

[e-TENDER NO: APEDA/DDUGJY/2015-16/01](#)

e-TENDER DOCUMENT

FOR

**RURAL ELECTRIFICATION OF 1058 NOS. OF OFF-GRID
VILLAGES IN ARUNACHAL PRADESH BY INSTALLING
300Wp SOLAR POWER PACK UNDER DEENDAYAL
UPADHYAYA GRAM JYOTI YOJANA (DDUGJY)**

Estimated Cost	: Rs. 127.00 Crores
Tender Document Fee	: Rs. 10,000/-
Earnest Money	: Rs.20.00 lakhs in the form of Demand Draft and Rs. 100.00 lakhs in the form of Bank Guarantee.
Performance Guarantee	: 10% of the Value of Award.

Prepared by:



**ARUNACHAL PRADESH ENERGY DEVELOPMENT AGENCY
(A STATE GOVERNMENT AGENCY)
URJA BHAWAN, TADER TANG MARG
ITANAGAR – 791111
PHONE NO: 0360-2211160
E-MAIL: apeda79@gmail.com**

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PART-1**1. e-TENDER NOTICE**

**ARUNACHAL PRADESH ENERGY DEVELOPMENT AGENCY
URJA BHAWAN, TADAR TANG MARG, ITANAGAR – 791 111
DISTRICT PAPUMPARE, ARUNACHAL PRADESH.
PHONE NO: 0360-2211160, FAX NO: 0360-2214426
E-MAIL: apeda79@gmail.com**

No. APEDA/W- 225 /DDUGJY/2015-16

Date: 06/04/2016

e-Tender Notice

Arunachal Pradesh Energy Development Agency invites online Bids from prospective Bidders through e-tendering for the design, supply, installation, testing and commissioning with 5 years comprehensive warranty and maintenance of 300Wp Solar Power Packs for Rural Electrification of 1058 Nos. of off-grid villages in Arunachal Pradesh as per the terms and conditions given in e -tender document.

The tender document is available at website <http://www.arunachaltenders.gov.in> and www.apeda.org.in. Interested bidders may view and download the e-Bid document, seek clarification and submit their e-Bid online up to the date and time mentioned in the table below:

(a)	Availability of tender document on website	From 06/04/2016 to 28/04/2016
(b)	Pre-Bid meeting	On 18/04/2016 at 11.00 AM at Urja Bhawan, T.T. Marg, Itanagar, Arunachal Pradesh
(c)	e-Bid submission end Date & Time	On 28/04/2016 at 3.00 PM
(d)	Online technical e-Bid opening Date & Time	On 29/04/2016 at 11.00 AM
(e)	Online financial e-Bid opening Date & Time (Only for technically qualified bidders)	Will be intimated on the date of technical e-Bid evaluation.
(f)	Venue of opening of technical & financial e-Bids	Urja Bhawan, T.T. Marg, Itanagar, Arunachal Pradesh.

Sd/-
(Director)
APEDA, Itanagar

Memo No. APEDA/W- 225 /DDUGJY/2015-16

Date: 06/04/2016

Copy to:

1. The Director, IPR, Govt. of AP, Naharlagun with the request to publish above e-Tender Notice immediately in the national and local dailies.
2. The Chairman, APEDA, Itanagar for information.
3. The Commissioner (Power & NRE), Govt. of AP, Itanagar for information.
4. The Executive Director (DDUGJY), REC Ltd., Core- 4, Scope Complex, 7 Lodhi Road, New Delhi – 110003, for information.
5. The GM, REC Ltd., Core- 4, Scope Complex, 7 Lodhi Road, New Delhi – 110003, for information.
6. The CPM, REC, Ltd., Sraddha, M.B. Road, G.S. Road Crossing, SOHUM/HDFC Points, Christian Basti, Guwahati – 781005 for information.

7. The P.P.S to HCM, Govt. of AP for information.
8. The PS to CS, Govt. of AP, Itanagar for information.
9. The PS to HM (Power & NRE), Govt. of AP, Itanagar for information.
10. The CEO, APDA, Department of Power, Govt. of AP, Itanagar for information.
11. The CE (P), CEZ cum Member Secretary, (EC) , APDA, Itanagar for information.
12. The CE (P), WEZ, Department of Power, Govt. of AP, Itanagar for information.
13. The CE (P), EEZ, Department of Power, Govt. of AP, Itanagar for information.
14. The CE (P), CEZ, Department of Power, Govt. of AP, Itanagar for information.
15. The CE , EZ, Department of Hydro Power Development, Govt. of AP, Itanagar for information.
16. The CE, WZ, Department of Hydro Power Development, Govt. of AP, Itanagar for information.
17. The DD, APEDA, Tezu/ Aalo/ Bomdila/ Yachuli for information.
18. Notice Board.
19. Office Copy

(Director)
APEDA, Itanagar

2. COVERING LETTER

FROM:-

(Full name and address of the Bidder)

.....
.....

To:

The Director,
Arunachal Pradesh Energy Development Agency,
Urja Bhawan, T.T. Marg, Itangar -791111
District Papum Pare, Arunachal Pradesh.

Subject: -Offer in response to e-Tender No: APEDA/DDUGJY/2015-16/01

Sir,

We hereby submit our offer in full compliance with terms & conditions of the above e-Tender. A blank copy of the e -Tender, duly signed on each page is also submitted as a proof of our acceptance of all specifications as well as Terms/ Conditions.

We confirm that, we have the capability to design, manufacture, supply, install and commission and then carryout 5 years comprehensive warranty maintenance of Solar PV Power Pack with all its components as required.

We also understand that the e-Tender is to be uploaded in two separate files named Part-A for Technical Bid & Part-B for Financial Bid only.

(Signature of Bidder)
With Seal

1. CHECK LIST OF ANNEXURES

(The following information/documents are to be annexed and flagged by the Bidders along with the BID)

Sl. No.	Annexure No.	Particulars	Yes/No/ Detail/Flag No.
1	Annexure -I (a)	Details of Tender document fees (Demand Draft No, Date, amount and Bank Name)	
	Annexure -I (b)	Details of Earnest money (DD No. & Date) /Bank Guarantee No. and Date, (valid for six months)	
2	Annexure -II	<p>The bidder is a Manufacturing Company/Proprietorship Firm/ Corporation registered in India of SPV Cells / Modules / Battery / PV System/ Electronics/LED lights/ (conforming to relevant National / International Standards) empanelled in MNRE till latest edition (Proof of being a manufacturer and empanelment of Channel Partner to be enclosed)</p> <p style="text-align: center;">OR</p> <p>A PV System Integrator empanelled in MNRE as Channel Partner and should have installed Solar Photovoltaic Lighting Systems sufficiently and copies of Orders and certificates indicating its successful execution to be enclosed along with empanelment certificate.</p> <p style="text-align: center;">OR</p> <p>The Bidder Should have Credit Rating (from MNRE Accredited Rating Agency) of “SP 3B” and above as on the date of bidding.</p>	
3	Annexure-III	Test Certificates for following items be enclosed. i. SPV Modules	
	Annex-III(a)	a) IEC 61215 edition II/ IS 14286 for Crystalline Modules	
	Annex-III(b)	b) IEC 61730 Part 1 & 2	
	Annex-III(c)	c) STC Performance Report –I V curve	
	Annex-III(d)	ii. Batteries –CECRI or MNRE authorized test centre report if battery make is other than specified in this document. iii. Balance of System	
	Annex-III(e)	a) LED – LM-80-08 , L70 , LED luminaire- LM-79-08	
	Annex-III(f)	b) Luminaries - IP 40 and charge controller housing- IP 21	
4	Annex-IV	Test Certificate for the complete tendered Solar PV power pack from a MNRE authorized testing center along with entire test data be enclosed.	
5	Annex -V	A copy of valid CST /State VAT/ TIN registration certificate	
6	Annexure - VI	Overall Average Annual Turnover of the Company/Firm/Corporation in the latest last three financial years (A summarized sheet of turnover of last three Financial Year certified by registered CA) with and latest balance sheet	
7	Annexure - VII	<p>MNRE accredited off- Grid Channel Partner/ Programme Administrator</p> <p style="text-align: center;">OR</p> <p>Credit Rating (from MNRE Accredited Rating Agency) of “SP 3B” and above</p>	
8	Annexure -VIII	A summarized sheet of cumulative experience in PV systems/power plants certified by registered CA	
9	Annexure -IX	Bidder’s cumulative experience * in last 10 years in supply and installation/commissioning of total number of Solar PV Lighting Systems. Cumulative nos.:	
10	Annexure-X	Value of a “ Single Order ” of PV Systems / Power Plants executed by the Bidder (A copy of the order indicating its value and certificate indicating its successful execution) Valued more than Rs. 50 Lacs upto Rs. 2.00 Crore ;Valued more than Rs. 2.0 Crores	
11	Annexure-XI	Bidder has Test Certificate for Solar Lanterns, Solar Home lighting System, Solar Street Lighting System, Solar Water Pumping System or SPV Modules, battery, Electronics, LED lighting unit etc from a MNRE	

		authorized testing center.(Test Certificate should have be latest after 2011) Number of Certificates issued:	
12	Annexure- XII	Cumulative Experience* of the Bidder in executing Contracts related to Solar Photovoltaic Systems/ Power Plants (Installed & Commissioned) 50KWp-500KWp >500KWp	
13	Annexure-XIII	The bidder has ISO 9001 certification	
14	Annexure-XIV	The bidder has ISO 14001 certification	
15	Annexure-XV	The bidder has ISO 18001 certification	
16	Annexure-XVI	Authorization letter of the Bidder, for the person representing his firm, that he is authorized to discuss with specific mention of this e-tender.	
17	Annexure-XVII	Cumulative Experience* of the Bidder in executing contracts (Installed & commissioned) of Stand Alone Solar P V Systems/ Power Plants:	
18	Annexure-XVIII	The bidder is a SPV Modules Manufacturing Company, Registered in India , with a min. Capacity of (mention Capacity in MW per annum)	
19	Annexure- XIX	The bidder is a SPV cells Manufacturing Company, Registered in India, with a min. Capacity of (mention Capacity in MW per annum)	
20	Annexure- XX	Others XX(i). An undertaking that the service centers will be opened in allotted district and list will be submitted before supply and installation for verification. XX(ii). An undertaking that they will employ local youths having ITI/ diploma certificate holders in the execution of the project including installation and maintenance as per as possible. XX(iii). An undertaking that they will cooperate with the Gram Vidyut Abhiynatas engaged by REC Ltd.	
21	Annexure- XXI	Duly filled technical bid Part-6	

Please flag the annexure and write flag number in the box.

*Bidder's experience should be in supply, installation/commissioning (contracts executed, completed and handed over) of Solar Photovoltaic Systems/ Power Plants for : MNRE supported Schemes / Programmes, (including Projects executed by channel partners availing MNRE support) OR Any Government Organization/ Agency/ SNA/PSU OR private Agency/firm.

Note:

- Bids received without supporting documents for the various requirements mentioned in the tender document may be rejected.
- No extra paper should be submitted in e-tender as well as with hard copy.
- If any paper certificate/document is not clear in scan and uploaded, the tender document may be rejected (scanning of paper are not less than 150 dpi in black & white).
- Hard copy of tender document should be in proper spiral binding and all annexures and their flags should be in proper order and also uploaded in relevant files of e-tender.

(Signature of Bidder with Seal)

2. PARTICULARS OF e-TENDER

1.	e-tender no.	APEDA/DDUGJY/2015-16/01
2.	Particulars of the work	Design, manufacture, supply, installation, testing and commissioning of Solar PV power pack as specified in the tender documents with 05 years warrantee comprehensive maintenance in the villages indicated for Rural Electrification of 1058 Nos. of off-grid villages in Arunachal Pradesh
3.	Period of work	6 months from the date of award.
4.	Last date and time of uploading of e-tender on website	28/04/2016 : 3.00 PM
5.	Period of validity of rates for acceptance	3 months from opening date of financial bid
6.	Date and Time of opening of e-tender (Technical bid.)	29/04/2016 at 11.00 AM
7.	Date and Time of opening of e-tender (Financial bid.)	Will be intimated to technically qualified bidders on the date of technical evaluation.
8.	Place of opening of e-tender	Urja Bhawan, T.T. Marg, Itanagar.

1. Bidders are advised to study the tender Document carefully. Submission of e-Bid against this tender shall be deemed to have been done after careful study and examination of the procedures, terms and conditions of the tender Document with full understanding of its implications.
2. The e-Bid prepared in accordance with the procedures enumerated in ITB Clause 15 of Section-I should be submitted through e-Procurement website <http://www.arunachaltenders.gov.in>
3. The e-Bids will be electronically opened in the presence of bidder's representatives, who choose to attend at the venue, date and time mentioned in the above table. An authority letter from the bidding company/ firm/ corporation etc will be required for their representative to be present during opening of the bids.
4. In the event of date specified for e-Bids opening being declared a holiday then the due date for opening of e-Bids shall be the following working day at the appointed time and place. However, Director, APEDA reserves the right to extend the date of opening of Financial Bid in unavoidable circumstances.
5. All the required documents including Price Schedule/BOQ should be uploaded by the e-Bidder electronically in the PDF/XLS format. The required electronic documents for each document label of Technical (Fee details, Qualification details, e-Bid Form and Technical Specification details) schedules/packets can be clubbed together to make single different files for each label. All the enclosures should be scanned and uploaded with the bid.

(Signature of Bidder with Seal)

5. GENERAL PARTICULARS OF BIDDER

1	Name of Bidder	
2	Postal Address	
3	Mobile no.	
4	Telephone, Telex, Fax No	
5	E-mail	
6	Web site	
7	Name, designation and Mobile Phone No. of the representative of the Bidder to whom all references shall be made	
8	Name and address of the Indian/foreign Collaboration if any	
9	Have anything/extra other than price of items (as mentioned in price Schedule) been written in the price schedule.	
10	Have the Bidder to pay arrears of income tax? If yes up to what amount?	
11	Have the Bidder ever been debarred by any Govt. Deptt. / Undertaking for undertaking any work?	
12	Monthly supply capacity (attach supporting document)	
13	Details of offer (please mention number of pages and number of Drawings in the hard copy)	
14	Reference of any other information attached by the tenderer (please Mention no. of pages & no. of drawings)	

(Signature of Bidder with Seal)

6. DECLARATION BY THE BIDDER

(REGARDING e-tender NO. APEDA/DDUGJY/2015-16/01)

I/We _____ (hereinafter referred to as the Bidder) being desirous of e-tendering for the work under the above mentioned e-tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the e-tender document,

DO HEREBY DECLARE THAT

1. The Bidder is fully aware of all the requirements of the e-tender document and agrees with all provisions of the e-tender document.
2. The Bidder is capable of executing and completing the work as required in the e-tender.
3. The Bidder accepts all risks and responsibilities directly or indirectly connected with the performance of the e-tender.
4. The Bidder has no collusion with other Bidders, any employee of APEDA or with any other person or firm in the preparation of the bid.
5. The Bidder has not been influenced by any statement or promises of APEDA or any of its employees, but only by the e-tender document.
6. The Bidder is financially solvent and sound to execute the work.
7. The Bidder is sufficiently experienced and competent to perform the contract to the satisfaction of APEDA.
8. The information and the statements submitted with the e-tender are true.
9. The Bidder is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
10. The Bidder has not been debarred from similar type of work by APEDA and or by any Government undertaking/ Department/ Ministry.
11. This offer shall remain valid for acceptance for 3 Months from the date of opening of financial bid of e-tender.
12. The Bidder gives the assurance to execute the e-tendered work as per specifications, terms and conditions.
13. The Bidder confirms the capability to design, manufacture, supply, install and commission and then to carryout 5 years comprehensive warranty maintenance of Solar PV Power Packs which will be installed under this e-Tender.

(Signature of Bidder with seal)

PART-2: INSTRUCTION TO BIDDERS

SECTION 1: THE TENDER DOCUMENT

1.1 CONTENT OF e-tender DOCUMENT

1.1.1 The e-tender procedure and contract terms are prescribed in the e-tender Documents. In addition to the e-tender Notice the Bidding documents include.

PART-A (Techno-Commercial Bid)

Part -1

- 1 e-tender Notice
- 2 Covering Letter
- 3 Checklist of Annexures
- 4 Particulars of e-tender
- 5 General Particulars of Bidder
- 6 Declaration by Bidder

Part – 2: Instruction to Bidders

- Section -1 Contents of e-tender document
- Section -2 Eligibility condition
- Section-3 Preparation of e-tender
- Section-4 Submission of e-tender
- Section -5 e-tender opening and evaluation
- Section-6 Procedure for Finalization of Bid

Part – 3: General Conditions of Contract

Part – 4: Scope of Work & Technical specifications

Part – 5: Details of Warranty

Part – 6: Technical Bid

Part – B: Financial Bid

The Bidder is expected to examine all instructions, forms, terms and specifications as mentioned in the e-tender document. Failure to furnish all information required by the e-tender documents or submission of a bid not substantially responsive to the Bid Document in every respect will be at the Bidder's risk and is likely to result in out-right rejection of the e-tender

1.2 LOCAL CONDITIONS

It shall be imperative on each bidder to fully inform him of all local conditions and factors, which may have any effect on the execution of the works covered under these documents and specifications. APEDA shall not entertain any request for clarifications from the Bidder, regarding such local conditions

1.3 CLARIFICATION AND PRE BID CONFERENCE:

A prospective Bidder requiring any clarification of the e-tender Documents may contact APEDA in writing or by Fax at the APEDA's mailing address indicated in the Invitation for e-tender. The Bidder(s) or their authorized representative(s) is / are invited to attend pre-bid meeting(s). APEDA will make all efforts to respond to the queries during the Pre Bid Meeting to be held on 18/04/2016 at 11.00 AM in **APEDA Directorate Office at Urja Bhawan, TT Marg, Itanagar**. The purpose of the pre-bid meeting will be to clarify any issues regarding the Bid. A compiled list of questionnaire and APEDA's response will be uploaded on the website for information of all concerned in <http://www.arunachaltenders.gov.in> and in <http://www.apeda.org.in>. All are requested to remain updated with the website. No separate reply/intimation will be given elsewhere. Verbal clarifications and information given by the APEDA or its employees or its representatives shall not be in any way entertained.

Enquiries/clarifications may be sought by the Bidder from:

Director,
Arunachal Pradesh Energy Development Agency,
Urja Bhawan, T.T. Mag, Itanagar -791111,
Phone: 0360-2211160
Fax: 0360-2214426
Email: apeda79@gmail.com
Website: <http://www.apeda.org.in>

1.4 AMENDMENT OF e-tender DOCUMENTS

At any time prior to the submission of the e-tender the APEDA may for any reason, whether at its own initiative or in response to a clarification requested by the Bidder, modify the e-tender documents by amendments. Such document shall be made available on websites: <http://www.arunachaltenders.gov.in> and in <http://www.apeda.org.in>. All are requested to remain updated with the website. No separate reply/intimation will be given elsewhere.

