

PRE-QUALIFICATION DOCUMENT (PQD)

PUNJAB IRRIGATED - AGRICULTURE PRODUCTIVITY IMPROVEMENT PROJECT (PIPIP)

Installations of High Efficiency Irrigation Systems

1. Introduction

Successful international models of agricultural developments envisage integrated/comprehensive development approach, which provides a complete package of on farm water management interventions required at the farm level. A package of OFWM interventions comprising of watercourse improvement, additional lining of already improved watercourses, development of barani irrigations schemes, LASER land leveling, high efficiency irrigation systems, irrigation management advisory service (irrigation scheduling) etc. has, accordingly, been prepared under the scheme. Almost all components of proposed project are under implementation/recently completed as independent schemes and the same are planned to be promoted through integrated approach.

2. The Project

The World Bank assisted “Punjab Irrigated-Agriculture Productivity Improvement Project (PIPIP)” is under implementation since July 2012 in the entire province. It spans over a period of five years (2012-13 to 2016-17) with a total cost of Rs. 36,000 million (government share of Rs. 21,250 million, all IDA financing, and farmers’ contribution of Rs. 14,750 million). The PIPIP envisages installation of high efficiency irrigation systems (HEISs) on 120,000 acres, improvement of 5,500 unimproved watercourses, completion of lining on 1,500 already improved watercourses in canal commands, rehabilitation of 2,000 irrigation schemes outside the canal commands and provision of 3,000 LASER units to the farmers/service providers. The project has been extended upto June 2021.

3. Project Objectives

The overall project development objective (PDO) is to improve water productivity i.e. producing more crop per drop. It will be achieved through increasing delivery efficiency, adopting improved irrigation practices, promoting crop diversification, and effective application of non-water inputs. The PDO would contribute to increased agricultural production, more employment opportunities in rural areas, higher incomes from the farming, better living standards of the farmers, and improved environment.

4. Key Components

- ◆ **Installation of drip and sprinkler irrigation systems on 120,000 acres**
- ◆ Provision of 3,000 LASER units to farmers/service providers
- ◆ Improvement of 5,500 unimproved canal area watercourses

- ◆ Completion of 1,500 partially improved watercourses
- ◆ Rehabilitation of 2,000 irrigation schemes outside canal commands

5. Installation of High Efficiency Irrigation Systems (HEISs)

It is well established fact that irrigation water is the most critical factor in crop production and its efficient use enhances productivity of other non-water inputs as well. The Punjab is facing severe shortage of irrigation water for last many years on one hand and there is inefficient use of available resources on the other. The same is resulting in much lower agricultural productivity from highly productive resource base of the province. High efficiency irrigation systems have been found water and nutrient efficient and most appropriate option to address various crop production issues.

Drip, bubbler, conventional sprinkler, rain-gun, center pivot etc. are together referred to as high efficiency irrigation systems (HEISs) which use pipes for conveyance of water from the source to points of use. In drip or trickle irrigation, water is provided to individual plants by means of small emitters in the form of droplets. Bubbler irrigation is very similar to trickle irrigation except that the water is delivered to the plants through micro sprinklers mounted on small spikes. In rain-gun irrigation systems, water is pumped at high pressure through a piped system and sprayed over the field.

5.1 Drip Irrigation System

Drip irrigation also called as trickle/micro irrigation is the most efficient technology that makes highly effective use of water, fertilizers, and nutrients. Its main principle is to apply water and other inputs slowly, regularly, and frequently as close to the plant roots as possible through emitters installed on plastic pipes laid out in the field. Regular and timely availability of nutrients throughout the plant growth period as per exact requirements and maintenance of favorable soil moisture conditions facilitate to maximize crop productivity. Drip irrigation technology is best suited for orchards and high value row crops such as cotton, maize, sugarcane, vegetables etc. It has become the most valued innovation, which optimizes use of water and fertilizers by enhancing the irrigation efficiency as much as 95 percent. A typical drip system includes a pumping unit, fertilizer tank, connecting/jointing fittings, filters, underground main pipeline with field hydrants, header pipes, laterals, emitters etc.

