

CONSULTING SERVICES FOR KOTA FATEH KHAN TERMS OF REFERENCE

Irrigation Research Institute of Punjab Irrigation & Power Department (PIPD) will build a scale model of Kota Fateh Khan Dam for testing sediment flushing on proposed design by AHT under the following parameters:

- (i) Comprehensive model;
- (ii) Calibration of reservoir levels;
- (iii) Flushing inlet, spillway and energy dissipater arrangements; and
- (iv) Sedimentation effects through low-level outlets.

The consultants are required to perform the following activities:

1. Review of preliminary feasibility study, carried out by Small Dams Organization (SDO), feasibility review and upgrade by AHT and technical review by Asian Development Bank (ADB). The starting point for detail design will be the design produced by AHT and approved by PIPD/ADB.
2. Based on the review of AHT upgraded feasibility and associated studies, the consultant will submit an inception report, highlighting the main areas that need further works for detail design and eventually points that need clarification or approval from PIPD/ADB.
3. Ascertain the need and extent for additional field investigation/surveys/studies required for accomplishing the assignment details of program for studies and report findings/recommendations to the client. On client's approval, carryout additional surface and subsurface geological and geotechnical investigations of dam, spillway, command area, channels, etc.
4. Review (validate) hydrological studies including water availability studies, sediment inflow study, reservoir operation studies, flood studies, flood routing, and flood estimation.
5. Validate seismic risk assumptions of the AHT feasibility study to determine seismic design parameters for various project components.
6. Validate the study carried out under ADB and provide detailed report for the present downstream water rights/uses and study of the potential of water supply to the nearby villages.
7. Update the existing study to assess the present and projected cropping patterns, yields and returns etc. for the proposed command area and estimate crop water requirements.
8. Review and prepare detailed design of dam of the selected alternative, including dam and pertinent structures, i.e. pumping station, mini-hydel station, main channel, water supplies, etc. as proposed by AHT.
9. Prepare cost estimate of the Project. These shall include reasonable breakdown by major items like civil work, environmental mitigation costs, project engineering and management expenses, contingencies, etc.

10. Prepare an indicative construction schedule.
11. Update the existing economic analysis, proposed by AHT to work out the benefits available for Project.
12. Submit the draft design report to the employer for review and comments as a 2nd inception report.
13. After clearance of the 2nd inception report, submit final version of all the reports.

Position	Person- months
Project Manager	6
Principal Hydrologist	3
Principal Hydraulic Structure Specialist	3
Economist	2
E/A Specialist	2
Senior Engineers	3
Geotech Engineers	1.5
Draftsman/Autocad Technician	6
Quality Surveyor	2
Computer Operators	6
Total	34.5
