and following construction oversee its implementation; and
- (v) Develop training materials for IPD and Guddu barrages staff to support environmental protection measures and to monitor and mitigate potential environmental impacts.

**Social Specialist and Resettlement Specialist:** The Social Specialist and Resettlement Specialist will have a Master's degree or PhD in social sciences, engineering, management or agricultural sciences and at least 10 years relevant professional experience in social organizations, and preparation of resettlement Action Plan, Environmental Impact Assessment (EIAs) documents with hands-on experience of major irrigation investment projects. His/her duties will include but not limited to the following:

- (i) Develop methodology and instruments for social assessment for the potentially affected people and areas.
- (ii) Review all national and provincial statutory, customary and administrative framework (of Sindh Province) relevant to the project interventions in the resettlement context (categories land ownership, yardstick for inventories of trees, construction quality and categorisation of built-up priorities, land acquisition procedures, provisions for public notification regarding cut-off-date for compensation etc.).
- (iii) Based on the comprehensive review of country legal framework and guidelines of donor agencies identify the resettlement principles for all types of affected peoples.
- (iv) Carry out a full-scale field assessment and develop definitions for entitlements for compensation for the properties of potentially affected people (houses, lands, crops, trees, lost income, relocation allowance and entitlement for support business activities) including squatters and encroachers. Develop an entitlement matrix.
- (v) Design and administer the surveys on socio-economic baselines conditions of the potentially affected people covering
  - a. Demography, Feudalism/Tribal (in the context of Sidnh) and Factional Composition
  - b. Gender, Health and Education Dimensions, family expenditures
  - c. Non-governmental Organizations in the Area
  - d. Tenancy structure, Land Relations and Cropping Pattern
  - e. Employment Opportunities, Income and Expenditures
- (vi) Undertake periodic surveys to assess the apprehensions and views of potentially affected peoples.
- (vii) Assess the impacts of rehabilitation operations of barrage on trees, fishery and business, employment, additional income and social cohesion and on labour opportunities
- (viii) Assess the direct Impacts on people and properties

- (ix) Assess the indirect impacts of barrages rehabilitation operations on people such as loss of temporary or permanent access to markets, services and social relations.
- (x) Assess the needs of local people during rehabilitation operations of barrage in terms of access, temporary roads, electricity supply, waste disposal, water and sanitation, medical care and project support income generating activities.
- (xi) Organize series of consultations meetings with communities to create awareness about the rehabilitation activities of the barrage, and to ensure public participation.
- (xii) Develop a monitoring and evaluation program (in a logical framework) for implementation of resettlement-related activities.
- (xiii) Closely work with and collaborate with environmental Specialist and provide input and supplementary data support in the preparation of EIA and EMP.
- (xiv) Provide design and intellectual support in implementation of RAP activities during the project implementation.
- (xv) Preparation of documents of agreements and other necessary instruments to help in negotiations with the beneficiaries and in obtaining of local permits, etc
- (xvi) Identification of alternative sites for resettling people and related assets
- (xvii) Development of Plan including identification of sites for resettlement, planning, infrastructure, utilities, and replacement houses etc.
- (xviii) Assess the staffing need of Resettlement and Compensation Centre propose a mechanism for feedback from the affectees.
- (xix) Develop and establish the framework for Grievance Redresses mechanism and propose the composition of Grievance Redressal committee for of potentially affected people.
- (xx) Assess the staffing need of Resettlement Information Centre and provide support in implementation, implementation of communication plan, development of information base, messages, information to users, delivery of messages etc.
- (xxi) Assess and calculate the cost of resettlement and compensation related activities.
- (xxii) Based on the above produce following three documents that would be acceptable to International donors and the provincial EPA.
  - a. Settlement Action Plan
  - b. Plan for management of physical relocation and disbursement of actual compensation
  - c. M&E Plan for implementation of resettlement Activities.