5.2 Sprinkler Irrigation System

The sprinkler system is the overhead irrigation whereby water is sprayed on the soil/crop somewhat like rain. A typical sprinkling unit comprises of an electric or diesel pumping unit, a portable or buried main pipeline with hydrants at predetermined intervals, and one or more sprinklers units attached to hydrants or hose.

6. Cost Sharing for HEIS

HEISs are being installed on cost sharing basis between government and the beneficiary farmers whereby, government is providing 60 percent subsidy of total scheme while the remaining 40 percent cost is contributed by the beneficiary farmers.

7. Procedure for Installation of HEISs

Installation of HEISs would be carried out through supply and service companies (SSCs) pre-qualified by the Agriculture Department, who would be responsible for carrying out surveys, preparation of designs & cost estimates, installation/ commissioning of systems and provision of post-installation backup support services. The sequence of implementation activities for installation of HEIS is given as under:

- i. *The district/ tehsil OFWM staff will mobilize the farmers for adoption of HEISs. Interested farmers may submit application for the installation of high efficiency irrigation systems on his/her land during any time of the year to the Deputy Director Agriculture (OFWM) or Regional Project Director (RPD)/ Director Agriculture (OFWM). The district/ tehsil level OFWM staff will mobilize the farmers for adoption of HEISs;*
- ii. *The applications will be scrutinized against approved criteria and eligible applicants will be advised to approach the pre-qualified SSC of their own choice for survey, design, and cost estimation of the selected system. In case of more demand than the district quota/target, balloting process will be conducted at the district level by involving RPD/ Director Agriculture (OFWM) and representative of DGA (WM)/ Project Director;*
- iii. *The selected SSC will survey the site, prepare design and bill of quantity (BOQ), and submit the same to the Deputy Director Agriculture (OFWM) who will forward the same to the Project Implementation Supervision Consultants (PISC) for review and approval. The farmer, after approval of design and cost estimates, will be advised by the concerned Deputy Director Agriculture (OFWM) to deposit his/her entire share in the form of pay order/bank draft drawn in favor of selected SSC or evidence of in kind contribution by the farmer, which will be transmitted to Director General Agriculture (Water Management)/Project Director for issuance of work order;*
- iv. *Farmer may be given option to contribute "In Kind Material" towards his share (up to maximum of 40%) by providing material as per approved standards and specification. In this case, farmer will purchase new material according to standards and specifications and will get the same verified by the Consultants. On certification by the Consultants that "in kind" material delivered at site meets the project standards and specifications; and, deposition of remaining farmer's share, if required, the work order shall be issued;*
- v. *After receipt of in kind/ cash farmer share, Director General Agriculture (WM)/Project Director will issue the work order and advise the concerned SSC to supply the HEIS equipment/material at site, which will be verified by the Consultants for quality and quantity vis-à-vis approved standards/specifications;*
- vi. *On receipt of satisfactory report from the PISC, DGA (WM) will make 50 percent payment of total cost including farmer's share to SSC by releasing farmers' demand draft and remaining from project funds, alongwith advice to install the system. In case 100% material is not shifted at site, the PISC will recommend 50% of the verified cost of material, provided that the verified material cost is not less than 80% of total material cost. After material verification, the concerned SSC shall complete installation of system at site;*
- vii. *On completion of installation, the SSC will report to concerned DDA (OFWM) and PISC for commissioning verification of installed system. The consultant will verify HEIS installation as per design while concerned farmer will provide his satisfaction. The consultants shall ensure that irrigation and fertigation schedules, log book and*

O&M manual in local language/Urdu have been provided to farmer; and, training regarding system operation and maintenance imparted to the farmer/ operator in coordination with concerned DDA (OFWM) by the SSC;