SECTION 2: ELIGIBILITY CONDITIONS

Eligibility Conditions for Bidders

1. Minimum Eligibility Conditions:**The Bidders should be**

A Registered Manufacturing Company/Firm/ Corporation in India of **SPV Cells / Modules Or Battery Or PV System Electronics or LED Lights** (Conforming to relevant National / International Standards)

OR

A PV System Integrator empanelled as channel partner accredited by the MNRE for off grid and decentralized solar application under JNNSM with MNRE.

(Should have the experience in supply, installation and commissioning of SPV Power Plants and Systems)

OR

Should have Credit Rating (from MNRE Accredited Rating Agency) of "SP 3B" and above as on the date of bidding.

Bidder should have the Test Certificate(s) for the components of the Solar PV Power Pack they will supply under this e-Tender(Test Certificate should have been issued on or after 2011 by any of the MNRE approved Test Centers)

The bidder should have experience in at least any one of the last three years(i.e. FY 2012-13, 2013-14, 2014-15) in executing contract of Solar Photovoltaic Systems/Power Plants (Installed and commissioned).

The Bidder should have valid CST /State VAT/ TIN/Service Tax registration certificate. A copy of which should be enclosed.

The Average Annual Turnover of the Company/ Firm/ Corporation in the last four financial years (FY-2011-12, 2012-13, 2013-14, 2014-15) should be at least Rs. 10.00 crores (rupees ten crores). This must be the individual Company's turnover and not that of any group of Companies. A summarized sheet of average turnover certified by registered CA should be compulsorily enclosed along with corresponding balance sheets.

2. Other Eligibility Conditions

The “Financial bids” of only those bidders shall be opened, who qualify in “Minimum Eligibility Conditions” as above and score at least 50 Points in “technical evaluation”. The “Points” for the “technical evaluation” shall be assigned as under:

Sl. No.	Criteria	Max. Point
1	MNRE accredited off- Grid Channel Partner/ Programme Administrator OR Credit Rating (from MNRE Accredited Rating Agency) of “SP 3B” and above	20
2	Cumulative Experience* of the Bidder in executing contracts of Solar Photovoltaic Systems/ Power Plants (Installation & Commissioning of PV Systems/ Power Plants) 50KWp-500KWp >500KWp	5 10
3	Bidder’s cumulative experience in last 10 years in supply and installation/commissioning of total number of Solar PV Lighting Systems. Cumulative nos.: > 10,000 nos. > 20,000 nos	5 10
4	Value of a “Single Order ” * of PV Systems / Power Plants executed by the Bidder : Valued more than Rs. 50 Lac upto Rs. 2.0 Crores Valued more than Rs. 2.0 Crores	5 10
5	Cumulative Experience* of the Bidder in executing contracts (Installed & commissioned) of Stand Alone Solar P V Systems /Power Plants: At least 50% of the tendered value At least 75% of the tendered value	5 10
6	Bidder has Test Certificate for Solar Lanterns, Solar Home lighting System, Solar Street Lighting System, Solar Water Pumping System or SPV Modules, battery, Electronics etc from a MNRE authorized testing center. (Test Certificate should have been issued on or after 2011.) Certificate for any two of the above Certificate for more than two of the above	5 10
7	The bidder is a SPV Modules Manufacturing Company, Registered in India ,with a min. Capacity of --- 25MWp per annum --- 50 MWp per annum	5 10
8	The bidder is a SPV cells Manufacturing Company, Registered in India, with a min. Capacity of --- 5 MWp per annum --- 10 MWp per annum	5 10
9	The bidder has ISO 9001 certification	3
10	The bidder has ISO 14001 certification	3
11	The bidder has ISO 18001 certification	3
12	The bidder should have class A electrical license	5

*Bidder’s experience should be in supply, installation/commissioning (contracts executed, completed and handed over) of Solar Photovoltaic Systems/ Power Plants for:

MNRE supported Schemes / Programmes, (including Projects executed by channel partners availing MNRE support) OR Any Government Organisation/Agency/ SNA/PSU OR Private Agency/Firm.

SECTION 3: PREPARATION OF e-Tender

3.1 LANGUAGE OF BID AND MEASURE

3.1.1 The e-tender prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the Bidder and APEDA shall be written in the English provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purpose of interpretation units of measurement shall be MKS system.

3.2 DOCUMENTS COMPRISING THE BID

3.2.1 The e-tender prepared by the Bidder shall comprise the following components

- (a) Covering letter as provided in e-tender document.
- (b) General particulars of bidder, as provided in e-tender document.
- (c) Declaration by the Bidder, as provided in e-tender document.
- (d) Documentary evidence establishing that the bidder is eligible to Tender and is qualified to perform the contract if its tender is accepted. Check list of Annexure as provided in e-tender document.
- (e) A blank copy of the e-tender document signed on each page, as a confirmation by the Bidder to accept all technical specifications/ commercial conditions along with all necessary enclosures/annexures.
- (f) Authorization letter of the Bidder, for the person representing his Company/Firm/ Corporation, that he is authorized to discuss and with specific mention of this e-tender.
- (g) Duly filled technical bid format Part-6.

3.3 BID PRICE

3.3.1 The Bidder shall indicate prices on the appropriate financial bid schedule.

3.3.2 DUTIES AND TAXES

The price quoted should include all taxes and duties, custom duty, excise duty, service tax, sales tax, C.S.T., local taxes, Trade Tax/VAT, Income Tax, Surcharge on income tax etc. if any. A Bidder shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & service tax norms will be payable by the Bidder. TDS will be deducted from the payment of the Bidder as per the prevalent laws and rules of Government of India and Government of Arunachal Pradesh in this regard.

3.4 BID CURRENCIES

3.4.1 Prices shall be quoted in Indian Rupees (INR) only

3.5 SECURITY DEPOSIT/ PERFORMANCE GUARANTEE:

3.5.1 The successful Bidders, who execute the agreement with APEDA for the work, shall have to furnish a contract security amount equivalent to 10% of total value of the contract in the form of Bank Guarantee valid for a period of 18 months from the date of execution of agreement. The bank guarantee may be issued by a nationalized bank or State Bank of India or its subsidiary bank. Bank Guarantee shall be in favour of "Director, APEDA". The aforesaid Bank Guarantee shall be furnished prior to the execution of agreement within 7 days from the date of LoI/ Award Letter.

3.6 PERIOD OF VALIDITY OF e-tender

- 3.6.1 Validity of the offer should be 3 months from the date of opening of the Financial Bid of the e-tenders. Without this validity the e-tenders will be rejected.
- 3.6.2 In exceptional circumstances; the APEDA will solicit the Bidder's consent to an extension of the period of validity. The request and the response there of, shall be made in writing. The contract performance security provided under clause 3.5.1 above shall also be suitably extended.

3.7 BID SECURITY (Earnest Money)

- 3.7.1 The bidder shall furnish, as part of its bid, bid security of Rs. 20.00 lakhs (rupees twenty Lakhs) in the form of Demand Draft in favour of "Director, APEDA" payable at SBI, Itanagar and a Bank Guarantee of Rs.100.00 lakhs (rupees one lakhs) only issued by a nationalized bank, or State Bank of India and its subsidiary banks. The bank guarantee shall be valid for a period of 6 months from the opening of Financial Bid.
- 3.7.2 Any bid not secured with the Tender Fee and Earnest Money will be rejected by the APEDA as non-responsive.
- 3.7.3 No Interest shall be payable on the amount of Earnest Money and the same will be released after the e-tenders have been decided, to those Bidders who fail to get the contract.
- 3.7.4 The e-tender security (earnest money) may be forfeited:
- a) If a Tenderer withdraws its e-Tender during the period of e-Tender validity.
 - b) If the successful Bidder fails to sign the contract within stipulated period.
- 3.7.5 EMD of successful bidder shall only be released after signing of agreement and submission of 10% Contract Security Bank Guarantee.
- ### 3.8 FORMAT AND SIGNING OF e-Tender
- 3.8.1 The bid must contain the name, residence and places of business of the persons making the e-Tender and must be signed and sealed by the Bidder with his usual signature. The name and designations of all persons signing should be typed or printed below the signatures.
- 3.8.2 e-Tender by corporation/ company must be signed with the legal name of the corporation/ company/firm by the 'President', 'Managing Director' or by the 'Secretary' or other designation or a person duly authorized
- 3.8.3 The original copy of the e-Tender shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized to bid for the bidder to the contract. The letter of authorization shall be submitted along with power-of-attorney. All the pages of the bid shall be initialed by the person or persons signing the e-Tender.
- 3.8.4 The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder in which case such corrections shall be initialed by the person or persons signing the e-tender.

(Signature of Bidder with seal)

SECTION: 4: UPLOADING OF e-Tender

- 4.1 Uploading of e-Tender: The bid shall be uploaded online.
- 4.1.1 The tender must be completed in all technical and commercial respect and should contain requisite certificates, drawings, informative literatures etc. as required in the specification.
- 4.1.2 **First part (Part-A)** should contain technical specification, brochure literature etc. All parts of tender documents except Financial Bid should be uploaded as per e-procurement mode in due date and time. Scanned copy of Requisite Earnest Money in the form of Demand Draft and Bank Guarantee should be enclosed/ uploaded. Duly filled Technical Bid Part-6 must be uploaded.
- 4.1.3 The Bidder should submit Price Bid in Second Part. Second Part (Part-B) should contain Financial Bid only and it should be uploaded as per e-procurement mode in due date and time.
Anything in regard to financial condition, payment terms, rebate etc. mentioned in Financial Bid may make the tender invalid. Therefore, it is in the interest of the Bidder not to write anything extra in Part-B except price.
- 4.1.4 The following document in hard copy must reach the office of APEDA at Urja Bhawan, T.T. Marg, Itanagar, before opening date and time of Technical e-Bid failing which, tender shall not be considered.
- 4.1.4(a) Original Demand Draft towards the Tender Document Fee.
- 4.1.4(b) Original Demand Draft and Bank Guarantee towards Earnest Money
- 4.1.4(c) The hard copy of the blank e-Tender Document along with annexure duly signed (every pages) by bidders.
- 4.2 **EXPENSES OF AGREEMENT**: A formal agreement shall be entered into between APEDA and the successful contractor/ bidder for proper fulfillment of the contract. The expenses of completing and stamping of the agreement shall be paid by the successful bidder.
- 4.3 **DEADLINE FOR SUBMISSION OF BIDS**: Bids must be uploaded by the tenderer in the date, time and address specified in the e-Tender Notice/ Tender Documents.

(Signature of Bidder with seal)

SECTION 5: e-Tender OPENING AND EVALUATION

5.1 OPENING OF e-Tender

The procedure of opening of the e-Tender shall be as under:

- 5.1.1 First Part (part-A) uploaded having e-Tender Technical and commercial aspects super-scribed as “Technical Bid” shall be opened at the time and date mentioned in the e-Tender Notice by APEDA’s representatives in the presence of Bidders, who choose to be present.
- 5.1.2 Second Part (Part-B) containing Financial Bid shall be opened (after obtaining clarifications and establishing technical suitability of the offer) as per schedule. Second Part of only those Bidders shall be opened whose First Part (Part-A) shall be found commercially clear and technically suitable.

CLARIFICATION OF e-Tender

- 5.2.1 To assist in the examination, evaluation and comparison of bids the APEDA may at its discretion ask the bidder for a clarification of its bid. The request for clarification and the response shall be in Writing.
- 5.3 APEDA reserves the right to interpret the Bid submitted by the Bidder in accordance with the provisions of this document and make its own judgment regarding the interpretation of the same. In this regard APEDA shall have no liability towards any Bidder and no Bidder shall have any recourse to APEDA with respect to the selection process. APEDA shall evaluate the Bids using the evaluation process specified in this document or as amended, at its sole discretion. APEDA’s decision in this regard shall be final and binding on the Bidders.

(Signature of Bidder with seal)

SECTION-6: Procedure for Finalization of BID

6.0 The Procedure for Finalization of BID would be as follows:

6.1 Finalization of BID:

First the Technical Bids shall be opened and evaluated.

Then the Price Bid of technically qualified bidders shall be opened.

The Party offering the lowest rate(s) (L₁) will be the successful bidder. However, work may be awarded to more than one party at the accepted lowest rate(s) if APEDA desires so in order to achieve completion of work in time. The rate(s) will be quoted by the bidders districtwise and L₁ will also be decided districtwise.

6.2 Finalization of Empanelment:

First the Technical Bids shall be opened and evaluated.

Then the Price Bids of technically qualified parties shall be opened.

- The lowest rate (i.e. L-1) will be given the preference, but it will not be binding on APEDA to award the work to L-1. The approved rate may be decided based on a justification made by APEDA on the offers received as too low a rate may affect quality and progress of work.
- L-1 i.e. lowest rate bidder or the party whose rate is accepted may not be awarded the entire work. It may be distributed to other participating technically qualified parties also in order to maintain quality of equipment/ work and also for timely completion of the work which is time bound.
- Approved justified/ lowest rate would be offered to other technically qualified bidders (i.e. L-2, L-3 and so on) having price not more than 25% above the lowest / approved rates (L-1) will be awarded the remaining quantity/ work (by district wise distribution) which is left not awarded to the L-1. In other words a short list will be prepared amongst the bidders on the line mentioned herein above.
- APEDA will assign districts to the short listed contractor/ bidders /suppliers at its wisdom and justification. Different districts have different numbers of beneficiaries and distribution of districts will be done according to the number of beneficiaries in a district. It will be ensured that one district will have only one service station set up by the concerned contractor. APEDA will place the orders/ award the work to the contractor/ bidder on this line.

- Training of the users / beneficiaries will be arranged by the contractor/ bidder in each of the village at the time of installation.
- After award of work, it should be executed and completed within the time schedule stipulated in the Tender Document, which is 6 months from the date of award. In case of delay (for any reason other than Force Majeure conditions or any extension thereof granted to him by APEDA), a penalty equal to 1.0% of the value of the unperformed services for each week (For the purposes of calculation of delay, part of week shall be treated as week) of delay until actual performance up to a maximum deduction of 10% of the delayed services.

6.2 If required APEDA reserves the right to negotiate with (lowest) L-1 bidder before finalization of the tender.

6.3 APEDA reserves the right at the time of awarding the contract to increase or decrease the quantity of goods and locations of supply without any change in price or other terms and conditions.

6.4 APEDA reserves the right to accept or reject any or all the bids without assigning any reason.

6.5 NOTIFICATION OF AWARD:

Notification of awarding the contract and list of successful Bidder(s) for contract shall be displayed on APEDA's website and shall be intimated in writing to the contractor.

6.7 CONTRACT AGREEMENT:

Before execution of the work, a contract agreement for execution of the work shall be signed by the Bidder with APEDA within 15 days of communication from APEDA. In case agreement is not executed within the stipulated time, Earnest Money of the bidder will be forfeited.

(Signature of Bidder with seal)

PART 3: GENERAL CONDITIONS OF CONTRACT

1.0 In the Deed of Contract Agreement, unless the context otherwise requires:-

DEFINITIONS:

- 1.2. "APEDA" shall mean "The Director of APEDA" and/ or his representative(s) and shall also include its successors and assignees in interest. The "Contractor(s)" shall mean (successful bidder/ bidders) i.e. the person/ firm/ company/ corporation/ organization, whose e-Tender(s) has/ have been accepted by APEDA and shall include his/their/ its legal representatives and successors in interest.
- 1.3 The agreement shall be on turn-key basis. The work shall be completed within 6 months from the date of award. However "APEDA" may in case of urgency, ask the bidder to complete the work earlier, with the mutual consent of the contractor/ bidder and APEDA. In case the contractor/ bidder fails to execute the said work within stipulated time, "APEDA" will be at liberty to get the work executed from the open market without calling any tender/ e-tender and without any notice to the contractor/ bidder, at the risk and cost of the contractor/ bidder. Any additional cost incurred by "APEDA" shall be recovered from the contractor/ bidder. If the cost of executing the work as aforesaid shall exceed the balance due to the contractor/ bidder, and the contractor/ bidder fails to make good the additional cost, "APEDA" may recover it from the contractor/ bidders' pending claims against any work in "APEDA" or in any lawful manner.
- 1.4 That on the request of the contractor/ bidder and also in the interest of the organization the "APEDA" is authorized to extend the validity of the agreement, subject to that the request of the contractor/ bidder is received before the expiry of the agreement period, or any extended period granted to the contractor/ bidder. Maximum period of extension shall be 2 months on the same terms and conditions as contained in this agreement.
- 1.5 The agreement shall be deemed to be extended till the date of completion of last part of work as per award subject to the completion period as provided in the clause 1.3.
- 1.6 It will be the sole responsibility of the contractor, to execute the work placed as per time schedule, and to ensure quality parameters, specifications and other requirements provided in the e-Tender document and as per agreement.
- 1.7 In the interest of the work, agreement executed between the contractor/ bidder and the "APEDA" may be extended to a mutually agreed period, if the need so arises, but it will be done under compelling situation/ condition only. It shall be the sole responsibility of the contractor/ bidder to get verified the quality & quantity of the supplied material at the site of delivery and get the work completed as per award and agreement.

2 LIQUIDATED DAMAGES

2.1 If the contractor/ bidder fails to perform the services within the time periods specified in the contract, then “APEDA” shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damage, a sum equivalent to 1.0% of the price of the unperformed services for each week (For the purposes of calculation of delay, part of week shall be treated as week) of delay until actual performance up to a maximum deduction of 10% of the delayed services.

Once the maximum is reached, the “APEDA” may consider termination of the contract. In the case of violation of contract, APEDA may confiscate pending payments/ dues of the contractor/ bidder assigning specific reasons and shall also have the power to debar/ blacklist the contractor/ bidder in similar circumstances. APEDA may also invoke performance security bank guarantee of 10%.

3 The contractor/ bidder shall have to comply with all the rules, regulations, laws and by-laws for the time being in force and the instructions if any, of the organization, in whose premises the work has to be done. “APEDA” shall have no liability in this regard.

4 FORCE MAJEURE

4.1 Notwithstanding the provisions of clauses contained in this deed; the contractor/ bidder shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfill his obligation under this deed due to event of force majeure circumstances.

4.2 For purpose of this clause, "Force majeure" means an event beyond the control of the contractor/ bidder and not involving the contractor/ bidder's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of Government either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes

4.3 However, If a force majeure situation arises, the contractor/ bidder shall immediately notify the “APEDA” in writing. The decision of the competent authority of APEDA in above conditions shall be final.