**Economist :** The Economist will have a Master’s degree in Agricultural or Project Economics and at least fifteen years relevant professional experience in costing and analyzing the economics of major irrigation investment projects. His duties will include but not limited to the following:

- (i) Using input from various specialists on the team develop detailed feasibility level cost estimate for the five project using COST TAB ensuring that all input and output can be used by WB in appraisal and by the Government of Sindh in PCI preparation;
- (ii) From the detailed cost tables identify all costs directly related to generating “with-project” benefits;
- (iii) Working with the planning engineers, identify and quantify the estimated benefits resulting from the investments including the benefits associated with reduced risk of infrastructure failure and the associated interruptions in irrigation water supply as well as the increases in agricultural productivity (higher cropping intensities and/or increased yields) within the relevant command areas resulting from the improved, more efficient, dependable and equitable delivery of irrigation water;
- (iv) Undertake detailed economic analysis of the project for Economic Analysis ensuring that it meets the viability requirements of both WB and the Government of Sindh;<sup>5</sup>

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<sup>5</sup> In carrying out the analyses ensure appropriate participation of SIPD staff such that in-house capability and capacity becomes readily available for subsequent future investment justification.

**Resident Engineer:** The Resident Engineer will have at least a B.Sc degree in Civil Engineering and a minimum of ten years experience in the construction of large hydraulic structures on major streams in the Indus Basin. His duties will include but not limited to the following:

- (i) Assume full responsibility for the consultant’s team during the period of construction supervision and contract administration;
- (ii) Ensure that the consulting team undertakes comprehensive construction supervision and contract administration of the civil works for rehabilitation and upgrading of Guddu Barrage, assuming the role of “the Engineer” and undertake all tasks as defined under FIDIC agreements;
- (iii) Oversee the teams activities related to supervising construction works ensuring compliance to detail provided in the construction drawings and strict adherence to construction specifications;
- (iv) Oversee quality control methodology put in place, confirming its adequacy and ensuring that its employment is satisfactorily carried out;
- (v) Ensure that detailed and quantitative progress reporting adequate to support the contractors requests for progress payments are routinely prepared; and
- (vi) At the end of the construction activities guide and ensure that the team prepares a comprehensive construction completion report, inclusive of as-built drawings as appropriate.



## **APPENDIX D**

# **COST ESTIMATES IN FOREIGN CURRENCY**



## Appendix D.1 - BREAKDOWN OF FOREIGN COSTS BY ACTIVITY

<b>ASSIGNMENT A</b>	
Item	Foreign GBP
<b>Remuneration</b>	
National staff	
International staff	£782,771
<b>Reimbursable Expenses</b>	
Foreign	£119,276
Local	
<b>TOTAL FOR ASSIGNMENT A</b>	<b>£902,046</b>
<b>Assignment A Contingencies</b>	
Estimated Price Contingencies - escalation	£43,090
<b>Assignment A Contingencies</b>	<b>£43,090</b>
<b>TOTAL FOR ASSIGNMENT A WITH CONTINGENCIES</b>	<b>£945,136</b>