- viii. *The SSCs will provide follow-up support service as per provisions of the agreements;*
- ix. *DGA (WM) will pay remaining cost after retaining 10 percent of total system cost or Bank guarantee of equal amount, which will be released after two years on provision of satisfactory follow up support services by the SSCs during two years, which will be verified by the concerned DDA (OFWM) and the PISC or any other designated committee for the purpose;*
- x. *All HEIS works will be executed under a tripartite agreement signed by Department, SSC, and the participating farmer; and*
- xi. *The SSC/ district/ tehsil OFWM staff will provide technical support to the farmers for the operation, maintenance, and troubleshooting of installed system as well as provide agronomic support regarding cropping geometry, fertigation, weed management, disease/pest control etc. under high efficiency irrigation environment.*
- xii. *In case of any dispute, the matter will be referred to already constituted Dispute Resolution Committee, whose decision will be final and would be binding on all stakeholders.*

8. Eligibility Criteria for Prequalification of Supply and Service Companies

Agriculture Department is implementing “Punjab Irrigated-Agriculture Productivity Improvement Project (PIPIP)” in the entire Punjab. The project envisages installation of drip & sprinkler irrigation systems on 120,000 acres with key objective to maximize productivity of irrigation water. Directorate General Agriculture, Water Management (DGA-WM) intends to expand the shortlist of firm(s) as supply and service companies for installation of high efficiency irrigations systems (HEIS) during 2018-19 to enhance the choice for the farmers and fair competition among the SSCs for supply & installation of HEIS equipment. Accordingly, expression of interest is invited from eligible firm(s)/joint venture(s) with appropriate in-house expertise may form joint venture with local or international firms or choose foreign principle to supply the requisite expertise in terms of manpower and HIES equipment. The firm(s)/joint venture(s) having the following strength/ background would be eligible for prequalification as SSC for the project period, which will be renewed every year based on satisfactory performance.

- (i) Preferably must have an office in Pakistan and willing to open minimum three (3) more offices/ dealerships/ after sales service center at various Divisional headquarters in the province.
- (ii) Must registered with Income Tax/ Sales Tax Departments (Attach evidence in the form of Registration Certificate/ Number supported by latest / updated renewal);
- (iii) Must be in business for last three years.
- (iv) Must have experience of completing similar assignments on at least 200 acres during last three (03) years (Attach list of projects with location, type of system installed and cost incurred and furnish any additional documents to support relevant experience of firm(s)/Joint Venture(s).
- (v) The local firms are encouraged to make joint ventures with the foreign firms. In case of joint venture of local firm with foreign principal, the experience of later elsewhere in the world will be considered.
- (vi) Must be available inventory of HEIS equipment of standards & specifications approved by the Punjab Agriculture Department to install the systems on at least 50 acres.

- (vii) Must have mix of professional staff including minimum five Agricultural Engineers, three Agricultural Experts including Agronomist, Horticulturist, Soil Scientist and five Diploma Engineers (Provide list of staff and their C.Vs indicating qualifications, their registration with professional institutions & relevant experience. The firm will also furnish undertaking to recruit the additional staff as per project requirements, if needed).
- (viii) Must have minimum annual turnover of Rs. 3 million.
- (ix) Must provide affidavit confirming that (a) applicant firm (s)/joint venture(s) have never been blacklisted by any government department. (if ever black listed, then provide the case history and current status of the firm regarding this decision) (b) All the information provided by the applicant firm/joint venture are correct.
- (x) Must attach pay order/ bank draft amounting to Rs. 10,000/- in the name of Director General Agriculture (Water Management) Punjab, Lahore as non-refundable processing fee for pre-qualification.

The proposals/ applications will be received in the office of undersigned at given address till **15th April, 2019** during office hours. A pre-qualification committee already constituted under the PIPIP will evaluate the proposals/ offers and decide about acceptance/ rejection of proposals/ offers. The interested firm(s)/ Joint Venture(s), who meet/fulfil the above mentioned prerequisites, may collect the additional information/ pre-qualification document free of cost immediately from office of the undersigned or may download the same from OFWM website (www.ofwm.agripunjab.gov.pk). For further details/ pre-qualification information/ clarifications, the firm(s)/ Joint Venture(s) can contact office of the undersigned within office hours.

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