5 The High Court of Judicature at Guwahati and Courts subordinate thereto, at Itanagar, shall alone have jurisdictions to the exclusion of all other courts.

6 The contractor/ bidder shall not, without the consent in writing of “APEDA”, transfer, assign or sublet the work under the contract or any substantial part thereof to any other party

7 “APEDA” shall have at all reasonable time access to the works being carried out by the contractor/ bidder under the contract. All the work shall be carried out by the contractor/ bidder to the satisfaction of “APEDA”.

8 If any question, dispute or difference what so ever shall arise between “APEDA” and the contractor/ bidder, in connection with the agreement except as to matters, the decisions for which have been specifically provided, either party may forthwith give to the other notice in writing of exercise of such question, dispute or difference and the same shall be referred to the sole arbitrator to be appointed on mutual consent of both the parties. This reference shall be governed by the Indian Arbitration and Conciliation Act, 1996, and the rules made there under. The arbitration proceedings shall be conducted within the jurisdiction of Itanagar. The award in such arbitration shall be final and binding on both the parties. Work under the agreement shall be continuing during the arbitration proceedings unless the “APEDA” or the arbitrator directs otherwise.

- 9 “APEDA” may at any time by notice in writing to the contractor/ bidder either stops the work all together or reduce or cut it down. If the work is stopped all together, the contractor/ bidder will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. Such expenses shall be assessed by “APEDA”, whose decision shall be final and binding on the contractor/ bidder. If the work is cut down the contractor/ bidder will not be paid any compensation what so ever for the loss or profit which he might have made if he had been allowed to complete all the work included in the contract.
- 10 INSPECTION AND TESTS
- 10.1 The following inspection procedures and tests are required by the “APEDA” in the presence of “APEDA”'s representative if so desired by “APEDA”.
- 10.2 The “APEDA” or its representative shall have the right to inspect and / or to test the goods to confirm their conformity to the contract. The special conditions of contract and/ or the Technical specifications shall specify what inspections and test the “APEDA” required
- 10.3 INSPECTION AT WORKS.
- 10.3.1 The “APEDA”, through its duly authorized representative shall have at all reasonable times access to the contractor/ bidders premises or works and shall have the power at all reasonable time to inspect and examine the materials and workmanship of the works during its manufacture, supply, installation etc.
- 10.3.2 The contractor/ bidder shall give the “APEDA” , 15 day's written notice of any material being ready for testing as and when it is required so. It shall be mandatory that such notice should reach “APEDA” within 30 days of placement of award or signing of the agreement. Such tests shall be on the contractor/ bidder's accounts/ expenses except for the expenses of the inspector. “APEDA” reserves the full rights, to waive off inspection of material
- 10.3.3 The contractor/ bidder are required to get the entire lot of the ordered material inspected at one time, before the supply of the materials. In case the contractor/ bidder fails to get the entire lot inspected at one time, the total expenses of the further inspection will be borne by the supplier/contractor/ bidder.
- 10.3.4 APEDA will bear the inspector’s cost at only one manufacturing plant. If a component is produced in more than one location, then the cost of positioning the inspection in the second and subsequent plants would be borne by the successful Bidder at their cost.

10.3.5 The inspection by “APEDA” and issue of dispatch instruction there of shall in no way limit the liabilities and responsibilities of the contractor/ bidder in respect of the agreed quality assurance forming a part of the contract.

11. WARRANTY

11.1 The contractor/ bidder shall warrant as per standards for quality that anything to be furnished shall be new, free from all defects and faults in material, workmanship and manufacture, shall be of the highest grade and consistent with established and generally accepted standards for material of the type ordered, shall be in full conformity with the specifications, drawing or samples, if any and shall if operable, operate properly.

Nothing in clause 10 above shall in any way release the contractor/ bidder from any guarantee or other obligations under this contract.

11.2 Performance of Equipment: In addition to the warranty as already provided, the contractor/ bidder shall guarantee satisfactory performance of the equipment and shall be responsible for the period or up to the date specified in clause 11.3 hereof after the equipment has been accepted by the “APEDA” to the extent for any defects that may develop such defects shall be removed at his own cost when called upon to do so by the “APEDA”

11.3 The Warranty period shall be 25 Years for the PV modules and 5 years for complete system including battery from the date of commissioning and handing over of the system. The contractor/ bidder shall rectify defects developed in the system within Warranty period promptly. In case the defects are not rectified within a week of the receipt of the complaint by the contractor/ bidder “APEDA” shall have full liberty to restore the system in working condition. The expenditure so incurred by “APEDA” shall be deducted from the contractor/ bidder pending claims, security/ performance guarantee deposit or in other law full manner.

11.4 Since the maintenance of the system may also be taken up by the contractor/ bidder after expiry of 05 years of warranty period if the end user/”APEDA” so desires, the contractor/ bidder shall take up annual maintenance of the installed systems.

11.5 The contractor/ bidder shall maintain the system under annual maintenance contract with the end user.

12. Notice statement and other communication sent by “APEDA” through registered post or telegram or fax or Email to the contractor/ bidder at his specified addresses shall be deemed to have been delivered to the contractor/ bidder.

13. Any work which is not covered under this contract but is essential and required for the completion of job (to the satisfaction of APEDA) shall be carried out by the contractor as extra item for which payment shall be made separately at the rates decided by APEDA

14. The work shall be carried out by the contractor/ bidder as per design and drawings approved by “APEDA”, wherever necessary, the contractor/ bidder shall submit relevant designs and drawings for approval of “APEDA”, well in advance. Work carried out without APEDA’s approval shall not be accepted and the “APEDA” shall have the right to get it removed and to recover the cost so incurred from the contractor/ bidder.

15. The contractor/ bidder shall provide a manual/ booklet containing instruction manual/ routine maintenance manual and maintenance record of the systems with each unit supplied or installed. This shall be both in English and Hindi language

The following minimum details must be provided with the manual:

- (a) About the complete photovoltaic system including PV modules, battery and electronics
 - (b) Do's and Don'ts
 - (c) Clear instructions on regular maintenance and trouble shooting of the system
 - (d) Name & address of the contact person in case of non-functioning of the system.
 - (e) About LED lighting
16. The contractor/ bidder shall not display the photographs of the work and not take advantage through publicity of the work without written permission of "APEDA". The contractor shall distribute and fix a calander at site, showing instructions, Do's, Don'ts with each unit. (The format of calander should be approved by APEDA).

17. PATENT RIGHT AND ROYALTIES.

The Contractor/ bidder shall indemnify the "APEDA" against all third party claims of Infringement of patent, royalty's trademark or industrial design rights arising from use to the goods or any part thereof.

18. PACKING AAND FORWARDING

- 18.1 Contractor/ bidders, wherever applicable, shall after proper painting, pack and crate all the equipment in such manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till time of installation. Contractor/ bidder shall be held responsible for all damage due to improper packing.
- 18.2 The contractor/ bidder shall inform the "APEDA" of the date of each shipment from his works, and the expected date of arrival at the site for the information of the "APEDA" project offices at least 7 days in advance.

19. DEMURRAGE WHARFAGE, ETC

All demurrage, wharage and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the contractor/ bidder.

20. INSURANCE

The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage during transportation shall be included in the bid price.

20. TRANSPORTATION

The contractor/ bidder is required under the contract to deliver the goods to the site.

21. **TERMINATION FOR INSOLVENCY**

“APEDA” may at any time terminate the contract by giving written notice to the contractor/ bidder without compensation to the contractor/ bidder, if it becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the “APEDA”.

22. **TERMINATION FOR CONVENIENCE**

The “APEDA”, may by written notice sent to the contractor/ bidder, terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser’s convenience in the interest of “APEDA”.

23. **APPLICABLE LAW**

The contractor/ bidder shall be interpreted in accordance with the laws of the purchaser’s country i.e. India. The station of “APEDA” Headquarter shall have exclusive jurisdiction in all matters arising under this contract.

25. **NOTICE**

25.1 Any notice given by one party to the other pursuant to the contract shall be sent in writing or by Email and confirmed in writing to the address specified for that purpose in the special condition of contract.

25.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

26. **TAXES, DUTIES AND INSURANCE:**

The price quoted should include all taxes, duties and Insurance expenditure, custom duty, excise duty, service tax, sales tax, C.S.T., local taxes, Trade Tax/VAT, Income Tax, Surcharge on income tax etc. if any. A supplier/ contractor/ bidder shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & service tax norms will be payable by the contractor/ bidder. If any new tax/duty is levied during the contract period the same will be borne by the contractor exclusively. TDS will be deducted from the payment of the contractor/ bidder as per the prevalent laws and rules of Government of India and Government of the Arunachal Pradesh in this regard.

27. OTHERS:

27.1 I-V curve of the each module technical details such as Voc, Isc, , FF, cell efficiency and Pmax etc shall be supplied along-with each consignment and copy should be sent to APEDA’s HQ for records.

27.2. The Contractor/ bidder in consultation with concerned Project Officer of “APEDA” will conduct training programme for users, focusing on main features, operation and maintenance of the systems.

27.3. The Contractor/ bidder shall continue to provide spare parts after the expiry of warranty period at the users cost. If the contractor/ bidder fail to continue to supply spare parts and services to users “APEDA” shall take appropriate action against the Contractor/ bidder.

27.4. After successful supply/commissioning of the systems and training, the system will be handed over to the concerned beneficiary.

27.5. It shall be the sole responsibility of the contractor/ bidder to get verified the quality & quantity of the supplied material at the site of delivery.

28. PAYMENTS:

The payments shall be made as per the following terms and conditions:

- i) Bill/ Invoice will be raised by the contractor after completion of installation and commissioning of the systems in each village against which **80%** of the value of work done shall be paid after it is duly certified by the concerned district officers of APEDA as per the technical specification and terms and conditions specified in the contract and after handing over the systems to the beneficiary (ies) and certified by them
 - ii. 10% of the work done will be paid after establishing of service center(s) at the places wherever it is required.
 - iii) The balance 10% payment will be released @2% at the end of each year for 5 years, on satisfactory performance and timely submission of quarterly performance report. However, this can be released immediately after installation and commissioning of the system against bank guarantee of 2 % each valid respectively for 1,2,3,4 & 5 years.
 - iv) All the payment shall be released from APEDA head office, Itanagar on submission of bill, JCR duly verified by the concerned district officer of APEDA and certified by the beneficiaries/ users.
29. In case of any ambiguity in interpretation of any of the provisions of the tender, the decision of “APEDA” shall be final and binding.

(Signature of Bidder with seal)

Part -4

SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

SCOPE OF WORK:

The scope of work includes the following:

- A. Design, manufacture, supply, installation, testing and commissioning of Solar Power Packs including 05 years comprehensive warranty maintenance in various districts of Arunachal Pradesh as directed/ ordered by APEDA on contract basis as per the following specifications, terms and conditions to electrify 1058 number of off-grid villages in Arunachal Pradesh (the number of villages may vary at the time of execution).
- B. Design, manufacture, supply, installation, testing and commissioning of Solar Street Lighting Systems including 05 years comprehensive warranty maintenance and civil foundation work in 1;2;4 CC in various districts of Arunachal Pradesh as directed/ ordered by APEDA on contract basis as per the following specifications, terms and conditions (4923 numbers, which may vary at the time of execution).

GENERAL TECHNICAL SPECIFICATIONS FOR SOLAR POWER PACK:

A Solar Power Pack under this contract will consist of 3 (three) Nos. of white LED luminary of 3Watt, 2 Nos. of white LED luminary of 6Watt, mobile charging plug point, solar PV modules of 300Wp (2x150Wp) and battery of 2x75AH capacity, necessary control electronics/ Charge Controller, inter connecting wires / cables, module mounting structures etc. to operate the load for minimum 6 to 8 hrs daily. The broad performance specifications of solar power pack systems are given below:-

BROAD PERFORMANCE PARAMETERS

PV Module	<p>Only indigenous modules shall be used in the project.</p> <p>SPV module 2x150 Wp at STC. Each Module Voc minimum of 21V.</p>
Battery	Low Maintenance flooded electrolyte Tubular positive plate Lead Acid batteries of capacity 12 V, 75 AH, C/10 (2 Nos.)
Light Source	White Light Emitting Diode (W-LED) batten type 6 Watt (2Nos.) and 3 watt (3Nos.) Using LEDs which emits ultraviolet light will not be permitted.
Light Out put	White colour (colour temperature Typical 6000K with 510 K variation). The illumination should be uniform without dark bands or abrupt variations and soothing to the eyes.
Fan	24 Volt operated DC ceiling/ Table fan of maximum power consumption 20 watt (Optional)

Inverter	(i) 24V, 100VA, pure sine wave inbuilt in charge Controller if supplied as per Option-I given below. (ii) 24V,300VA, pure sine wage if is supplied separately as per Option-II given below.
Charge Controller	24V,15A with MPPT

CHARGE CONTROLLER AND INVERTER OPTIONS:

Option-I:

There may an option for having an inbuilt inverter of 24V/100VA in the Charge controller and have a 3pin 5A AC outlet for operating TV/ Laptop/Mobile Charger. At the same time the charge controller has also DC output ports for DC lighting load with a DC USB for Charging mobile and using radio etc. This arrangement will minimize power loss. This will also increase reliability as separate circuits will be there for DC and AC circuits.

Option-II:

As per MNRE specification, an inverter of 24V/300VA with AC output can be provided and the entire load will operate on AC only.

The bidder will have to clearly work out the feasibility in the above two options and bring out clearly what is preferable in terms of user friendliness and give their suggestion and quote for the arrangement of Charge Controller and Solar Inverter.

INDICATIVE LOAD:

- (i) 3 Nos. of White Light Emitting Diode (W-LED) Luminaire (max. 3.0 Watts each)
- ii) 2 Nos. of White Light Emitting Diode (W-LED) Luminaire (max. 6.0 Watts each)
- iii) 1 No. TV set or Laptop or Mobile Charger at a time (AC).
- iv) DC USB port for operating radio and mobile charging.
- v) DC outlet socket for operating DC fan (optional).

MINIMUM TECHNICAL REQUIREMENTS / STANDARDS FOR SOLAR POWER PACK:

1. DUTY CYCLE

The Solar Power Pack system consist of three nos. white LED luminary of 3Watt and two numbers of 6 Watt, a mobile charging plug point should be designed to operate for minimum 6 to 8 hrs daily.

2. SPV MODULES:

- i. Only indigenous modules of reputed brand such as Tata BP Solar, BHEL, BEL, CEL, REIL, Moserbaer, or equivalent (IEC Tested) shall only be used in the project. Crystalline high power/ efficiency cells shall be used in the Solar Photovoltaic module. The power output of the module shall not be less than 150 Wp at load voltage* 16.4 +- 0.2 Volt under standard test conditions (STC). * not applicable in case of MPPT charge controller. A copy of test report at STC with I-V curve of solar module used in test certificate issued by MNRE approved or authorized lab should be enclosed.
- ii. The open circuit voltage of the PV modules under STC should be at least 21.0 Volts.
- iii. PV module must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.
- iv. The terminal box on the module shall be designed for long life out door operation in harsh environment should have a provision for opening for replacing the cable, if required.
- v. The offered module shall be in accordance with the requirements of MNRE.
- vi. Latest edition of IEC 61215 edition II / IS 14286 for Crystalline and shall be certified by MNRE authorized test centre. The bidder shall submit appropriate certificates.
- vii. PV modules must quality to IEC 61730 Part 1- requirements for construction & Part 2 – requirements for testing, for safety qualification.
- viii. Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided and if required, blocking diode(s) may also be provided.
- ix. **Identification And Traceability:**
Each PV module must use a RF identification tag (RFID), which must contain the following information:
 - (i) Name of the manufacturer of PV Module
 - (ii) Name of the Manufacturer of Solar cells
 - (iii) Month and year of the manufacture (separately for solar cells and module)
 - (iv) Country of origin (separately for solar cells and module)
 - (v) I-V curve for the module
 - (vi) Peak Wattage, I_m , V_m and FF for the module
 - (vii) Unique Serial No. and Model No. of the module
 - (viii) Date and year of obtaining IEC PV module qualification certificate
 - (ix) Name of the test lab issuing IEC certificate
 - (x) Other relevant information on traceability of solar cells and module as per ISO 9000 series.
The RFID should be inside the module laminate.

3. BATTERY

Battery shall be flooded electrolyte Tubular Lead Acid, Low Maintenance type with low antimony lead alloy plates and ceramic vent plugs. The positive plate should contain low antimony casted at high pressure to ensure the void free and consistence grain orientation to protect plate support from anodic

corrosion. The container of battery should be of minimum 400 mm high made of PPCP of high tensile and acid resistance polyester gauntlets. The batteries should conform to IS 1651 / IS 13369. A copy of the relevant test certificate for the battery should be furnished. The battery of reputed Indian make Exide, Amco, HBL, Luminous, Amar raja, Tata power or equivalent (Tested by Central Electro-chemical research laboratory, CECRI, Tamilnadu or authorized test centre of MNRE for relevant IS 1651/IS 13369/IEC 61427 standard) shall only be used and the copy of detail test report should be enclosed as per standard parameters.

- i. Capacity of the battery shall not be less than 24V, 150 Ah at C10 rate (2X75AH).
- ii. DOD shall be 75% i.e., at least 75 % of the rated capacity of the battery should be between fully charged & load cut off conditions.
- iii. Battery shall have a design life expectancy of minimum 1500 cycle at 80% DOD at 25°C with C10 discharge. Life cycle details received from original manufacturer should be attached.
- iv. Battery terminal shall be provided with covers.
- v. Suitable carrying handle shall be provided.
- vi. Bidder shall mention the design cycle life of batteries at 75%, 50% and 25% depth of discharge at ambient temperature up to 45 degree C.
- vii. The batteries shall be designed for operating in ambient temperature of site upto 50 degree C.
- viii. The self discharge of batteries shall be less than 3-4 % per month of rated capacity at 27 degree C.
- ix. Batteries shall be provided with micro porous vent plugs & acid level indicator.
- x. Batteries shall be provided with physical parameters along with detail of length, width, height and weight with and without acid.

4. LIGHT SOURCE:

- i. The light source will be of white LED type Mid Flux LEDs .The color temperature of white LEDs used in the system should be in the range of 6000°k with standard tolerance of 510°k. Use of LEDs which emits ultraviolet light will not be permitted. The quality of light should be soft soothing to the eye .It must be free from the glare.
- ii. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye. Higher light output will be preferred. The light output from the white LED light source should be almost constant.
- iii. The lamps should be housed in an assembly suitable for indoor use and shall comply to IP40/ or as per MNRE specification. The temperature of heat sink should not increase more than 30 degree C above ambient temperature even after 48 hrs of continuous operation. Heat Sink Material used in the LED batten should be of Extruded Aluminum as body and good heat sink in order to have good heat dissipation and thermal management for ensuring the better life of the luminaries with high quality of Polycarbonate diffuser for achieving soft and glare free light.
- iv. Mid power LED of CREE/NICHIA/OSRAM/SEOUL SEMICONDUCTOR/PHILIPS / LUMILEDS /LEDNIUM/LG Make or equivalent (Having LM79 and LM 80 test report) shall only be used.
- v. The lumens output of luminaire should be typical 480 lumens for 6watt and typical 210 lumens for 3 watt lamp with permissible standard tolerance. The uniformity of light should be more than 0.6 and Emin/Emax ratio should be more than 0.4.
- vi. The LEDs luminaire should have life time about 50,000 hrs as per L70.