**APPENDIX D.2 - BREAKDOWN OF REMUNERATION FOR FOREIGN STAFF**

ASSIGNMENT A				Estimated Inputs						
	Name of staff	Position	Billing Rate		Field		Home office		Total	
			Field GBP	Home	Man- Month	Total GBP	Man- Month	Total GBP	Man- Month	GBP
F1	Chris Hall	Team Leader/Design Engineer	18,480		18.0	332,640			18.0	£332,640
F2	Chris Davey	Principal Hydraulic Design Eng	19,600	17,431	4.0	78,400	1.0	17,431	5.0	£95,831
F3	Peter Ede	Principal Hydrologist	15,680	13,664	1.5	23,520	1.0	13,664	2.5	£37,184
F4	Jack Meldrum	Hydropower Specialist	21,713	18,627	1.0	21,713	0.5	9,314	1.5	£31,027
F5	Ed Atkinson	Sediment Specialist	18,018	18,018	0.5	9,009	2.5	45,046	3.0	£54,055
F6	Tim Brown	Electrical/Mechanical Specialist	15,680	12,880	3.5	54,880	0.5	6,440	4.0	£61,320
F7	Richard Patterson	Contracts Specialist	15,680	13,776	1.5	23,520	0.5	6,888	2.0	£30,408
F8	Gugs Guganesharajah	Design Engineer	20,384	17,914	0.5	10,192	2.5	44,785	3.0	£54,977
F9	Neil Summers	Mathematical Modeller		8,960			4.0	35,840	4.0	£35,840
F10		Unallocated	16,800	16,193	1.5	25,200	1.5	24,289	3.0	£49,489
<b>Assignment A - Total Costs and Inputs</b>					<b>32.0</b>	<b>£579,074</b>	<b>14.0</b>	<b>£203,696</b>	<b>46.0</b>	<b>£782,771</b>

**Notes:**

1. Highlighted positions are those for key staff (as defined in ToR Clause 3.8).
2. All fee rates here are for the calendar year 2010.

**APPENDIX D.3 - BREAKDOWN OF FOREIGN REIMBURSABLE EXPENSES**

<b>ASSIGNMENT A</b>					
<i>Item</i>	<b>Unit</b>	<b>Currency</b>	<b>Unit Cost</b>	<b>Contract</b>	
				<b>Qty</b>	<b>Cost</b>
<b>Per Diems</b>	Days	GBP	78.4	973	£76,268
<b>International Air Travel</b>					
UK/Pak/UK	Return	GBP	1232	24	£29,568
Visa, Vaccinations, Mobilisation etc. per flight	Lump-Sum	GBP	280	24	£6,720
<b>Communications Charges UK/Pak</b>	Month	GBP	280	24	£6,720
<b>Assignment A Sub-Total</b>					<b>£119,276</b>



## **APPENDIX E**

### **COST ESTIMATES IN LOCAL CURRENCY**



## Appendix E.1 - BREAKDOWN OF LOCAL COSTS BY ACTIVITY

<b>ASSIGNMENT A</b>	
<b>Item</b>	<b>Local PKR</b>
<b>Remuneration</b>	
National staff	PKR 65,935,359
International staff	
<b>Reimbursable Expenses</b>	
Foreign	
Local	PKR 43,856,206
<b>TOTAL FOR ASSIGNMENT A</b>	<b>PKR 109,791,565</b>
<b>Assignment A Contingencies</b>	
Estimated Income Tax	
Estimated Price Contingencies - escalation	PKR 10,979,157
<b>Assignment A Contingencies</b>	<b>PKR 10,979,157</b>
<b>TOTAL FOR ASSIGNMENT A WITH CONTINGENCIES</b>	<b>PKR 120,770,722</b>

**APPENDIX E.2 - BREAKDOWN OF REMUNERATION FOR LOCAL STAFF  
Assignment A**

ASSIGNMENT A				Billing Rate PKR	Contract Inputs	
Ref	Name	Firm	Position		Man-Month	Total PKR
L1A	Sajjad Naseem	MMP	Chief Design Engineer	410,895	20	8,217,900
L2A	Usman Shamim	MMP	Snr. Hydraulic Design Engineer	273,930	10	2,739,300
L3A	M. Jawad Raza	PES	Principal Structural Engineer	263,590	10	2,635,900
L4A	Rai Amin	MMP	Principal Irrigation Design Eng	273,930	6	1,643,580
L5A	Asim Nazar	PES	M & E engineer	263,590	10	2,635,900
L6A	Ali Raja	MMP	Communication Specialist	273,930		
L7A	Javed Akhter	MMP	Contract Eng.	273,930	14	3,835,020
L8A	Ibrat Anwar	MMP	Snr. Geotechnical Eng.	246,537	6	1,479,222
L9A	Jawaid Rehmat Malik	MMP	Instrument Engineer	273,930	5	1,369,650
L10A	Ammer-ud-din Qureshi	MMP	Planning and Cost Control	273,930	5	1,369,650
L11A	M. Arshad Hashmi	PES	Materials Engineer	263,590	4	1,054,360
L12A	Ghulam A Qazi	PES	Hydro-power Specialist	397,203	6	2,383,218
L13A	Ch Ramzan Arshad	PES	Economist	263,590	6	1,581,540
L14A	TBN		Junior Engineers	136,965	60	8,217,900
L15A			Unallocated inputs	410,895	6	2,465,370
					<b>168</b>	<b>41,628,510</b>

