

TENDER DOCUMENT

Pilot Project of Production Plant of Bio Diesel



1. General

Presently a large number of households in remote/rural areas of Pakistan do not have access to basic amenities like electricity, gas, potable water etc. Therefore, these households are forced to use kerosene oil and fire wood for lighting and cooking. This demonstration project aims to change the current status quo by providing local communities with alternative/renewable means of lighting and clean drinking water. This demonstration project will also assist in the alleviation of poverty, social uplift and rural development. Moreover, it will also aim at mitigating greenhouse gas emissions.

2. Objectives of the Project

The project has following short term and long objectives:

- a. To identify representative villages for setting up demonstration models.
- b. To formulate a social infrastructure for technology dissemination and management of the project at the village level {the Village Energy Committee(VEC)}
- c. To conduct socio-economic survey for defining energy needs of the villages.
- d. To prepare and implement village-level energy master plan in 01 pilot village.
 - To identify local Bio-diesel resources.
 - To set up Bio-diesel production facility (including oil extraction and processing).
 - To set up electrical system (generation, transmission and distribution).
 - To empower the VEC to operate and maintain the power production facility.
 - To train the VEC to run a self-sustainable model.
- e. To evaluate the techno-economic feasibility of the above model.
- f. To evaluate the potential of replication of the model and prepare a master plan of execution.
- g. To develop a pay back model for village electrification through agro-based bio-diesel.

3. Description of Project

Production of Bio-diesel through local renewable resources at village level, using appropriate technology in cultivation of Bio-diesel crops and plants, processing of oil seeds, transesterification, generation – transmission – distribution of electricity and motive power.



The power generation system design caters for placement of grid and transmission of electricity to the village houses through poles in open un-shaded areas in each house. Seed press and transesterification unit will operate as and when required to produce bio-diesel. The diesel generator will run on bio-diesel for selected hours at night. Electricity produced will be distributed from a central location through local grid.

4. Components of System

Components for system

S No	Particulars	Qty
1	Project preparation / feasibility	--
2	Project Consultancy	--
3	Diesel Generator 10KVA or 5KVA x 2	01/02
4	Seed Press	01
5	Transesterification Plant	01
6	Energy saver lamps with holders	400
7	Electric fan	100
8	Structural Poles For Electricity Distribution & Transmission	As required
9	Intra & inter house wiring (transmission & distribution)	As required
10	Installation and commissioning	As required
11	Civil works	As required



TENDER NOTICE

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Government of Pakistan,
Alternative Energy Development Board (AEDB)
Room No. 344-B, Prime Minister's Secretariat, Islamabad
Tel: 9223427, 9207602
Fax: 051-9205790

TENDER NOTICE

1. AEDB intends to electrify 01 village through bio-diesel based power generation plant, as part of its National Rural Electrification Program. AEDB invites tenders from private & public, national & international, companies to set-up the pilot project as a demonstration model on turn key basis. The details of equipment, hardware, installation and commissioning and other project execution terms can be obtained in the form of tender documents from Alternative Energy Development Board office on any working day on payment of Rs.5000/-. These documents can also be downloaded free of charge from AEDB official website (www.aedb.org).
2. The tenders should reach the office of Assistant Director (Administration) AEDB Islamabad by 21-02-2006 at 1:00 pm accompanying a Demand Draft equal to 5% of the bid price (refundable).
3. Bid shall comprise a single package containing two separate sealed envelopes of technical and financial proposals. Envelops shall be marked as "Technical Proposal and Financial Proposal" in bold and legible letters.
4. AEDB reserves the right to reject any or all Tenders, without assigning any reason. Decision of the Board will be binding and final in all matters.
5. Technical Proposal will be opened on 23-02-2005 at 2:00 pm in Conference Room of AEDB in presence of the bidders who choose to be present.
6. Technical Proposals will be evaluated first and technically short listed companies will be informed accordingly for opening of financial bids.