- vii. The lumen depreciation of LED luminaire shall not be more than 30% at 50,000 burning hours as per L70.
- viii. Power consumption of the LED Luminaire / Lighting unit shall be Nominal 6 Watt and Nominal 3 watt (including LED Driver power loss) with permissible standard tolerance.
- ix. The luminaire should be wall mounted and placed at the centre of the wall and 2.5 m above the ground.
- x. Other Parameters : LED DC current regulation – better than 3 % Input – 24 V DC
Driver Type- DC-DC (as per IEC 62384)
CRI - Typical 75 % and not less than 70
Lighting quality- Free from glare, flickering and UV
Ambient temp– upto 50 deg
Total electronics efficiency > =90 %
- xi. Driver Characteristics - reverse polarity protection and suitable to operate between 20V to 28V
- xii. Auto resettable reverse polarity protection shall be provided
- xiii. LED lighting unit shall comply to L70, L79-08 and L80-08 or as per MNRE specification.
- xiv. Standards and copy of test certificate should be submitted.
- xv. The make, model number, country of origin and technical characteristics of white LEDs used in the lighting system must be furnished.
- xvi. The beam angle of luminaire shall be min 100 deg and the distribution shall be symmetrical on either side of axis.
- xvii. The luminaires have to be mounted on the wall only and the light must be distributed.
- xviii. Luminaries should have embossing of manufacturer and be manufactured in India.

5. ELECTRONICS

- i. MPPT to maximize energy drawn from the Solar PV array. The MPPT charger shall be microcontroller based. The details of working mechanism of MPPT shall be mentioned. PV charging efficiency shall not be less than 90% and shall be suitably designed to meet array capacity. MPPT must conform to IEC 62093, IEC 60068 as per specifications. At least compliance test report of MPPT as per EN50530 should be submitted.
- ii. The charge controller shall have
 - (i) Appropriate battery charging algorithms with temperature compensated set points for charging/ discharging
 - (ii) PV array disconnect/reconnect and load disconnect/reconnect points.
 - (iii) Charger rating 24V 15A
 - (iv) Protection against polarity reversal of PV array and battery, Over Current, Short Circuit, Deep Discharge, Blocking diode protection against battery Night time leakage through PV Module
- iii. Electronics should operate at 24 V and the efficiency of DC-DC converter should be at least 90 %.

- iv. The system should have protection against battery overcharge and deep discharge conditions. The numerical values of the cut off limits of lower voltage should not be less than 11.1 Volt.
- v. Fuses should be provided to protect against short circuit conditions.
- vi. A blocking diode should be provided as part of the electronics, to prevent reverse flow of current through the PV module, in case such a diode is not provided with the PV module.
- vii. Full protection against open circuit, accidental short circuit and reverse polarity should be provided
- viii. The self consumption of the charge controller shall not be more than 20 mA at rated voltage and rated current.
- ix. Adequate protection shall also be incorporated under no-load conditions (i.e. when the system is ON & the load is removed).
- x. The system should be provided with 3 LED indicators: a green light to indicate charging in progress, DARK GREEN LIGHT indicating battery full charged and a red LED to indicate deep discharge condition of the battery. The green LED should glow only when the battery is actually being charged.
- xi. All capacitors ceramics based shall be rated for max. temp of 105° C..
- xii. Resistances shall preferably be made of metal film of adequate rating.
- xiii. Fibre glass epoxy of grade FR 4 or superior shall be used for PCB boards.
- xiv. The voltage drop from module terminals to the battery terminals should not exceed 0.6 volts including the drop across the diode and the cable when measured at maximum charging current.
- xv. The charge controller should have output port for each light, fan and mobile charging with maximum output power 45 watt. Overload and short circuit protection should be incorporated.
- xvi. Charge controller should be used indoor & housed in a suitable casing as per IP21.
- xvii. The charge controller should be mounted on wall above 6 feet from ground.

Technical Requirement/Standards

Item / System	Applicable BIS /Equivalent IEC Standard Or MNRE Specifications	
	Standard Description	Standard Number
Solar PV Systems	Crystalline Silicon Terrestrial PV Modules	IEC 61215 / IS14286 Test Certificates / Reports from IECQ / NABL accredited laboratory for relevant IEC / equivalent BIS standard. If IEC certificates are not available for 120 Wp capacity, qualification certificate from IEC / NABL accredited laboratory as per relevant standard for any of the higher wattage regular module shall be furnished. Further, the manufacturer should certify that the supplied module is also manufactured using same material design and process similar to that of certified PV module
Charge Controller/MPPT Units and Protections		IEC IEC 62093 Equivalent BIS Std. or as pe MNRE specification.
Storage Batteries	General Requirements & Methods of Testing Tubular Lead Acid /Capacity Test Charge/Discharge Efficiency Self-Discharge	IS 1651/ IS 13369
Cables	General Test and Measuring Method	IEC 60189
	PVC insulated cables for working voltage up to and including 1100 V	IS 694/ IS 1554
	UV resistant for outdoor installation	IS/IEC 69947
Junction Boxes /Enclosures for Charge Controllers/	General Requirements	IEC 62208 IP21
Luminaries		IP 40
LED	Lamps Luminary Cycle life Driver performance	LM -80-08 LM 79-08 LM 70 IEC 62384 Or as per MNRE specification.

6. MECHANICAL HARDWARE

- (i) A metallic frame structure (hot dip galvanized with 35*35*3 mm angle) to be fixed on the roof. The frame structure should be fixed at 30 degree from horizontal facing true south.
- (ii) Battery Box :
A vented metallic box of 18 SWG thick made of pre coated galvanized (60 micron thickness) ms sheet for housing the storage battery indoors should be provided with proper lock and key. The boxes should be inscribed with APEDA written on at least two faces. The size of box should be as per battery size (including vent plug/level indicator) providing minimum clearance of 25 mm on all sides. Louvers for proper ventilation should be provided on one side and back of the battery box. No vent shall be providing on top of battery box. Box should be provided with proper locking arrangement. The edges of box should be turned properly to give smooth edge and good strength. Two wooden battens should be fixed inside the battery box to avoid the electrical contract between battery and box. Danger logo as approved by APEDA shall be screen printed on the box. Since the battery box will be sited on ground surface, it should be kept on plastic/rubber/jute mat minimum 10 mm thick to avoid the direct contact on ground.
- (iii) Electric Cable:
The electric cable used shall be twin core PVC insulated water and UV resistance copper cable of minimum size 1.5mm. Cable shall meet IS 1554 / 694 Part 1:1988 & shall be of 650V/1.1 kV.

7. OTHER FEATURES:

The contractor / bidder will have service center(s) established at least one in each district of their operation and keep a technician and necessary spare parts readily available so that the beneficiaries can get their system rectified/ repaired when fault occurs. The technician(s) of the contractor will go to the villages from time to time and check the systems in a routine way.

8. INSTALLATION OF SYSTEM:

The system should be properly installed at each of the household of the beneficiaries in different villages. The SPV module mounting structure along with suitable mounting legs should be properly grouted depending upon the location and requirement of the site. The grouting should be such that it should withstand the maximum wind speed /storm. The frame should be fixed with nuts and bolts. Appropriately sized cables should be used to keep electrical losses to a bare minimum. All wiring should be in a proper conduit or capping case. Wire should not be hanging loose. Any minor items which are not specifically included in the scope of supply but required for proper installation and efficient operation of the SPV systems, is to be provided by the manufacturer as per standards. Wiring should be joint less and switches should be of appropriate value and suitable for DC operation.

9. AUTHORIZED TESTING LABORATORIES/ CENTERS

Test certificates / reports for the BOS items including LED lights / components can be from any of the NABL/ IEC Accredited Testing Laboratories or MNRE approved test centers.

20. WARRANTY

The mechanical structures, electrical works including power conditioners/inverters/charge controllers/ maximum power point tracker units/distribution boards/digital meters/ switchgear/ storage batteries, etc. and overall workmanship of the Solar power packs/ systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.

Traceability of the product to be supplied

In order to prevent the misuse of the product such as unauthorized sale or diversion to the open market, the following incorporation shall be made in the product.

Engraving (or) Screen printing of APEDA at a suitable place on the main components viz., SPV Panel, Battery, LED Lighting Units to be used in the installation of the solar power packs.

GENERAL TECHNICAL SPECIFICATION OF WHITE LED SOLAR STREET LIGHTING SYSTEM:

DEFINITION:

Light Emitting Diode (LED) is a p-n junction device which emits light when forward electric current passes through it. A LED based solar street lighting system aims at providing solar electricity for operating LED lights for specified hours of operation per day. The broad performance specifications of a White Light Emitting Diode (W-LED) light source based solar street lighting system are given below:

BROAD PERFORMANCE PARAMETERS:

Light Source White Light Emitting Diode (W-LED) Light output White colour (colour temperature 55000 - 65000 K) minimum 25 LUX for the first 6 hours of operation then minimum 12 lux for the balance operating hours. When measured at the periphery of 4 meter diameter from a height of 4 meter. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye. Higher light output will be preferred. Mounting of light Minimum 4 metre pole Mounted PV Module 75 Wp under STC, measured at 16.4 Volt load. Module Voc minimum of 21V. Battery Tubular Positive plate Lead acid or gel type VRLA , 12 V- 75 AH @ C/10, Max DoD 80%, Electronics Min 90% total efficiency, Average duty cycle - Dusk to dawn, Autonomy - 3 days (Minimum 42 operating hours per permissible discharge)

DUTY CYCLE:

The LED solar street lighting system should be designed to operate from dusk to dawn, under average daily insolation of 5.5 kWh /sq.m. on a horizontal surface.

LIGHT SOURCE:

1. The light source will be of white LED type. Single lamp or multiple lamps can be used; Wider

view angles of a minimum of 120° or more. **The luminous performance of individual LED used should not be less than 90 lumen/watt when measured luminaire as whole.** The colour temperature of white LEDs used in the system should be in the range of 55000 K – 65000 K. Use of LEDs which emits ultraviolet light will not be permitted.

2. The light output from the white LED light source should be constant throughout the duty cycle.
3. The lamps should be housed in an assembly suitable for outdoor use. The temperature of LED should increase not more than 150 above ambient temperature. This condition should be complied even after two hours of operation at its maximum operation voltage (ie. Just before over voltage cut off) The white LED should be of high quality and should stand for minimum 50000 hours. If the luminaire fails/ need repair in LED/ electronics the whole should be replaced with the new one within the gurrantee period.
4. The make, model number, country of origin and technical characteristics of white LEDs used in the lighting system must be furnished.

PV MODULE:

1. The PV module (s) shall contain mono/ multi crystalline silicon solar cells with IEC 61215(revised) certification or equivalent National or International Standards. The manufacturer should have the required certification for at least one of their regular modules. Further, the manufacturer should certify that the submitted module is also manufactured using same design and process
2. The power output of the PV module must be reported under standard test conditions (STC) at 16.4 Volt loading voltage. I_V curve of the each module should be submitted at the time of installation.
3. The open circuit voltage of the PV modules under STC should be at least 21.0 Volts.
4. The terminal box on the module should have a provision for opening for replacing the cable, if required.
5. A strip containing the following details should be laminated inside the module so as to be clearly Visible from the front side:
 - a) Name of the Manufacturer or distinctive Logo
 - b) Model or Type No.
 - c) Serial No.
 - d) Year of make

BATTERY:

- (i) Tubular positive plate Lead acid or gel type VRLA battery should conform to latest BIS standards. A copy of the test certificate for the battery (including its make, country of origin and model number) used in the system should be provided.
- (ii) At least 80 % of the rated capacity of the battery should be between fully charged & load cut off conditions.

ELECTRONICS:

- (i) The total electronic efficiency of DC-DC converter should be at least 90 %.
- (ii) Electronics should operate at 12 V and should have temperature compensation for proper charging of the battery throughout the year.
- (iii) The light output should remain constant with variations in the battery voltages.

- (iv) LED luminaire should be 12watt with a timer circuit inbuilt which can automatically on after 6 hours of operation and reduce the luminaire wattage 50% of actual load.

ELECTRONIC PROTECTIONS:

1. The system should have protection against battery overcharge and deep discharge conditions. The numerical values of the cut off limits must be specified, while submitting the samples for the testing purposes.
2. Fuses should be provided to protect against short circuit conditions.
3. A blocking diode should be provided as part of the electronics, to prevent reverse flow of current through the PV module(s), in case such a diode is not provided with the PV module.
4. Full protection against open circuit, accidental short circuit and reverse polarity should be provided.
5. Adequate protection is to be incorporated under no load conditions, e.g. when the lamps are removed and the system is switched ON.
6. Electronics should operate at 12 V and **should have temperature** compensation for proper charging of the battery throughout the year.
7. The W-LED driver circuit should be based on constant voltage, constant current, high frequency technology. The component used in LED driver circuitry should be highly reliable of reputed make and efficient. Efficiency : The total electronic efficiency should be at least 90%. W-LED Life : Lumen output of W- LED should remain same though out the warranty period. CHARGE CONTROLLER: The unit should have the following feature:
 - i) This unit should be designed for charge regulation of storage battery and safe guard the battery against over charge & deep discharging.
 - ii) The voltage cut-off should be set in such a way to utilize the 80% of the fully charged battery capacity.
 - iii) The lower limit of cut off voltage should not be less than 11.4 volts.
 - iv) The charge controller should reconnect the load when battery gets fully charged. The difference in these two voltage set point should be neither too small nor too large to avoid the relay chattering.
 - v) A reverse blocking diode should be provided to prevent discharge of battery in rainy season and in night.
 - vi) The various functions should be displayed through LED indicator indicating the operations being carried out by the controller such as, load current off (red) battery charging (green) The light indicator of lower voltage should be lower at 11.6 volts. However the unit with red and Green shall also be accepted.
 - vii) The indicator should be fixed on front side of the battery box/ Luminary.
 - viii) A switch & fuse should be provided with the controller.
 - ix) The unit should have protection against short circuit, lightening, reverse polarity surge etc.
 - x) The PCB's of controller should be glass epoxy.
 - xi) All the connector indication should be covered with transparent hard plastic sheet screened properly.

MECHANICAL COMPONENTS:

- (i) Metallic frame structure (with corrosion resistance paint) to be fixed on the roof of the house to hold the SPV module. The frame structure should have provision to adjust its angle of inclination to the horizontal between 0 and 45, so that it can be installed at the specified tilt angle.
- (ii) It should be possible to mount the light source on a metallic arm attached to the pole. The metallic arm for holding the light assembly should be extended at least 0.5 metres from the pole and set at a suitable angle to maximize uniform illumination of desired level over the specified area.
- (iii) A vented metallic / polymer box with acid proof corrosion resistance paint (in case of metallic) for housing the storage battery outdoors should be provided. The quality should be of high standards to withstand the life period. If defect arises in the guarantee period, same is to be (mandatory) replaced.
- (iv) The SPV module should be fixed on a rigid pole. The pole should be of minimum **65 NB GI pipe (B Class) of at least 03 mm** thickness.
- (v) The pole should be made of GI steel pipe with a height of 4 meters above the ground level after grouting and final installation. The pole should have the provision to hold the weather proof lamp housing. The pole along with base plate should have suitable cement concrete foundation to assisted local worst climate conditions. The base plate shall be connected with the foundation with holding down bolted.
- (vi) SPV panel shall be mounted on pole. The mounting structure shall be fixed in the center of pole made flat at fixing end, square angle adjusting plate of 115 mm size 3 mm thick shall be provided. So that SPV panel can be fixed at inclination of 15 or 30 degree from horizontal.

BATTERY BOX:

The battery box should be made of suitable polymer or 20 SWG, MS sheet. The battery box shall be painted with acid proof corrosion resistant paint (in case of metal) with APEDA written on at least two faces. The box shall be properly painted after chemical cleaning & primer coating. The size of box should be as per battery size providing sufficient clearance on all sides. Lovers for proper ventilation should be provided on each side and back of the battery box. No vent shall be providing on top of battery box.

Box should be provided with proper locking arrangement. The edges of box should be turned properly to give smooth edge and good strength. Two wooden battens should be fixed inside the battery box to avoid the electrical contact between battery and box. However, polymer material can be used for battery box.

Serial No.: Each system should have a serial number starting with APEDA (Serial No.) to be mentioned on a name plate with manufacture's name on the battery box.

ELECTRIC CABLE:

The electric cable used shall be twin core PVC insulated copper cable of size 24/0.20. The size of wire between luminary and battery should not be less than 32/0.20 copper. The battery lead should be provided with the suitable battery clip.

- (i) Components and parts used in the solar street lighting system should conform to the latest BIS specifications, wherever such specifications are available and applicable.

- (ii) Other hardware such as clamp, nut bolt etc should be as per requirement of system. The material should be of good quality.

OTHER FEATURES:

- (i) The system should be provided with 2 LED indicators: a green light to indicate charging in progress and a red LED to indicate deep discharge condition of the battery. The green LED should glow only when the battery is actually being charged.
- (ii) There will be a Name Plate on the system body, which will give:
 - (a) Name of the Manufacturer or Distinctive Logo.
 - (b) Model Number
 - (c) Serial Number
 - (d) Year of manufacture
- (iii) Necessary lengths of wires / cables, switches suitable for DC use and fuses should be provided.

QUALITY AND WARRANTY:

- (i) Components and parts used in White LED solar street lighting systems should conform to the latest BIS / international specifications, wherever such specifications are available and applicable. A copy of the test report / certificate stating conformity of BIS /international standards must be submitted.
- (ii) The PV module will be warranted for a minimum period of 25 years from the date of supply and the complete White LED solar street lighting system including the battery) will be warranted for a period of at least 5 years from the date of supply.

DOCUMENTATION:

- (i) An Operation, Instruction and Maintenance Manual, in English language, should be provided with the solar street lighting system.
- (ii) The following minimum details must be provided in the Manual:
 - (a) About Photovoltaics
 - (b) About White LED solar street lighting system - its components and expected Performance.
 - (c) About PV module. In case of imported modules it is mandatory to provide a copy of the international product qualification certificate.
 - (d) About White LED Lights. The make, model number, country of origin and technical characteristics of LEDs should be stated in the product data sheet and furnished to APEDA.
 - (e) About battery and electronics used
 - (f) Clear instructions about mounting of PV module.
 - (g) About charging and significance of indicators.
 - (h) DO's and DONT's,
 - (i) Clear instructions on regular maintenance and trouble shooting of solar street lighting system.
 - (j) Name and address of the person or service center to be contacted in case of failure or complaint.