Modellers						
L16A	Abdul Shakoor	MMP	Senior Modeller	273,930	6	1,643,580
L17A	Bashir Ahmad Butt	MMP	Senior Hydrologist	219,144	6	1,314,864
L18A	TBN		Modellers	95,876	10	958,755
					<b>22</b>	<b>3,917,199</b>

Social and Environment Team						
L19A	Mohammad Saleem	PES	Principal Sociologist	263,590	15	3,953,850
L20A	TBN		Junior Sociologist	95,876	15	1,438,133
L21A	Shahid Lutfi	MMP	Environmental Specialist	301,323	15	4,519,845
L22A	TBN	MMP	Junior Environmentalist	136,965	15	2,054,475
L23A	TBN		Enumerator	123,269	15	1,849,028
					<b>75</b>	<b>13,815,330</b>

Technicians						
L24A	TBN		CAD Operator (M&E)	109,572	60	6,574,320

<b>ASSIGNMENT A SUB-TOTAL</b>					<b>325</b>	<b>PKR 65,935,359</b>
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**Notes:**

1. Highlighted positions are those for key staff (as defined in ToR Clause 3.8).
2. All fee rates here are for the calendar year 2010.

**APPENDIX E.3 - BREAKDOWN OF LOCAL REIMBURSABLE EXPENSES**

<b>ASSIGNMENT A</b> (see Sheet FIN-5B suppA for further details)					
<b>Item Description</b>	<b>Unit</b>	<b>Currency</b>	<b>Contract Estimate</b>		
			<b>Unit Cost</b>	<b>Qty</b>	<b>Cost</b>
<b>Living Accommodation/Per Diems</b>	Lump -Sum	PKR			6,730,200
<b>Communication Charges</b> <i>(Telephone, Internet, Fax, E-mail, Courier etc.)</i>	Lump -Sum	PKR	10,000	24	240,000
<b>Reports, Production and Transmission Expenses</b>	Lump -Sum	PKR			1,039,500
<b>Provisional sums</b>					
Equipment, Material & Supplies	Lump -Sum	PKR			3,534,506
-Vehicles including running and Maintenance					
Toyota Car - 1 Nos					
Suzuki Liana - 2 Nos	Lump -Sum	PKR			15,560,000
Suzuki APV Van - 1 Nos					
<b>Project Office Rent, Operations &amp; Utilities</b>	Month	PKR	210,000 **	24	5,040,000
<b>Support staff/Clerical Assistance</b>	Month	PKR	238,000 **	24	5,712,000
Geotechnical investigations	Lump Sum	PKR			1,000,000
Geophysical surveys for detection of cavities	Lump Sum	PKR			650,000
Topographic surveys	Lump Sum	PKR			600,000
Physical model (at Hyderabad)	Lump Sum	PKR			2,000,000
Satellite imagery	Lump Sum	PKR			1,500,000
Sediment sampling and testing	Lump Sum	PKR			250,000
<i>Total</i>					<b>PKR 43,856,206</b>