TERMS AND CONDITIONS



TERMS AND CONDITIONS

1. Scope of work under this tender includes supply of items, transportation to the selected village, undertaking civil works for local grid, set-up of power generation facility, transmission of power from generation unit to households, distribution wiring in households, installation of appliances etc. This scope also includes identification of villages for electrification and formulation of social infrastructure for technology dissemination and management of the project.
2. Socio-economic survey for village energy needs must be carried out and a detailed report of village level energy master plan should be submitted to AEDB.
3. The exact requirement of transmission poles and distribution wires will be specified at the time of village selection and survey. However, maximum distance between the poles will not increase more than 60 Ft. Additionally, 01 pole will not distribute power to more than 05 households. The tender proposals should specify the specifications of wiring and poles.
4. Reliable products conforming to technical specifications would only be acceptable.
5. Payment would be made in Pak Rupees as per government procurement procedures.
6. Technical and financial offers must be submitted separately in sealed envelopes. Financial offers of technically accepted proposals would be opened only and considered.
7. Inspection and acceptance would be carried by an inspector or a team nominated by Chairman AEDB in accordance with a mutually agreed and signed acceptance criteria between AEDB and the executing party. The acceptance criteria will be prepared and signed after award of contract complying with the detailed features of accepted technical proposal and subsequent contract.
8. Supplied items and installation job would be guaranteed for one year against faulty equipment / material / workmanship.
9. 90 % payment would be made on proof of inspection and acceptance.
10. 10 % payment would be made on submission of Bank Guarantee for entire period of Warranty/ Guarantee.
11. Partial payment against supply of complete range and quantity of materials / items may be allowed.



12. Advance payments may be allowed on submission of bank guarantee
13. 5 % of the bid price will be submitted as Bid Security along with the offer in the form of bank guarantee or bank draft / pay-order.
14. Offers may be submitted on FOR basis to the selected village
15. Price of each item should be shown separately
16. Delivery period must be specified
17. Testing of supplied equipment would be carried by AEDB inspectors but testing facilities to check power output of Diesel Generators, voltmeter, ammeter, DC power supplies, multi meters etc would be provided by the supplier.
18. Project completion date is 31st December 2006.
19. Interested parties may contact AEDB for any clarification before submission of bids. Photocopy of receipt of tender documents form AEDB office must be attached with the technical offer.
20. Documents indicating conformance of firm to all other legal requirements for government procurement like payment of professional tax and sales tax must be attached with the technical offer.
21. Correct and verifiable performance and technical parameters must be specified. Equipment having potential of indigenous development would be preferred.
22. A comprehensive project management plan with details of work breakdown structure should be added in proposal. This includes the execution strategy, stepwise activities and the overall mechanics for turnkey solution.
23. The proposals should furnish a work plan to identify and select village, linkage with socio ~ techno ~ economic prospects during execution and capacity building at village grass root level to deliver a self operative system in the community.
24. The proposals should specify an efficient resource management plan taking raw materials, fuel availability, daily generation and utilization at household level and power generation unit.
25. Details of existing staff (technical and administrative) and similar projects undertaken previously must be listed.
26. The company participating in the tender must register itself with the AEDB.



TECHNICAL SPECIFICATIONS OF **HARDWARE AND EQUIPMENT**

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LIST OF ITEMS

S No	Particulars	Qty
1	Diesel Generator 10KVA or 5KVA x 2	01/02
2	Seed Press	01
3	Transesterification Plant	01
4	Energy saver with holders	400
5	Electric fan	100



Diesel Generator

Out put	:	5 KVA x 2 OR 10 KVA x 01
Generation efficiency	:	80%
Power phase	:	3-phase
Working Fuel	:	Bio-Diesel



Seed Press

Minimum feed capacity	:	50 kg per hour
Motive power	:	Electric motor (single phase, max 3 hp, 220V AC)
Optional motive power	:	Diesel engine
Construction	:	Skid mounting with suspension lugs
Operator & maintenance manuals	:	Yes



Transesterification Unit

Processing capacity	:	50 liters per day (8 hrs) with overnight settling for separation
Operation	:	Semi automatic
Motive power	:	Electric motor (single phase, max 1 hp, 220V AC)
Heating source	:	Max 2 KW with options of electric, gas and solar
Materials	:	Double walled (jacketed) with inner vessel made of SS and outer jacket \ made of FRP (glass-wool, rock-wool, PU foam insulation).
Construction	:	Skid mounting with suspension lugs
Operator & maintenance manuals:	:	Yes



Energy Saver Lamps

Rated power	:	220 Volt, AC
Power consumption	:	18-20 Watt
Light emitted by lamp	:	white
Pre-heater circuit	:	Installed
Polarity protection	:	Provided

Note:

Suppliers can suggest any other power capacity provided it matches with the overall power generation and consumption.



ELECTRIC FANS

Rated Power:	220 volt AC
Power Consumption:	35 - 48 watts
Size:	14 inches
RPM:	1000 - 1100