INSTALLATION OF SYSTEM:

The system should be properly installed at site. The SPV module mounting structure along with pole should be properly grouted depending upon the location and requirement of the site. The grouting should be such that it should withstand the maximum wind speed /storm. The pole should be grouted with CC mixture of 1:2:4 of radius of 300 mm having depth of 900mm.adequate space should be provided behind the PV module/array for allowing un obstructed air flow for passive cooling. Cables of appropriate size should be used to keep electrical losses to a bare minimum. Care should be taken to ensure that the battery is placed with appropriate leveling on a structurally sound surface. The control electronics should not be installed directly above the battery. All wiring should be in a proper conduit or capping case. Wire should not be hanging loose. Any minor item, which is not specifically included in the scope of supply but required for proper installation and efficient operation of the SPV systems, is to be provided by the manufacturer/ supplier.

PART -5**WARRANTY AND MAINTENANCE**

The PV modules will be warranted for a minimum period of 25 years from the date of supply. (Output wattage should not be less than 90% at the end of 10 years and 80% at the end of 25 years). The mechanical structures, electrical components including battery and overall workmanship of the Solar power pack Systems must be warranted for a minimum of 5 years from the date of commissioning and handing over of the system. The Comprehensive Maintenance (within warranty period) shall be executed by the firm themselves or through the authorized dealer/ service center of the firm in the concerned district. It is mandatory for the contractor/ bidder to open an authorized service center in the concerned district before the supply/installation of the system. Necessary maintenance spares for five years trouble free operation shall also be supplied with the system. The contractor/ bidder shall be responsible to replace free of cost (including transportation and insurance expenses) to the purchaser whole or any part of supply which under normal and proper use become dysfunctional within one month of issue of any such complaint by the purchaser.

The service personnel of the Successful Bidder will make routine quarterly maintenance visits. The maintenance shall include thorough testing & replacement of any damaged parts Apart from this any complaint registered/ service calls received / faults notified in the report generated by the IVRS should be attended to and the system should be repaired/ restored/ replaced within 4 days. A separate Service & Maintenance manual shall be maintained with each system as per the format provided by APEDA. The deputed personnel shall be in a position to check and test all the components regularly, so that preventive actions, if any, could be taken well in advance to save any equipment from damage. Any abnormal behavior of any component shall be brought to the notice of APEDA to appropriate action. Normal and preventive maintenance of the SPV home lighting systems such as cleaning of module surface, topping up of batteries, tightening of all electrical connections, cleaning & greasing of battery terminals, also the duties of the deputed personnel during quarterly maintenance visits. During operation and maintenance period of the Solar power pack systems, if there is any loss or damage of any component due to miss management/miss handling or due to any other reasons pertaining to the deputed personnel, what-so-ever, the supplier shall be responsible for immediate replacement/rectification. The damaged component may be repaired or replaced by new component. Contractor/bidder shall submit quarterly maintenance report regularly to concern project office with intimation to APEDA head quarter within 15days. Failing which payment for such period will not be released or recommended.

PART-6
TECHNICAL BID
e-Tender NO. APEDA/ DDUGJY/2015-16/01

Technical Bid (Part-A)			
	Description	To be furnished by the Tenderer	
		Solar Power Pack	Solar Street Light
A.	Solar PV Module		
	1. Type of Module		
	2. Make		
	3. Availability of RFID tag		
	4. Max power at STC Pmax (W)		
	5. Max power voltage Vmp(V)		
	6. Max power current Imp(A)		
	7. Open circuit voltage Voc (V)		
	8. Short circuit current Isc (A)		
	9. Load current at 16.4 Volt Iload		
	10. Conversion Efficiency		
	11. No of cells per module		
	12. bypass diodes		
	13. Solar module frame material		
	14. Module Dimension		
	15. Module Weight		
16. Fill factor			
B.	Battery		
	1. Make		
	2. Type		
	3. Capacity of Battery		
	4. Self Discharge		
	5. DOD		
	6. Design Cycle Life of battery		
	7. Charge efficiency		
8. Size & Weight of Battery			
C.	Electronics		
	1. Make		
	2. Charger Type		
	3. PV Charging Efficiency		
	4. Idle current consumption		
	5. Operating voltage		
	6. Temperature compensated set points		
	7. Details of Indicators provided		
8. Details of Protections provided			

	i. Battery Over charge set value		
	ii. Deep discharge set value		
	iii. Short Circuit		
	vi. Open Circuit		
	v. Reverse polarity		
	vi. Blocking Diode		
	vii. Others		
D.	LED Lighting Unit		
	1. Make and material of housing		
	2. Power consumption of LED lighting unit.		
	3. No of LEDs		
	4. Wattage of each LED		
	5. Driver Consumption		
	6. Make and origin of LED		
	7. Lumens output		
	8. LED DC Current Regulation		
	9. Input Voltage		
	10. Beam Angle		
	11. CRI		
	12. LED Efficacy		
	13. Luminaire Efficiency		
	14. Automatic ON/OFF Timings		
	15. Other features (IP ---)		
E.	Module Mounting frame		
	1. Material used		
	2. Whether Protection against corrosion		
	3. Angle of inclination to horizontal		
F	Battery housing		
	1. Material		
	2. Dimension		
	3. Whether Protection against corrosion provided		
	4. Air vent and locking arrangement		
G.	Connecting cables / wire		
	1. Material and size		
	2. Details of Switches (Nos.)		

(Signature of Bidder with seal)

PART-7**ADDITIONAL CONDITIONS AND INFORMATION TO BIDDER:**

1. Funding Pattern: The funding of the scheme will be done by the Govt. of India and Govt. of Arunachal Pradesh in the ratio of 85:15.
2. VAT: The State VAT / Entry Tax will be 4% and the Govt. of India will not do funding for the same. However, the bidder will quote the amount of VAT in their Bid. If the State Govt. does not exempt it during the course of the execution, the same will be paid by successful bidder at the Entry Gate and include the same in their bill. Otherwise, it will be deducted by APEDA at the time of release of payment and deposited to the Department of Tax and Excise, Govt. of AP,
3. The Arunachal Pradesh Energy Development Agency (APEDA) may also be called as the Employer and its correspondence address is:

The Arunachal Pradesh Energy Development Agency (APEDA)

Urja Bhawan, T.T. Marg, VIP Road, Near I.G. Park,

PO & PS: Itanagar, District: Papum Pare,

Arunachal Pradesh, PIN: 791 111.

Phone: 0360-2211160

Fax: 0360-2214426

Email: apeda79@gmail.com

apeda79@yahoo.com

(It is a State Govt. Agency of Govt. of Arunachal Pradesh and is represented by its Director)

For the purpose of execution of the contract, the contractual activities shall be performed by the Employer “for and on behalf of the Owner” except in cases where the Owner itself is statutorily required to do so.

4. The Owner is:
The Government of Arunachal Pradesh, represented by the Commissioner/ Secretary (Power & NRE).
5. Time for Completion:
The Time for Completion of the contract is 6 (six) months from the date of award or issuance of Letter of Intent (LoI).
6. The Contracts to be entered into with the successful Bidder shall be as under :
 - i) The Contract shall be for complete turnkey execution for supply of materials/ goods from Ex-Works on FOR site basis including providing of all the services required i.e. inland transportation for delivery at site, insurance, loading, unloading, storage, handling at site, installation, testing and commissioning including performance testing in respect of all the equipment supplied with 5 years warranty and annual maintenance of systems supplied and installed for 5 years with service centers set up strategic locations in each District and any other services specified in the Contract Documents.

- ii) The Contract will be signed in two originals and the Contractor shall be provided with one signed original and the second will be retained by the APEDA/ Employer.
 - iii) The Contractor shall provide free of cost to the Employer all the engineering data, drawing and descriptive materials submitted with the bid, in at least two (2) copies to form a part of the Contract immediately after Notification of Award.
7. Bid Security or Earnest Money: An amount of Rs.20.00 lakhs will be deposited by the bidder in the form of a Demand Draft in the favour of the “Director, APEDA, Itanagar” payable at SBI, Itanagar along with a Bank Guarantee (BG) for a value of Rs.100.00 lakhs valid for 6 months as Bid Security or Earnest Money. Scanned copy of the demand draft and BG will be uploaded in the web portal along with the bids. The original Demand Draft and BG shall be submitted to the Employer on and before the day of the opening of the bids. This amount will be adjusted in the value of Contract Performance Security of the successful bidders and those of the unsuccessful bidders will be returned back to them after finalization of the tenders/ bids. The demand draft shall have a validity of 6 months.
 8. Contract Performance Security: Contract Performance Security in the form of Bank Guarantee (BG) will be submitted by the successful bidder within 7 days of award of work for a value equivalent to 10% of the contract amount valid beyond 6 months from the specified date of commissioning/ completion of work.
 9. Tender Document Fee: An amount of Rs.10,000/- will also be deposited by the bidder in the form of a Demand Draft as Tender Document Fee. Scanned copy of the same will be uploaded in the tender web portal.
 10. Warrantee and Annual Comprehensive Maintenance Contract (AMC): Entering into the agreement for performance of the contract will be binding on the contractor(s) to give warrantee of their products against any manufacturing defect for 5 years and will bind the contractor to perform annual maintenance of the systems supplied and installed by them for complete 5 years from the date of installation of the systems in the village(s).
 11. Service Centers: Each eligible contractor will have to set up at least one service centre in each district of their operation, where a skilled technician and readily available spare parts will be made available during the entire period of AMC.
 12. It will not be binding on the Employer to award the work to the Lowest Bidder. Price acceptance will depend on the justified rate in comparison to the market rate.
 13. Work may be distributed to more than one party district wise at the accepted rate(s) for speedy and better execution and completion of the work in time.
 14. Sample of Product/ System: The bidders shall have to produce one set of working sample of their product in complete shape to the Employer on or before the final bidding day. Work will be awarded to the Parties/ Bidders whose samples are accepted.
 15. Gram Vidyut Abhiyantas (GVAs): REC limited has appointed Gram Vidyut Abhiyantas for monitoring of the work in all the districts where the work will be executed. These Abhiyantas

should be given all necessary cooperation by the Contractor and the Project Managers (DD, PO, JE), of the Employer in discharging their duties.

16. The terms and conditions of the sanctioning authority (ies) of the Project(s) i.e. the Govt. of India and REC including supplemental and modification etc thereof will form part of the agreement/ contract.
17. The number of villages to be taken up for electrification may vary at the time of execution as per site requirement and condition and therefore, the quantum of work and amount of contract may be varied accordingly and the contractor shall have to comply with any instruction given to them by the Employer for such variation.
18. Suryamitra: There is a Programme under MNRE to provide training to ITI Certificate and Diploma holders on operation and maintenance of SPV devices and systems and it is called "Suryamitra Skill Development Programme". There are 28 numbers of such trained suryamitras in Arunachal Pradesh who have been recently trained by NBIRT, Silchar and they are available for providing their service. The successful contractor(s) will have to engage them in the district of their origin in their service centers. They will be engaged by the contractor to provide necessary repairs and maintenance service including installation of the systems during the time of execution.

PART-B: FINANCIAL BID

e-Tender NO. APEDA/ DDUGJY/2015-16/01

Name of the Firm: -----

WORK PART –I :

Design, Manufacturing, Supply, Installation, Testing and Commissioning including loading, unloading, safe storage, transportation upto site of installation of Solar PV Power Pack of 300Wp capacity comprising of the following integral components with 5 years Warrantee and 5 years Comprehensive Maintenance from the date of installation;

(i) SPV Module of 300Wp (2x150W)

(ii) Mounting Structure for module made of galvanized iron angles of assorted size (1set).

(iii) Charge Controller:

Option-I: Charge controller of 24V, 15A with MPPT system and inbuilt inverter of capacity 150 VA to deliver both DC output for DC load (lighting, fan & USB), and also AC output for running TV and Mobile Charger, OR

Option-II:

Charge Controller of 24V, 15A with MPPT system along with a separate inverter of 24V, 300VA.

(iv) Battery of 12V, 75 AH, C-10, LM flooded type. Lead acid (2 Nos.)

(v) Copper Cables of 32/0.20 multi-strand 2.0 m in length with Copper battery Terminals, nuts and bolts etc as required (1set).

(vi) White LED luminaire of 3Watt (3 Nos.)

(vii) White LED luminaire of 6 Watt (2 Nos)

TOTAL APPROXIMATE QUANTITY FOR ALL DISTRICTS = 15401 SYSTMS (DISTRIBUTED DISTRICTWISE AS BELOW)

Sl. No.	Description of Items	Quantity	Unit	Estimated Rate	Rate Quoted by Bidder including 4% VAT	Amount	Remarks
1	Anjaw	192					
2	Changlang	1043					
3	Dibang Valley	156					
4	East Kameng	2379					
5	East Siang	43					
6	Kurung Kumey	5505					

7	Lohit	33					
8	Lower Dibang Valley	393					
9	Lower Subansiri	1936					
10	Papum Pare	342					
11	Tawang	170					
12	Upper Siang	137					
13	Upper Suansiri	1959					
14	West Kameng	327					
15	West Siang	786					
	TOTAL	15401					

WORK PART – II:

Design, Manufacturing, Supply, Installation, Testing and Commissioning including loading, unloading, safe storage, transportation up-to site of work of Solar PV Street Lighting System with white LED luminaire of 12 watt with auto dimmer, battery of lead acid positive plate, 12V, 75AH, C-10, GEL, VRLA type and complete with mounting pole with bracket made of galvanized steel of 80mm dia of at least 5m length including erection work in 1:2:4 CC foundation of 900mm depth and 300mm dia with 5 years Warrantee and 5 years Comprehensive Maintenance from the date of installation.

TOTAL QUANTITY FOR ALL THE DISTRICTS = 4923 Nos

Sl. No.	Description of Items	Quantity	Unit	Estimated Rate	Rate Quoted by Bidder including 4% VAT	Amount	Remarks
1	Anjaw	68					
2	Changlang	303					
3	Dibang Valley	52					
4	East Kameng	735					
5	East Siang	13					

6	Kurung Kumey	1760					
7	Lohit	10					
8	Lower Dibang Valley	121					
9	Lower Subansiri	662					
10	Papum Pare	97					
11	Tawang	58					
12	Upper Siang	44					
13	Upper Suansiri	652					
14	West Kameng	95					
15	West Siang	253					
	TOTAL	4923					

NOTES:

1. Certified that rates quoted above are as per the requirement, specification terms & condition mentioned in the e-tender document.
2. The rates quoted are inclusive of all taxes & duties, storage, transportation up to site, insurance, installation, testing, commissioning, handling charges etc and 5 year comprehensive warrantee and annual maintenance charges and any other job required to properly execute the work.

(Signature of Bidder With seal)

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ANNEXURE- I
JOINT COMMISSIONING & HANDING OVER CERTIFICATE & WARRANTY CARD

Solar Power Pack:

It is hereby certified that following system with following details has been supplied, installed and commissioned.

Sl. No.	Items	Details
1	Name of system	
2	Agreement number Date	
3	Any other specific important written order	
4	UID number (14 digit)	
5	Name of Beneficiary (with mobile number)	
6	District	
7	Block	
8	Gram Panchayat	
9	Exact location on installation (land mark)	
10	Date of installation	
11	Warrantee expire on	
12	Name & Address of the Manufacturer / supplier of the system.	
13	SPV Modules installed	
	Sr. No.	
	Make	
	Model	
14	Battery	
	Sr. No.	
	Make	
	Model	
15	Training for operation & maintenance of the system	Provided/not provided
16	Technical literature, operation & maintenance manual in English/ Hindi	Provided/not provided

(In case of complaint dial toll free number for complaint lodging)

(Signature)
Authorised signatory of
Contractor (with seal)

(Signature)
Name of beneficiary

(Signature)
Project Officer/ In-charge
APEDA (with seal)

(Signature)
DD, APEDA
With Seal

(Project Officer will obtain 03 copies of joint commissioning report and two copies to be sent to H.Q.)

ANNEXURE-II**JOINT COMMISSIONING & HANDING OVER CERTIFICATE & WARRANTY CARD****Solar Street Light:**

It is hereby certified that following system with following details has been supplied, installed and commissioned.

Sl. No.	Items	Details
1	Name of system	
2	Agreement number Date	
3	Any other specific important written order	
4	UID number (14 dight)	
5	Name of Village with name of Head of village and his mobile number if any.	
6	District	
7	Block	
8	Gram Panchayat	
9	Exact location on installation (land mark)	
10	Date of installation	
11	Warrantee expire on	
12	Name & Address of the Manufacturer / supplier of the system.	
13	SPV Modules installed	
	Sr. No.	
	Make	
	Model	
14	Battery	
	Sr. No.	
	Make	
	Model	
15	Training for operation & maintenance of the system	Provided/not provided
16	Technical literature, operation & maintenance manual in English/ Hindi	Provided/not provided

(In case of complaint dial toll free number for complaint lodging)

(Signature)
 Authorised signatory of
 Contractor (with seal)

(Signature)
 Name of beneficiary

(Signature)
 Project Officer/ In-charge
 APEDA (with seal)

(Signature)
 DD, APEDA
 With Seal.

(Project Officer will obtain 03 copies of joint commissioning report and two copies to be sent to H.Q.)