**Legend**

\*\* Unit costs are average costs

**APPENDIX E.4 - BREAKDOWN OF LOCAL REIMBURSABLE EXPENSES  
(Supplement for Assignment A)**

<b>ASSIGNMENT A</b>					
Sr. Nr.	Item Description	contract			
		Unit	Qty	Unit Rate	Amount
<b>A</b>	<b>Allowances</b>				
	Per diem for field visits to site	day	1,792	2,500	4,480,200
	Rental of guesthouse accommodation	month	15	100,000	1,500,000
	Running costs of guesthouse accommodation	month	15	50,000	750,000
<b>B</b>	<b>Communication Charges</b> (Telephone, Internet, Fax, E-mail, Courier etc.)	month	24	10,000	240,000
	<b>Sub Total</b>				<b>6,970,200</b>
<b>C</b>	<b>Drafting, Reproduction of Reports</b>				
1	Photo Copy Machine (Lump Sum)	Nr	1	500,000	500,000
2	Spiral Binding Machine	Nr	1	29,500	29,500
3	Cutter	Nr	1	5,000	5,000
4	Stationery, toners etc.	Nr	24	15,000	360,000
5	Repair of Equipment	Sum	1	145,000	145,000
	<b>Sub Total</b>				<b>1,039,500</b>
<b>D</b>	<b>Equipment, Material &amp; Supplies</b>				
6	Telephone	Nr	5	2,500	12,500
7	Fax Machine	Nr	1	29,900	29,900
8	Camera	Nr	1	28,876	28,876
9	Air Conditioner	Nr	6	45,000	270,000
10	Telephone Exchange	Nr			
10b	Generator	Nr	1	1,199,000	1,199,000
	<b>Computers</b>				
11	Computers complete with accessories	Nr	8	32,404	259,230
12	-UPS	Nr	8	10,000	80,000
13	AO Plotter	Nr	1	250,000	250,000
14	Multimedia Projector	Nr	1	200,000	200,000
15	Laser Printer B/W A4 Size	Nr	2	35,000	70,000
15b	Printer B/W A3 Size	Nr	1	90,000	90,000
15c	Colour Ink Jet printer	Nr	1	45,000	45,000
16	LAN System Hub	Nr	1	100,000	100,000
17-24	<b>Office Furniture</b> Office Tables/chairs/computer chairs/Book selves/Side Racks/Filling cabinet/Almirahs and conference table	Lump Sum			500,000
25	Curtains & Furnishings	Lump Sum		400,000	400,000
	<b>Sub Total</b>				<b>3,534,506</b>
<b>E</b>	<b>Local Transportation</b>				
	<b>Vehicles for Office &amp; Site Use</b>				
26-28	2Nr Toyota Car / 4Nr XToyota4X4	Prov Sum			7,400,000
29-31	POL and Maintenance of saloon car	month	30	120,000	3,600,000
	POL and Maintenance of 4x4		40	100,000	4,000,000
32	Motorcycle	Nr	4	100,000	400,000
33	Motorcycle POL and Maintenance	month	80	2,000	160,000
	<b>Sub Total</b>				<b>15,560,000</b>
<b>F</b>	<b>Office Maintenance &amp; Utilities</b>				
34	Office Rent Lump Sum	month	20	150,000	3,000,000
35	Electricity Bills	month	20	50,000	1,000,000
36	Telephone Bills	month	20	25,000	500,000
37	Water Charges	month	20	3,000	60,000
38	Other Utility Charges	month	20	4,000	80,000
38b	Generator POL and Mianteance	month	20	20,000	400,000
	<b>Sub Total</b>				<b>5,040,000</b>
<b>G</b>	<b>Support staff/Clerical Assistance</b>				
39	Accounts Officer	month	20	60,000	1,200,000
40	Office Manager	month	24	40,000	960,000
41	Word Process Operator 2 Nr	month	48	25,000	1,200,000
42	Machines Operator	month	24	12,000	288,000
43	Drivers 3NR	month	72	10,000	720,000
44	Guards 3 Nr	month	72	8,000	576,000
45	Peon 2 Nr	month	48	8,000	384,000
46	Cook	month	24	8,000	192,000
47	Sweeper	month	24	8,000	192,000
	<b>Sub Total</b>				<b>5,712,000</b>
<b>H</b>	<b>Miscellaneous</b>				
	<i>Sub Total</i>				<b>0</b>
	<b>GRAND TOTAL</b>				<b>37,856,206</b>

**Note**

The Grand Total given here does not include costs for surveys, investigations, procurement of imagery, etc which is listed directly on Form FIN-5B.