List of villages with Census code and Manual Cartage Distance

1. District : Anjaw

Sl.No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Kanguliang	HAYULIANG	266812	12	13	4	12 Km
2	Dong	Walong	266880	4	4	1	14 Km
3	Maha	Hayuliang	266702	3	3	1	12 Km
4	Khowegko	Chaglagam	266843	5	5	1	11 Km
5	Payaparap	Chaglagam	266847	4	4	1	16 Km
6	Long Jam	Manchal	266744	3	3	1	14 Km
7	Eliang	Manchal	266746	3	3	1	12 Km
8	Pirah	Manchal	266747	4	4	1	18 Km
9	Chutong	Manchal	266758	4	4	1	19 Km
10	Doringko	Chaglagam	266848	9	9	2	17 Km
11	Chipuiliang	Chaglagam	266841	10	12	5	8 Km
12	Tabretong	Chaglagam	266845	10	12	5	12 Km
13	Payagam	Chaglagam	266854	11	13	5	1 Km
14	Pailiang	Chaglagam	266844	13	15	5	20 Km
15	Gomin	Chaglagam	266850	14	16	6	5 Km
16	Chirang	HAYULIANG	266789	10	12	5	35 Km
17	Glotong	HAYULIANG	266788	11	13	5	45 Km
18	Qunboo	Manchal	266757	10	12	5	8 Km
19	Ekailiang	Manchal	266760	11	13	5	9 Km
20	Chowailing	Manchal	266745	12	15	6	15 Km
21	Chowagong	Walong	266915	7	7	2	11 Km
Total :				170	192	68	

2. District : Changlang

Sl.No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance	
					Power Pack	Solar Street Light		
1	2	3	4	5	6	7	8	
1	Phangseng	Changlang	264137	19	20	6	14	Km
2	Relangkan	Changlang	264146	33	35	10	14	Km
3	Jotin Juda	Changlang	264159	33	35	10	16	Km
4	Gandhigram Bl.I & II	Changlang	264244	342	347	91	50	Km
5	4 K.M. PWD Camp Jungmungsung	Changlang	264079	5	5	1	2	Km
6	9 K.M. PWD Camp (Jongkey)	Changlang	264110	3	3	1	2	Km
7	Industrial Estate	CHANGLANG	264086	13	15	5	2	Km
8	3 K.M. Forest Camp (Namdang-II)	CHANGLANG	264143	13	15	5	4	Km
9	17 Mile M.V. Road (Sher) (17 Mile Village)	KHAGAM-MIAO	264287	12	14	5	2	Km
10	Daragaon	KHAGAM-MIAO	264238	47	49	14	105	Km
11	Dawodi	KHAGAM-MIAO	264239	37	39	11	102	Km
12	Phaparbari	KHAGAM-MIAO	264240	47	50	15	98	Km
13	Gaherigaon	KHAGAM-MIAO	264241	11	13	5	100	Km
14	Hazolo	KHAGAM-MIAO	264242	32	35	11	95	Km
15	Ramnagar	KHAGAM-MIAO	264243	21	24	8	90	Km
16	Chidudi	KHAGAM-MIAO	264245	30	32	10	110	Km
17	Mazgaon	KHAGAM-MIAO	264246	42	45	14	115	Km
18	Twohut	KHAGAM-MIAO	264247	44	47	14	118	Km
19	Topihill	KHAGAM-MIAO	264248	39	41	12	110	Km
20	Buddhamandir	KHAGAM-MIAO	264249	25	27	8	120	Km
21	Sidikuh	KHAGAM-MIAO	264250	39	41	12	80	Km
22	7 K.M. Yungchik PWD (Yungchik)	Manmao	264089	20	22	7		Km
23	11 K.M. PWD Camp (Maithingro Kaan - II)	Manmao	264166	26	28	9		Km
24	Sasum II	Manmao	264175	27	29	9		Km
25	24 K.M. PWD Camp	Manmao	264168	30	32	10		Km
Total :				990	1043	303		

3. District : Dibang Valley

Sl.No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance	
					Power Pack	Solar Street Light		
1	2	3	4	5	6	7	8	
1	Aoli	ANELIH-ARJU	266024	13	14	4	60	Km
2	Tyee Model Village	ANELIH-ARJU	266013	8	8	2	25	Km
3	Awoka	ANELIH-ARJU	266014	4	4	1	35	Km
4	Cheppe	ANELIH-ARJU	266017	6	6	2	45	Km
5	Akhuli	ETALIN-MALINEY	265968	2	2	1	15	Km
6	Ambolin	ETALIN-MALINEY	265969	4	4	1	25	Km
7	Akaya	Anelih-Arju	266021	3	3	1	6	Km
8	Ethore	Anelih-Arju	266033	3	3	1	5	Km
9	Idipo	Anelih-Arju	266037	2	2	1	5	Km
10	Ithun Camp	Anelih-Arju	266038	1	1	1	5	Km
11	Adali	Anini-Mipi	265908	4	4	1	12	Km
12	Jingupu	Anini-Mipi	265911	5	5	1	3	Km
13	Ediya	Anini-Mipi	265915	3	3	1	1	Km
14	Kamuyi	Anini-Mipi	265918	4	4	1	13	Km
15	New Achuli	Anini-Mipi	265927	4	4	1	2	Km
16	Achengo	Anini-Mipi	265937	2	2	1	2	Km
17	Maley	Anini-Mipi	265938	1	1	1	3	Km
18	Apunli	Etalini-Maliniy	265978	2	2	1	30	Km
19	Aningo	Etalini-Maliniy	265980	1	1	1	25	Km
20	Chanli	Etalini-Maliniy	265985	4	4	1	25	Km
21	Wanli	ANELIH-ARJU	266019	11	13	5	10	Km
22	Ahungo	ANINI-MIPI	265913	7	7	2	17	Km
23	Eyongo	ANINI-MIPI	265953	8	8	2	5	Km
24	Ebamee	ANINI-MIPI	265939	10	12	5	2	Km
25	Agagu	ANINI-MIPI	265925	15	17	6	2	Km
26	Alney (Aloney)	ETALIN-MALINEY	265981	4	4	1	5	Km
27	New Arope(Hipui)	ETALIN-MALINEY	265998	16	18	6	8	Km
	Total :			147	156	52		

4. District : East Kameng

Sl. No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Porposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	9
1	Welling Tawe	Bameng	262074	3	3	1	10 Km
2	Prait	Bameng	262081	5	5	1	12 Km
3	Mara Tassar Sullung	Chyang-Tajo	262242	3	3	1	11 Km
4	Kowa Sullung	Chyang-Tajo	262254	3	3	1	15 Km
5	Diya Sullung	Chyang-Tajo	262266	4	4	1	16 Km
6	Mebuwa - I	Seppa	262046	2	2	1	11 Km
7	Ladu Sullung	Pipu	262138	4	4	1	14 Km
8	Dabiwa Cheda	Pipu	262153	3	3	1	12 Km
9	Longik Sullung	Pipu	262156	4	4	1	15 Km
10	Moku Sullong	Pipu	262157	2	2	1	14 Km
11	Sangripu (Tara Sullung)	Pipu	262159	3	3	1	10 Km
12	Debiwa Sollung	Pipu	262162	3	3	1	11 Km
13	Sagya Sullung	Pipu	262166	2	2	1	9 Km
14	Anuk Sollung	Pipu	262176	1	1	1	7 Km
15	A - 1 Block	Seijosa	261901	5	5	1	12 Km
16	Dirring	Seijosa	261911	1	1	1	18 Km
17	Japu	Khenewa	262197	5	5	1	12 Km
18	Babey Camp	BAMENG	262126	6	6	2	6 Km
19	Pipiang	BAMENG	262070	7	7	2	8 Km
20	Laja Sullung	BAMENG	262115	7	7	2	12 Km
21	Dongkha	BAMENG	262075	8	8	2	11 Km
22	Nissangjang	BAMENG	262071	9	9	2	14 Km
23	Kampa - N.V.	BAMENG	262077	9	9	2	9 Km
24	Gikung	BAMENG	262079	9	9	2	6 Km
25	Wabalang	BAMENG	262084	9	9	2	13 Km
26	Pia	BAMENG	262078	13	15	5	10 Km
27	Wakke	BAMENG	262087	13	15	5	6 Km
28	Granjang	BAMENG	262086	10	12	5	9 Km
29	Satuk (Ramda)	BAMENG	262080	11	13	5	8 Km
30	Rojo	BAMENG	262090	15	17	6	10 Km
31	Tamne	Bana	262004	10	12	5	12 Km
32	Lelung	Bana	262013	13	15	5	15 Km
33	Kajung	Bana	261988	14	16	6	9 Km

34	Hojopu	Bana	261994	14	16	6	8 Km
35	Warriam Sullung	CHAYANGTAJO	262270	7	7	2	14 Km
36	Parte	CHAYANGTAJO	262267	8	8	2	16 Km
37	Mechi	CHAYANGTAJO	262260	10	12	5	12 Km
38	Weigung Sullung	CHAYANGTAJO	262249	11	13	5	14 Km
39	Dao	CHAYANGTAJO	262251	12	14	5	5 Km
40	Dara Yangfo	CHAYANGTAJO	262258	12	14	5	40 Km
41	Mechar	CHAYANGTAJO	262259	13	15	5	50 Km
42	Tassar Sullung	CHAYANGTAJO	262241	14	16	6	35 Km
43	Sario	CHAYANGTAJO	262269	15	17	6	30 Km
44	Venia	CHAYANGTAJO	262276	15	17	6	45 Km
45	Wagyung	Khenewa	262187	6	6	2	10 Km
46	Sefew	Khenewa	262201	9	9	2	8 Km
47	Yacho	Khenewa	262186	10	12	5	10 Km
48	Kapa	Khenewa	262206	10	12	5	15 Km
49	Chaling	Khenewa	262205	11	13	5	12 Km
50	Kawarang	Khenewa	262208	12	14	5	14 Km
51	Kampu Seba	PAKKE KESSANG	261981	13	15	5	10 Km
52	Pania Sullung	Pipu	262140	6	6	2	50 Km
53	Meomey Sollung	Pipu	262177	8	8	2	70 Km
54	Longo Gollo	Pipu	262178	8	8	2	25 Km
55	Hisa Plangta	Pipu	262183	8	8	2	35 Km
56	Papiwa Sullung	Pipu	262184	9	9	2	55 Km
57	Lanka	Seijosa	261896	7	7	2	30 Km
58	Dissing Passo HQ	Seijosa	261928	8	8	2	31 Km
59	New Dissing	Seijosa	261919	11	13	5	32 Km
60	Sangdu	Seijosa	261925	12	14	5	10 Km
61	Lasum Pathe	Seijosa	261926	12	14	5	2 Km
62	New Lasum Pathe	Seijosa	261927	12	14	5	5 Km
63	Kampu	SEPPA	262065	7	7	2	5 Km
64	Mebuwa - II	SEPPA	262047	8	8	2	6 Km
65	Dari	SEPPA	262029	9	9	2	4 Km
66	Mebuwa - III	SEPPA	262048	11	13	5	8 Km
67	Gidi Sullung	Bameng	262114	16	18	6	Km
68	Taffo	Bameng	262123	17	19	6	Km
69	Lengdi/Liang	Bameng	262116	18	20	7	Km
70	Nabalang	Bameng	262085	19	21	7	Km
71	Emboriang	Bameng	262112	19	22	8	Km
72	Sallang	Bameng	262083	20	22	7	Km
73	Kojo	Bameng	262089	20	22	7	Km

74	Bisai	Bameng	262069	21	23	7	Km
75	Sachung	Bameng	262072	21	24	8	Km
76	Upper Liyak Doncha	Bameng	262125	22	24	8	Km
77	Drakshi	Bameng	262088	30	32	10	Km
78	Upper Liyak Donia	Bameng	262124	30	33	11	Km
79	Poube Sullung	Bameng	262127	33	36	11	Km
80	Effa	Bameng	262113	34	37	12	Km
81	Rapung	Bameng	262093	39	41	12	Km
82	Lada H.Q.	Bameng	262082	48	51	15	Km
83	Tawe	Bameng	262073	60	62	17	Km
84	Lower Liyak	Bameng	262094	63	66	19	Km
85	Afaksung	Bana	261997	19	21	7	Km
86	New Longte Poube	Bana	262014	20	22	7	Km
87	Kadeya Kitchang	Bana	261991	34	37	12	Km
88	Byale Sullung	Chayangtajo	262248	19	21	7	Km
89	Langchu Sullung	Chayangtajo	262252	19	21	7	Km
90	Nampe Bagang	Chayangtajo	262273	22	24	8	Km
91	Loto Yangfo	Chayangtajo	262255	26	28	9	Km
92	Yakli Sullung	Chayangtajo	262277	26	28	9	Km
93	Saliwa Yangfo	Chayangtajo	262217	31	33	10	Km
94	Nampe	Chayangtajo	262265	31	33	10	Km
95	Saria Takhang	Chayangtajo	262271	36	38	11	Km
96	Veo	Chayangtajo	262275	40	42	12	Km
97	Lamnio	Chayangtajo	262257	69	72	20	Km
98	Langri I.A.Y.Village	Khenewa	262196	16	18	6	Km
99	Latum I.A.Y.Village (Sangbia)	Khenewa	262189	52	54	15	Km
100	Pajewa	Pakke Kessang	261968	16	18	6	Km
101	Laluwapa	Pakke Kessang	261967	20	22	7	Km
102	Balipota	Pakke Kessang	261970	35	37	11	Km
103	Talomlati	Pipu	262180	20	22	7	Km
104	Lasak Cheda	Pipu	262158	23	26	9	Km
105	Tadowapa	Pipu	262146	24	26	8	Km
106	Miri Sollung	Pipu	262175	24	26	8	Km
107	Lochung	Pipu	262143	25	27	8	Km
108	Gyawe Purang Hq.	Pipu	262181	27	29	9	Km
109	Dokre Gyadi	Pipu	262174	31	33	10	Km
110	Tabri	Pipu	262144	40	42	12	Km
111	Flago	Pipu	262139	52	54	15	Km
112	Richi Lamgu	Pipu	262182	56	58	16	Km
113	Tagang Warang	Pipu	262179	61	64	18	Km
114	Doka	Pipu	262137	73	75	20	Km

115	Bokar	Pipu	262142	78	80	22	Km
116	Hamba – Pinda	SEPPA	262039	64	67	19	Km
	Total :			2213	2379	735	

5. District : East Siang

Sl.No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Lissing	Pangin	263785	13	14	4	13 Km
2	Sipo(Hipo)	RAMLE BANGO	263827	4	4	1	18 Km
3	Jate	RAMLE BANGO	263828	7	7	2	15 Km
4	Messing	Pangin	263786	16	18	6	Km
	Total :			40	43	13	

6. District : Kurung Kumey

Sl. No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Baggam (Baojam)	Pipsorang	265842	31	33	10	50 Km

2	Biya	Pipsorang	265856	28	30	9	38 Km
3	Chome	Pipsorang	265861	10	12	5	56 Km
4	Gatam	Pipsorang	265857	5	6	2	35 Km
5	Gyapin	Pipsorang	265840	80	82	22	54 Km
6	Ha	Pipsorang	265846	58	61	18	42 Km
7	Habak	Pipsorang	265858	7	8	3	40 Km
8	Haimachi	Pipsorang	265839	17	19	6	59 Km
9	Haina	Pipsorang	265847	30	33	11	40 Km
10	Hapuk (L)	Pipsorang	265855	11	13	5	40 Km
11	Kaba	Pipsorang	265849	38	40	12	39 Km
12	Keyang	Pipsorang	265863	28	30	9	50 Km
13	Kokso	Pipsorang	265862	7	8	3	42 Km
14	Nabiya	Pipsorang	265843	71	73	20	34 Km
15	Nayeng	Pipsorang	265845	42	44	13	47 Km
16	Neorum	Pipsorang	265836	11	13	5	56 Km
17	New Zara	Pipsorang	265864	34	36	11	38 Km
18	Nikbia	Pipsorang	265859	20	22	7	70 Km
19	Nyache	Pipsorang	265853	48	50	14	37 Km
20	Pija	Pipsorang	265854	16	18	6	35 Km
21	Pilua	Pipsorang	265850	37	39	11	42 Km
22	Raha	Pipsorang	265860	34	36	11	52 Km
23	Richik	Pipsorang	265851	6	7	3	32 Km
24	Samba Karsang	Pipsorang	265832	38	40	12	54 Km
25	Sangia	Pipsorang	265852	45	47	13	33 Km
26	Tami	Pipsorang	265848	34	36	11	39 Km
27	Zara	Pipsorang	265844	40	43	13	40 Km
28	Giba	TALI	265903	35	37	11	41 Km
29	Guchi	TALI	265880	63	67	20	39 Km
30	Hokpu	TALI	265879	24	26	8	37 Km
31	Panio	TALI	265875	32	34	10	54 Km
32	Sojam	TALI	265881	19	21	7	35 Km
33	Nyoya	Chambang	265525	3	3	1	27 Km
34	Hatey	Chambang	265526	4	4	1	15 Km
35	Korayer-I	Chambang	265528	1	1	1	12 Km
36	Korayer-II	Chambang	265529	1	1	1	12 Km
37	Bongkung	Chambang	265547	5	5	1	15 Km
38	Pitak	Chambang	265548	5	5	1	13 Km
39	Sonia	Chambang	265558	2	2	1	32 Km
40	Boring	Chambang	265572	5	5	1	27 Km
41	Lomak Hapa	Chambang	265575	5	5	1	38 Km
42	Dayam Hapa	Chambang	265585	5	5	1	28 Km
43	Banga Kotho	Chambang	265589	3	3	1	24 Km

44	Genchi	Chambang	265598	2	2	1	26 Km
45	Hepu-Hapa	Chambang	265641	4	4	1	30 Km
46	Kott-Ratt	Chambang	265672	3	3	1	48 Km
47	Namniar	Damin	265813	5	5	1	55 Km
48	Manghe II	Koloriag	265436	4	4	1	21 Km
49	Deyang	Koloriag	265466	5	5	1	12 Km
50	Buhan	Koloriag	265467	3	3	1	12 Km
51	Tamia	Koloriag	265475	4	4	1	17 Km
52	Chimpu	Koloriag	265478	4	4	1	24 Km
53	Torme Yarda	Nyapin	265356	4	4	1	15 Km
54	Lower Guha	Nyapin	265367	1	1	1	5 Km
55	Lower Lorio	Nyapin	265369	2	2	1	8 Km
56	Humga Jariang	Nyapin	265380	1	1	1	21 Km
57	Suriu	Nyapin	265386	4	4	1	12 Km
58	Guha	Nyapin	265394	3	3	1	8 Km
59	Pinchung	Nyapin	265399	3	3	1	10 Km
60	Youndo	Nyapin	265406	3	3	1	16 Km
61	Saleriang(Sulung)	Nyapin	265411	5	5	1	13 Km
62	Sikey	Nyapin	265419	4	4	1	17 Km
63	Bumpey	Palin	265188	5	5	1	7 Km
64	Serak	Palin	265224	4	4	1	9 Km
65	Jejer	Palin	265263	5	5	1	7 Km
66	Demepup	Sangram	265294	5	5	1	13 Km
67	Miba	Sangram	265347	5	5	1	12 Km
68	Sonyokoto	CHAMBANG	265502	6	6	2	12 Km
69	Bodepu	CHAMBANG	265514	6	6	2	14 Km
70	Sangha	CHAMBANG	265519	6	6	2	18 Km
71	Lungchi	CHAMBANG	265546	10	12	5	32 Km
72	Tapaha	CHAMBANG	265556	6	6	2	25 Km
73	Raibalo II	CHAMBANG	265578	6	6	2	42 Km
74	Yangte II	CHAMBANG	265624	6	6	2	32 Km
75	Mebia	CHAMBANG	265625	6	6	2	23 Km
76	Mipum-Namching	CHAMBANG	265629	6	6	2	24 Km
77	Tapa-Poring	CHAMBANG	265633	6	6	2	36 Km
78	Gangte (Gente)	CHAMBANG	265648	6	7	3	41 Km
79	Charbia	CHAMBANG	265649	6	6	2	32 Km
80	Takeng	CHAMBANG	265531	7	7	2	23 Km
81	Piriayer	CHAMBANG	265552	7	7	2	16 Km
82	Nama	CHAMBANG	265640	7	7	2	28 Km
83	Tatung-Koter	CHAMBANG	265561	8	8	2	23 Km
84	Tarha	CHAMBANG	265563	8	8	2	19 Km
85	Hidung Songo	CHAMBANG	265564	8	8	2	21 Km

86	Tabum	CHAMBANG	265567	8	8	2	25 Km
87	Pakung	CHAMBANG	265593	8	8	2	15 Km
88	Tabyer	CHAMBANG	265621	8	8	2	7 Km
89	Chimpigi	CHAMBANG	265628	8	8	2	27 Km
90	Tapaha	CHAMBANG	265542	9	9	2	12 Km
91	Ballo I	CHAMBANG	265580	9	9	2	38 Km
92	Tamak poring	CHAMBANG	265591	9	9	2	14 Km
93	Tumhaming	CHAMBANG	265594	9	9	2	12 Km
94	Raiga II	CHAMBANG	265597	9	9	2	22 Km
95	Mencha	CHAMBANG	265600	9	9	2	18 Km
96	Gongbing	CHAMBANG	265601	9	9	2	23 Km
97	Gai IV	CHAMBANG	265617	9	9	2	32 Km
98	Taliyer	CHAMBANG	265618	9	9	2	34 Km
99	Phoi	CHAMBANG	265622	9	9	2	9 Km
100	Harak	CHAMBANG	265632	9	9	2	32 Km
101	Lolcee	CHAMBANG	265646	9	9	2	12 Km
102	Raseng Hapa	CHAMBANG	265503	10	12	5	17 Km
103	Sanglo Putung	CHAMBANG	265511	10	12	5	12 Km
104	Payer	CHAMBANG	265533	10	12	5	26 Km
105	Kamrung-III	CHAMBANG	265574	10	13	6	32 Km
106	Lungchi	CHAMBANG	265595	10	12	5	9 Km
107	Taya Rimpa	CHAMBANG	265599	10	12	5	12 Km
108	Sango II	CHAMBANG	265607	10	12	5	26 Km
109	Bump-Hapa	CHAMBANG	265631	10	13	6	28 Km
110	Sangching Nyoriang	CHAMBANG	265532	11	13	5	24 Km
111	Kamrung II	CHAMBANG	265538	11	14	6	22 Km
112	Yeripu	CHAMBANG	265540	11	13	5	27 Km
113	Poksa	CHAMBANG	265557	11	13	5	26 Km
114	Haming	CHAMBANG	265559	11	13	5	32 Km
115	Pikte	CHAMBANG	265634	11	13	5	38 Km
116	Delinge	CHAMBANG	265638	11	13	5	26 Km
117	Delling	CHAMBANG	265517	12	14	5	12 Km
118	Harak II	CHAMBANG	265545	12	14	5	28 Km
119	Higio II	CHAMBANG	265569	12	14	5	34 Km
120	Rai II	CHAMBANG	265603	12	14	5	32 Km
121	Tagiaraha	CHAMBANG	265612	12	14	5	20 Km
122	Lengdi I	CHAMBANG	265619	12	14	5	32 Km
123	Tudh-Bath III	CHAMBANG	265509	13	15	5	14 Km
124	Tangtanpuring	CHAMBANG	265516	13	15	5	17 Km
125	Tungte	CHAMBANG	265565	13	15	5	26 Km
126	Pukpe	CHAMBANG	265583	13	15	5	36 Km
127	Boa II	CHAMBANG	265609	13	15	5	39 Km

128	Bindo	CHAMBANG	265620	13	15	5	42 Km
129	Nyomi	CHAMBANG	265523	14	16	6	35 Km
130	Gangte II	CHAMBANG	265587	14	17	7	34 Km
131	Amprakpak	CHAMBANG	265605	14	16	6	35 Km
132	Phacha	CHAMBANG	265610	14	16	6	37 Km
133	Taniyatab	CHAMBANG	265635	14	16	6	39 Km
134	Padap	CHAMBANG	265513	15	18	7	7 Km
135	Dorduk (T-Tab)	CHAMBANG	265636	15	17	6	28 Km
136	Restaring	CHAMBANG	265650	15	17	6	20 Km
137	Gachi	CHAMBANG	265652	15	17	6	12 Km
138	Kish	NYAPIN	265368	6	6	2	1 Km
139	Taya	NYAPIN	265393	6	6	2	8 Km
140	Langria	NYAPIN	265400	6	6	2	11 Km
141	Rayer Solung	NYAPIN	265424	6	6	2	8 Km
142	Rluguha	NYAPIN	265407	7	7	2	2 Km
143	Pinchi Solung	NYAPIN	265422	7	7	2	5 Km
144	Langdo	NYAPIN	265359	8	8	2	2 Km
145	Yorung	NYAPIN	265415	8	8	2	9 Km
146	Pach	NYAPIN	265361	9	9	2	8 Km
147	Sangripo	NYAPIN	265398	9	9	2	12 Km
148	Ralung	NYAPIN	265425	11	13	5	4 Km
149	Kaberiang	NYAPIN	265358	14	16	6	10 Km
150	Taris	NYAPIN	265417	14	16	6	12 Km
151	Tapone	KOLORIANG	265455	6	6	2	10 Km
152	Puriok	KOLORIANG	265497	6	6	2	2 Km
153	Kiodhriang	KOLORIANG	265473	7	7	2	30 Km
154	Nyobia	KOLORIANG	265465	8	9	3	35 Km
155	Degging II	KOLORIANG	265483	8	8	2	10 Km
156	Chinkongne Village	KOLORIANG	265454	9	9	2	10 Km
157	Ratell	KOLORIANG	265487	9	9	2	10 Km
158	Sulungyar	KOLORIANG	265456	11	13	5	26 Km
159	Pinging	KOLORIANG	265461	11	13	5	6 Km
160	Johat	KOLORIANG	265468	11	13	5	30 Km
161	Radang	KOLORIANG	265460	12	15	6	8 Km
162	Jiri	KOLORIANG	265493	12	14	5	6 Km
163	Kokpu Nyoyer	KOLORIANG	265471	13	15	5	36 Km
164	Naji Bibok	KOLORIANG	265472	14	16	6	30 Km
165	Tate	KOLORIANG	265488	15	17	6	3 Km
166	Barta Camp	PALIN	265270	6	6	2	12 Km
167	Tagia	PALIN	265279	6	6	2	12 Km
168	Pajja	PALIN	265204	7	7	2	8 Km
169	Hinggo Happa	PALIN	265221	8	8	2	5 Km

170	Nidey Happa	PALIN	265273	8	8	2	11 Km
171	Rukso	PALIN	265186	9	9	2	14 Km
172	Kayekh	PALIN	265173	10	12	5	15 Km
173	Karko	PALIN	265179	10	12	5	16 Km
174	Koyer- Kamcho	PALIN	265213	10	12	5	6 Km
175	Geyo	PALIN	265214	10	12	5	5 Km
176	Hina	PALIN	265253	10	12	5	10 Km
177	Gyate	PALIN	265196	11	13	5	6 Km
178	Tamak	PALIN	265209	11	13	5	14 Km
179	Gopo	PALIN	265215	11	13	5	3 Km
180	Pungmi	PALIN	265226	12	14	5	7 Km
181	Bugdu	PALIN	265193	13	16	6	16 Km
182	Yerlo	PALIN	265219	13	15	5	4 Km
183	Tegdo	PALIN	265222	13	15	5	7 Km
184	Dumbu	PALIN	265187	14	16	6	8 Km
185	Gyachi	PALIN	265260	15	18	7	17 Km
186	Nisuk	DAMIN	265820	6	6	2	80 Km
187	Nayopuk	DAMIN	265810	7	7	2	65 Km
188	Yaso	DAMIN	265784	8	8	2	65 Km
189	Katuk	DAMIN	265805	8	8	2	80 Km
190	Chera	DAMIN	265812	9	9	2	50 Km
191	Sibia	DAMIN	265795	10	12	5	50 Km
192	Tikla	DAMIN	265797	10	12	5	50 Km
193	Pipa	DAMIN	265801	10	12	5	40 Km
194	Boruk	DAMIN	265781	12	14	5	50 Km
195	Chedam	DAMIN	265829	13	15	5	85 Km
196	Hirik	DAMIN	265821	12	14	5	90 Km
197	Hume	DAMIN	265828	10	12	5	55 Km
198	Kelong	DAMIN	265824	23	25	8	75 Km
199	Ruba	DAMIN	265807	45	47	13	60 Km
200	Terik	DAMIN	265803	12	14	5	70 Km
201	Subuk	DAMIN	265822	12	14	5	58 Km
202	Sara	Sangram	265295	8	8	2	10 Km
203	Kampong	Sangram	265332	8	8	2	5 Km
204	Tagum	Sangram	265308	9	9	2	3 Km
205	Kamha Hapa	Sangram	265322	10	12	5	4 Km
206	Rallang	Sangram	265317	13	15	5	10 Km
207	Kaglang	Sangram	265283	14	16	6	12 Km
208	Pirsepa	Sangram	265309	14	16	6	9 Km
209	Ningpopu	Sangram	265325	15	17	6	8 Km
210	Paching	Sangram	265326	15	17	6	10 Km
211	Nyori	Sangram	265327	15	17	6	10 Km

212	Tahuk	Parsi Parlo	265775	9	9	2	5 Km
213	Bigo	Parsi Parlo	265725	13	15	5	5 Km
214	Barbia	Parsi Parlo	265744	13	15	5	10 Km
215	Passik	Parsi Parlo	265753	14	16	6	6 Km
216	Solung	Parsi Parlo	265729	15	17	6	40 Km
217	Lamia	Parsi Parlo	265770	13	17	7	30 Km
218	Marmia	Parsi Parlo	265736	13	17	7	20 Km
219	Nyokuriang	Parsi Parlo	265743	32	36	12	18 Km
220	Raba Karsang	Pipsorang	265833	19	21	7	50 Km
221	Tedung	Pipsorang	265831	39	43	14	45 Km
222	Sepaha	Pipsorang	265834	56	60	18	48 Km
223	Korapu	Pipsorang	265837	62	66	20	42 Km
224	Koleng	Pipsorang	265835	65	69	20	38 Km
225	Longding Koling HQ	Pipsorang	265830	157	161	43	80 Km
226	New Sarli	SARLI	265681	7	7	2	2 Km
227	Kaney	SARLI	265694	10	14	7	20 Km
228	Lentso	SARLI	265692	4	6	3	15 Km
229	Bala	SARLI	265704	3	5	3	20 Km
230	Techipu Koto	Chambang	265570	16	19	7	Km
231	Raibalo III	Chambang	265579	16	19	7	Km
232	Pha	Chambang	265584	16	18	6	Km
233	Mugli	Chambang	265604	16	18	6	Km
234	Tayo	Chambang	265642	16	18	6	Km
235	Korapu	Chambang	265669	16	18	6	Km
236	Kembing	Chambang	265630	17	19	6	Km
237	Paha	Chambang	265520	18	20	7	Km
238	Gad	Chambang	265576	18	20	7	Km
239	Ballo II	Chambang	265581	18	20	7	Km
240	Pitak	Chambang	265614	19	21	7	Km
241	Boje	Chambang	265655	19	21	7	Km
242	Kote	Chambang	265553	20	22	7	Km
243	Bungkung	Chambang	265615	21	23	7	Km
244	Puch-Pute	Chambang	265653	21	23	7	Km
245	Rembing	Chambang	265627	22	24	8	Km
246	Cvuth	Chambang	265644	23	25	8	Km
247	Tokriang	Damin	265778	20	22	7	Km
248	Galan	Damin	265817	22	24	8	Km
249	Putong	Damin	265779	23	25	8	Km
250	Omla	Damin	265789	24	26	8	Km
251	Dania	Damin	265827	24	26	8	Km
252	Peni	Damin	265791	28	30	9	Km
253	Dogwa	Damin	265819	31	33	10	Km

254	Sejik	Damin	265799	36	38	11	Km
255	Furek	Koloriang	265495	16	18	6	Km
256	Jugriang	Nyapin	265410	19	21	7	Km
257	Raris	Nyapin	265413	20	23	8	Km
258	Gufa	Nyapin	265416	20	22	7	Km
259	Hill Top	Nyapin	265354	21	23	7	Km
260	Mingpa	Nyapin	265357	21	23	7	Km
261	Dilanggang	Nyapin	265373	21	23	7	Km
262	Pate	Nyapin	265421	21	23	7	Km
263	Diba Koyar	Nyapin	265423	21	23	7	Km
264	Kudung	Palin	265176	16	18	6	Km
265	Jiirilangney	Palin	265189	16	18	6	Km
266	Kusuk	Palin	265203	16	18	6	Km
267	Malaring	Palin	265272	16	18	6	Km
268	Papey	Palin	265178	17	19	6	Km
269	Tapey	Palin	265192	17	19	6	Km
270	Kikum	Palin	265249	17	19	6	Km
271	Sanglum Langi	Palin	265255	18	20	7	Km
272	Yapap Bogu	Palin	265238	19	21	7	Km
273	Khawong	Palin	265200	20	22	7	Km
274	Tabu	Palin	265240	20	22	7	Km
275	Hujuriang	Palin	265244	22	24	8	Km
276	Langtey	Palin	265231	23	25	8	Km
277	Pijo	Palin	265241	23	25	8	Km
278	Robo	Palin	265194	26	28	9	Km
279	Dokio Pep	Palin	265250	29	31	9	Km
280	Riope-Riome	Palin	265197	31	33	10	Km
281	Cheba	Parsi Parlo	265748	16	18	6	Km
282	Rashik I	Parsi Parlo	265742	17	19	6	Km
283	Kelin	Parsi Parlo	265757	19	21	7	Km
284	Bampung Hema	Parsi Parlo	265722	20	22	7	Km
285	Mangdo-I	Parsi Parlo	265715	22	24	8	Km
286	Tasum	Parsi Parlo	265713	23	25	8	Km
287	Lumdang	Parsi Parlo	265734	23	25	8	Km
288	Made	Parsi Parlo	265749	23	25	8	Km
289	Joku	Parsi Parlo	265759	23	25	8	Km
290	Pachik	Parsi Parlo	265772	23	25	8	Km
291	Renchiporiang -I	Parsi Parlo	265720	24	26	8	Km
292	Yarba-I	Parsi Parlo	265731	24	26	8	Km
293	Pado I	Parsi Parlo	265733	24	26	8	Km
294	Pilop	Parsi Parlo	265751	24	26	8	Km
295	Pape	Parsi Parlo	265765	24	26	8	Km

296	Topuriang	Parsi Parlo	265767	24	26	8	Km
297	Yerba	Parsi Parlo	265730	29	31	9	Km
298	Pachang	Parsi Parlo	265762	31	33	10	Km
299	Geyang	Parsi Parlo	265774	31	33	10	Km
300	Mala	Parsi Parlo	265771	33	35	10	Km
301	Libia	Parsi Parlo	265717	48	50	14	Km
302	Molo	Parsi Parlo	265724	48	50	14	Km
303	Dangu	Sangram	265287	16	18	6	Km
304	Regba	Sangram	265333	18	20	7	Km
305	Niayahutung	Sangram	265310	19	21	7	Km
306	Haggar	Sangram	265285	20	22	7	Km
307	Sangmey	Sangram	265297	25	27	8	Km
308	Kerium Hapa	Sangram	265320	29	31	9	Km
309	Reyup	Sangram	265282	32	34	10	Km
310	Biyar	Tali	265885	16	18	6	Km
311	Cholo	Tali	265886	19	21	7	Km
312	Jhapuk	Tali	265892	19	21	7	Km
313	Hokpuk	Tali	265883	51	53	15	Km
	Total :			5049	5505	1760	

7. District : Lohit

Sl.No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Labeliang	TEZU	266406	8	8	2	8 Km
2	Chiblaliang	Tezu	266408	23	25	8	Km
	Total :			31	33	10	

8. District : Lower Dibang Valley

Sl. No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Chepahu (52 K.M. Point)	Hunli-Kronli	266075	3	3	1	13 Km
2	Epanli	Hunli-Kronli	266065	14	15	5	10 Km

3	Karo	Hunli-Kronli	266117	5	5	1	16 Km
4	Rango	Hunli-Kronli	266055	2	2	1	13 Km
5	Gimbo (28 K.M. Point)	Roing	266142	20	22	7	20 Km
6	Elope	Hunli-Kronli	266054	2	2	1	9 Km
7	Asongo	Hunli-Kronli	266057	3	3	1	15 Km
8	Aphungu	Hunli-Kronli	266066	3	3	1	7 Km
9	Akuli	Hunli-Kronli	266070	5	5	1	9 Km
10	Chelaka (82 K.M.)	Hunli-Kronli	266072	4	4	1	1 Km
11	Akanda	Hunli-Kronli	266092	4	4	1	26 Km
12	Bititi	Hunli-Kronli	266104	5	5	1	15 Km
13	Chumduku	Hunli-Kronli	266105	3	3	1	31 Km
14	Chruango	Hunli-Kronli	266110	3	3	1	12 Km
15	Pi-Kha	Hunli-Kronli	266116	2	2	1	24 Km
16	Necha	Hunli-Kronli	266120	3	3	1	43 Km
17	Arini	Hunli-Kronli	266121	5	5	1	25 Km
18	Theyapra	Hunli-Kronli	266128	2	2	1	16 Km
19	Pika	Hunli-Kronli	266129	2	2	1	18 Km
20	Mariso	Hunli-Kronli	266132	5	5	1	25 Km
21	Mariso	Hunli-Kronli	266133	5	5	1	3 Km
22	Lupong	Roing	266168	4	4	1	2 Km
23	Natipi	Roing	266270	5	5	1	3 Km
24	Chela	Roing	266271	5	5	1	4 Km
25	Akela	Roing	266272	3	3	1	5 Km
26	Ithini	Roing	266348	1	1	1	2 Km
27	Cheyada	Hunli-Kronli	266097	6	6	2	5 Km
28	Ashini	Hunli-Kronli	266108	7	7	2	7 Km
29	Maruni	Hunli-Kronli	266109	7	7	2	1 Km
30	Enjani	Hunli-Kronli	266111	7	7	2	3 Km
31	Yuma (7 KM)	Hunli-Kronli	266052	8	8	2	1 Km
32	Arono	Hunli-Kronli	266058	8	8	2	2 Km
33	Anoro	Hunli-Kronli	266064	8	8	2	2 Km
34	Amonggo	Hunli-Kronli	266102	8	8	2	5 Km
35	Gango	Hunli-Kronli	266107	8	8	2	1 Km
36	Mihundo	Hunli-Kronli	266130	8	9	3	1 Km
37	New Pika	Hunli-Kronli	266139	8	8	2	2 Km
38	Androni (73 K.M.)	Hunli-Kronli	266073	9	9	2	0.20 Km
39	Michido	Hunli-Kronli	266119	9	9	2	1 Km
40	Pengo	Hunli-Kronli	266124	9	9	2	2 Km
41	Yanli	Hunli-Kronli	266089	11	13	5	0.50 Km
42	Chuyuni Model village	Hunli-Kronli	266115	12	14	5	0.50 Km
43	Boongo (65 KM)	Hunli-Kronli	266074	27	29	9	0.50 Km
44	Kapali	Roing	266346	8	8	2	0.50 Km