## **APPENDIX F**

### **DUTIES OF THE CLIENT**

*F-1 Services, facilities and property to be made available to the Consultant by the Client.*

- 1 Reports prepared by/for the government relating to the development of Guddu Barrage as well as supporting data, and specifically including all results for the earlier modelling carried out at Nandipur and Hyderabad.
- 2 Relevant maps and survey information including aerial photographs, surface and groundwater resources and monitoring data such as hydrologic data including flood levels, topographic and ground investigation records, lithologic logs.
- 3 Relevant ordinances, legislations, regulations and administrative orders.
- 4 All available relevant documents in physical and / electronic form, clearances for access to project sites, assistance in contacting and liaising with government officials and agencies, suitable designated counterpart, or liaison staff, and support in obtaining working permits, or any other relevant government clearances, but no routine administrative support, office space, local transportation, equipment, data collection and processing, or other services.
- 5 Direct costs of advertising the Project (via newspaper, radio, TV etc), and setting up and maintaining websites etc will be paid by the Client.
- 6 Any direct costs of training of Client's staff at external training institutes either in Pakistan or overseas, workshops, training facilities, accommodation, per diems, etc provided under the Project for IPD staff, contractors etc will be paid by the Client, unless otherwise agreed in writing with the Consultant.
- 7 The Client will arrange appropriate security provisions for the personnel of the Consultant during field visits.
- 8 Government audit queries with respect to the consultancy services and construction contracts will be the responsibility of the Client.
- 9 The Client will facilitate coordination with the Consultant through the provision of office accommodation in Kashmour and Sukkur Irrigation Colonies.

## APPENDIX G FORM OF ADVANCE PAYMENTS GUARANTEE

\_\_\_\_\_ [Bank's Name, and Address of Issuing Branch or Office]

**Beneficiary:**

Irrigation and Power Department  
Guddu Barrage, Sukkur, Sindh, Pakistan

**Date:** \_\_\_\_\_

**ADVANCE PAYMENT GUARANTEE No.:** \_\_\_\_\_

We have been informed that Mott MacDonald Ltd/MM Pakistan (Pvt) Ltd (hereinafter called "the Consultants") has entered into Contract No. P084302 dated [insert date] with you, for the provision of services for the Preparation of Feasibility Studies for Rehabilitation and Modernization of Guddu Barrage, Detailed Design & Tender Documents (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of £xxxx (xxxx pounds sterling)/PKR xxxx (xxxxx Pakistan Rupees) is to be made against an advance payment guarantee.

At the request of the Consultants, we [name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of £xxxx (xxxxx pounds sterling) /PKR xxxx (xxxxx Pakistan Rupees)<sup>1</sup> upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultants are in breach of their obligation under the Contract because the Consultants have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultants on their account number 48279714 sort code 56-00-33 at National Westminster Bank plc, 57 Victoria Street, London SW1H OHN UK or account number 01-79 57718-01 at Standard Chartered Bank, Gulberg Branch, Lahore, Pakistan.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultants as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the total payments under the Contract equal or exceed the sum of £ xxxx / PKR xxxx (equivalent to 50% of the foreign / local currency element of the Contract Price), or on the xx day of xxxxx xxxx,<sup>2</sup> whichever is earlier. Consequently, any

<sup>1</sup> The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

<sup>2</sup> Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In

demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

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*[signature(s)]*

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preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."