45	Thuango	Roing	266347	12	14	5	1.00 Km
46	Lemo	Roing	266282	14	16	6	1.00 Km
47	Ithun	Roing	266286	14	16	6	1.00 Km
48	Alambro	Roing	266172	15	17	6	0.50 Km
49	Elopa	Roing	266267	15	17	6	0.50 Km
50	Miuliati	Roing	266279	15	17	6	0.50 Km
	Total :			371	393	121	

9. District : Lower Subansiri

Sl. No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Biku	Tamen-Raga	265118	16	17	5	6 Km
2	Bini	Tamen-Raga	265119	24	26	8	8 Km
3	Bokbarijop (Kina)	Tamen-Raga	265117	11	12	4	5 Km
4	Chirdi	Tamen-Raga	265116	20	22	7	6 Km
5	Dokne Puri	Tamen-Raga	265145	7	7	2	8 Km
6	Gote	Tamen-Raga	265122	5	5	1	21 Km
7	Jal	Tamen-Raga	265155	15	16	5	25 Km
8	Karba Godak	Tamen-Raga	265148	10	11	4	1 Km
9	Lelin	Tamen-Raga	265121	12	13	4	40 Km
10	Luduk Godak	Tamen-Raga	265150	25	27	8	1 Km
11	Moinpu	Tamen-Raga	265165	13	14	4	13 Km
12	Pega	Tamen-Raga	265157	9	10	3	23 Km
13	Rilki	Tamen-Raga	265123	4	4	1	38 Km
14	Rottom	Tamen-Raga	265120	50	52	15	7 Km
15	Tass	Tamen-Raga	265166	8	8	2	13 Km
16	Tepko	Tamen-Raga	265156	11	12	4	24 Km
17	Teririyo	Tamen-Raga	265115	41	43	12	4 Km
18	Yare Shok	Tamen-Raga	265143	6	6	2	1 Km
19	Yemin Deru	Tamen-Raga	265142	11	12	4	6 Km

20	Digen	ZIRO - I	264651	2	2	1	12 Km
21	Kiidi	ZIRO - I	264705	5	5	1	28 Km
22	Layo	ZIRO - I	264622	4	4	1	15 Km
23	Pakhang Toku	ZIRO - I	264735	1	1	1	20 Km
24	Pobii	ZIRO - I	264704	2	2	1	12 Km
25	Pusa Yoda	ZIRO - I	264657	1	1	1	18 Km
26	Talle Valley	ZIRO - I	264642	2	2	1	30 Km
27	Taro More	ZIRO - I	264643	1	1	1	28 Km
28	Zamra	ZIRO - I	264645	1	1	1	58 Km
29	Amperi	Tamen-Raga	265033	4	4	1	10 Km
30	Subnar	Tamen-Raga	265035	2	2	1	1 Km
31	Bugi	Tamen-Raga	265039	4	4	1	1 Km
32	Bomri Hapa	Tamen-Raga	265040	5	5	1	5 Km
33	Katri	Tamen-Raga	265044	3	3	1	2 Km
34	Dirgo	Tamen-Raga	265046	4	4	1	2 Km
35	Ayi Poot Rejo	Tamen-Raga	265048	2	2	1	5 Km
36	Dabi Hapa	Tamen-Raga	265053	3	3	1	4 Km
37	Langding	Tamen-Raga	265072	3	3	1	5 Km
38	Hatak Putu	Tamen-Raga	265074	4	4	1	6 Km
39	Dansok	Tamen-Raga	265086	2	2	1	5 Km
40	Tache Tale	Tamen-Raga	265092	5	5	1	2 Km
41	Ajo Phab	Tamen-Raga	265102	3	3	1	6 Km
42	Laa II	Tamen-Raga	265106	1	1	1	20 Km
43	Kemyir	Tamen-Raga	265139	4	4	1	2 Km
44	Heba Kabak	Tamen-Raga	265163	5	5	1	11 Km
45	Tiiba	Ziro-I	264594	5	6	2	1 Km
46	Tarin Agya	Ziro-I	264595	5	5	1	1 Km
47	Bamin Michi Tawitbe	Ziro-I	264596	1	1	1	2 Km
48	Taring (Hong)	Ziro-I	264599	1	1	1	1 Km
49	Haley	Ziro-I	264602	2	2	1	1 Km
50	Lodderkonti	Ziro-I	264603	1	1	1	1 Km
51	Gyahi	Ziro-I	264604	3	3	1	2 Km
52	Lower Dilo	Ziro-I	264607	5	5	1	1 Km
53	Siting Boh	Ziro-I	264608	1	1	1	2 Km
54	Sichobo	Ziro-I	264609	2	2	1	2 Km

55	Belongbo	Ziro-l	264612	1	1	1	2 Km
56	Cholo Agya	Ziro-l	264613	2	2	1	3 Km
57	Taru	Ziro-l	264620	3	3	1	1 Km
58	Bhu	Ziro-l	264621	1	1	1	1 Km
59	Rabii	Ziro-l	264626	1	1	1	5 Km
60	Saliyoga	Ziro-l	264628	3	3	1	1 Km
61	Dilo Yao	Ziro-l	264630	2	2	1	2 Km
62	Paking Pabu	Ziro-l	264631	1	1	1	2 Km
63	Boi	Ziro-l	264632	1	1	1	2.00 Km
64	Tukung	Ziro-l	264633	2	2	1	1.00 Km
65	Lodder	Ziro-l	264634	1	1	1	1.00 Km
66	Tadu	Ziro-l	264635	1	1	1	1.00 Km
67	Lodder l	Ziro-l	264636	2	2	1	1.00 Km
68	Yo Daboi	Ziro-l	264637	1	1	1	1.50 Km
69	Sugyu Pabu	Ziro-l	264641	2	2	1	1.00 Km
70	Dolu Poba	Ziro-l	264647	2	2	1	1.50 Km
71	Lentha Pabu	Ziro-l	264648	3	3	1	1.50 Km
72	Khemeliyang	Ziro-l	264650	2	2	1	2.00 Km
73	Tayuko	Ziro-l	264652	3	3	1	3.00 Km
74	Hakap	Ziro-l	264653	5	5	1	3.00 Km
75	Sangepo	Ziro-l	264656	4	4	1	1.00 Km
76	Namiligo	Ziro-l	264659	2	2	1	1.00 Km
77	Ukobije	Ziro-l	264660	1	1	1	1.00 Km
78	Rantii	Ziro-l	264661	2	2	1	1.00 Km
79	Pokheakamg	Ziro-l	264666	3	3	1	3.00 Km
80	Yolyo	Ziro-l	264667	1	1	1	1.00 Km
81	Tero Ago	Ziro-l	264669	2	3	2	1.00 Km
82	Siri Dipii	Ziro-l	264670	1	1	1	1.00 Km
83	Taru Kelyang	Ziro-l	264671	1	1	1	1.50 Km
84	Rubu	Ziro-l	264672	5	5	1	1.50 Km
85	Poralya	Ziro-l	264673	3	3	1	1.00 Km
86	Ukopo	Ziro-l	264675	5	5	1	1.00 Km
87	Pepungko	Ziro-l	264678	1	1	1	2.00 Km
88	Nanu	Ziro-l	264681	3	3	1	2.50 Km
89	Pai Achang	Ziro-l	264685	3	4	2	2.00 Km

90	Gano	Ziro-I	264689	5	5	1	1.00 Km
91	Miding Passu	Ziro-I	264691	2	2	1	1.00 Km
92	Bokan II	Ziro-I	264692	1	1	1	1.00 Km
93	Tiibeko	Ziro-I	264701	3	3	1	3.00 Km
94	Tariko	Ziro-I	264703	1	1	1	4.00 Km
95	Akhoebyo	Ziro-I	264715	5	5	1	1.00 Km
96	Yadi	Ziro-I	264721	1	1	1	1.00 Km
97	Siringpakho	Ziro-I	264722	1	1	1	1.00 Km
98	Amung	Ziro-I	264725	4	4	1	1.00 Km
99	Myoliku	Ziro-I	264729	3	3	1	2.00 Km
100	Kalo	Ziro-I	264730	1	1	1	1.00 Km
101	Nyibo	Ziro-I	264731	2	2	1	2.00 Km
102	To Myobia	Ziro-I	264732	1	1	1	3.00 Km
103	Byore	Ziro-I	264733	1	1	1	1.00 Km
104	Gyabu	Ziro-I	264734	5	5	1	2.00 Km
105	Lenting Layu	Ziro-I	264737	1	1	1	1.00 Km
106	Shi	Ziro-I	264741	1	1	1	1.00 Km
107	Kululemp	Ziro-I	264742	4	4	1	1.50 Km
108	Yashibo	Ziro-I	264751	3	4	2	1.00 Km
109	Siya Piro	Ziro-I	264757	1	1	1	1.00 Km
110	Bubu	Ziro-I	264758	5	5	1	1.00 Km
111	Saro	Ziro-I	264759	2	2	1	1.00 Km
112	Kato	Ziro-I	264760	4	5	2	2.00 Km
113	Riku Lanche	Ziro-I	264761	3	3	1	1.50 Km
114	Tadubho	Ziro-I	264772	5	5	1	1.00 Km
115	Kiile Pakho	Ziro-I	264787	1	1	1	1.00 Km
116	Saro	Ziro-I	264803	5	5	1	1.00 Km
117	Myochi	Ziro-I	264804	5	5	1	2.00 Km
118	Lengo	Ziro-I	264813	5	5	1	1.00 Km
119	Tanyo	Ziro-I	264817	5	5	1	1.00 Km
120	Polu Happa	Ziro-II	264883	1	1	1	2.00 Km
121	Kotu Nampam	Ziro-II	264889	3	3	1	2.00 Km
122	Dee Happa	Ziro-II	264890	5	5	1	1.00 Km
123	Dekh	Ziro-II	264903	5	5	1	1.00 Km
124	Howu Happa	Ziro-II	264905	1	1	1	1.00 Km

125	Paa Yorda	Ziro-II	264907	3	3	1	1.50 Km
126	Moob Happa	Ziro-II	264923	2	2	1	1.00 Km
127	Dora	Ziro-II	265004	4	4	1	1.00 Km
128	Nill Poto	Tamen-Raga	265019	6	6	2	8 Km
129	Tokuso Rijo	Tamen-Raga	265020	6	6	2	3 Km
130	Kunde	Tamen-Raga	265068	6	6	2	2 Km
131	Byan Byap	Tamen-Raga	265078	6	6	2	42 Km
132	Pet-Milli	Tamen-Raga	265128	6	6	2	2 Km
133	Ampar Rakhe	Tamen-Raga	265055	7	7	2	3 Km
134	Jop Hapa	Tamen-Raga	265075	7	7	2	2 Km
135	Mengi Kabak II	Tamen-Raga	265077	7	7	2	5 Km
136	Mid Putu	Tamen-Raga	265081	7	7	2	3 Km
137	Letkamt	Tamen-Raga	265168	7	7	2	2 Km
138	Leya	Tamen-Raga	265028	8	9	3	3 Km
139	Harakso	Tamen-Raga	265050	8	8	2	1 Km
140	Putu	Tamen-Raga	265052	8	8	2	8 Km
141	Gep Yom	Tamen-Raga	265058	8	8	2	1 Km
142	Pompulend	Tamen-Raga	265084	8	8	2	10 Km
143	Boa Model	Tamen-Raga	265103	8	8	2	1 Km
144	Pakh Rijo	Tamen-Raga	265021	9	9	2	4 Km
145	Takek Pada	Tamen-Raga	265065	9	10	3	1 Km
146	Rugya Hapa	Tamen-Raga	265087	9	9	2	3 Km
147	Chudi Yom	Tamen-Raga	265056	10	12	5	3 Km
148	Teblisi	Tamen-Raga	265091	10	13	6	2 Km
149	Paga Hapa	Tamen-Raga	265067	11	13	5	1 Km
150	Palap	Tamen-Raga	265098	11	13	5	2 Km
151	Gumtu	Tamen-Raga	265167	11	13	5	3.50 Km
152	Setha Pury	Tamen-Raga	265064	12	14	5	1 Km
153	Posa	Tamen-Raga	265029	13	15	5	2 Km
154	Daa Hill Top	Tamen-Raga	265063	13	16	6	1 Km
155	Bomtee	Tamen-Raga	265085	13	15	5	3 Km
156	Sey Godak	Tamen-Raga	265149	13	16	6	1 Km
157	Onga	Tamen-Raga	265107	14	16	6	1 Km
158	Loktap	Tamen-Raga	265041	15	17	6	2 Km
159	Pelmilli	Tamen-Raga	265129	15	17	6	1 Km

160	Sihing	ZIRO - I	264658	6	6	2	1.50 Km
161	Tabung Byarang	ZIRO - I	264702	6	6	2	1.50 Km
162	Sisang	ZIRO - I	264727	6	6	2	1.50 Km
163	Yanjo	ZIRO - I	264788	6	6	2	1.50 Km
164	Tiba	ZIRO - I	264624	7	7	2	1 Km
165	Tayuga	ZIRO - I	264627	7	7	2	1 Km
166	Makung	ZIRO - I	264654	7	7	2	1 Km
167	Khahu	ZIRO - I	264663	7	7	2	1 Km
168	Katapu	ZIRO - I	264679	7	7	2	1.50 Km
169	Khogyo	ZIRO - I	264693	7	7	2	1.50 Km
170	Byoni	ZIRO - I	264708	7	7	2	1.50 Km
171	Puduwan	ZIRO - I	264743	7	7	2	1.50 Km
172	Gandi Ali	ZIRO - I	264752	7	7	2	1.50 Km
173	Diley	ZIRO - I	264805	7	7	2	1.50 Km
174	Dusa	ZIRO - I	264606	8	8	2	1 Km
175	Kontii	ZIRO - I	264610	8	8	2	1 Km
176	Sarang	ZIRO - I	264738	8	8	2	1 Km
177	Myolyang	ZIRO - I	264747	8	8	2	1 Km
178	Myobya Hagya	ZIRO - I	264768	8	8	2	1 Km
179	Siro Ago	ZIRO - I	264617	9	10	3	1 Km
180	Liagi Tage	ZIRO - I	264698	9	9	2	1 Km
181	Kaliang Siigang	ZIRO - I	264711	9	9	2	1 Km
182	Moko	ZIRO - I	264728	9	9	2	1 Km
183	Gyachi	ZIRO - I	264766	9	9	2	1 Km
184	Lalye	ZIRO - I	264786	9	9	2	1 Km
185	Bamin Michitarin	ZIRO - I	264598	10	12	5	1 Km
186	Tarutahe	ZIRO - I	264615	10	12	5	1 Km
187	Nara Pabu	ZIRO - I	264649	10	12	5	1 Km
188	Taho	ZIRO - I	264668	10	12	5	1 Km
189	Parpii	ZIRO - I	264677	10	12	5	1 Km
190	Paro Lyapo	ZIRO - I	264697	10	12	5	1.50 Km
191	Dapopigyang	ZIRO - I	264712	10	12	5	1.50 Km
192	Shibu	ZIRO - I	264800	10	12	5	1.50 Km
193	Lyako	ZIRO - I	264811	10	12	5	1.50 Km
194	Myoli	ZIRO - I	264816	10	12	5	1.50 Km

195	Hula Puta	ZIRO - I	264605	11	13	5	1.50 Km
196	Khachi	ZIRO - I	264683	11	13	5	1.50 Km
197	Katunyatu	ZIRO - I	264694	11	13	5	1.50 Km
198	Sirii Pabu	ZIRO - I	264706	11	13	5	1 Km
199	Byachi	ZIRO - I	264719	11	13	5	1 Km
200	Salang	ZIRO - I	264723	11	13	5	1 Km
201	Yashibo	ZIRO - I	264767	11	13	5	1 Km
202	Myodipu	ZIRO - I	264815	12	14	5	1 Km
203	Kochipakre	ZIRO - I	264710	13	15	5	1 Km
204	Byabia	ZIRO - I	264778	13	15	5	1 Km
205	Pokhe Ayo	ZIRO - I	264680	14	16	6	1 Km
206	Takhu Sidhi	ZIRO - I	264773	14	16	6	1 Km
207	Kardo	ZIRO - I	264802	14	16	6	1 Km
208	Khangalya	ZIRO - I	264809	14	16	6	1 Km
209	Bakhani	ZIRO - I	264662	15	17	6	1 Km
210	Siikhebu	ZIRO - I	264664	15	17	6	1 Km
211	Biiree (Hong)	ZIRO - I	264686	15	17	6	1 Km
212	Lajibogya	ZIRO - I	264762	15	17	6	1 Km
213	Dilang	ZIRO - I	264794	15	17	6	1 Km
214	Pyuchi	ZIRO - I	264822	15	17	6	1 Km
215	Kasing-Puttung	ZIRO - II	264866	6	6	2	1.50 Km
216	Yebin	ZIRO - II	264952	6	6	2	2 Km
217	Ruech Geka	ZIRO - II	264955	6	6	2	3 Km
218	Thowu	ZIRO - II	264913	7	7	2	2.50 Km
219	Yebin Lebir	ZIRO - II	264956	7	7	2	4 Km
220	Mompotu	ZIRO - II	264868	8	8	2	1 Km
221	Khompu	ZIRO - II	264949	8	8	2	3 Km
222	Mego	ZIRO - II	264950	8	8	2	2 Km
223	Taki Ko Happa	ZIRO - II	264874	9	9	2	1 Km
224	Jabli (Verma Point)	ZIRO - II	264880	9	9	2	1 Km
225	Tepin Happa	ZIRO - II	264884	9	10	3	5 Km
226	Peji Tabi	ZIRO - II	264946	9	9	2	2.50 Km
227	Nyllo	ZIRO - II	264893	10	12	5	3 Km
228	Komru	ZIRO - II	264895	11	13	5	1.50 Km
229	Phop	ZIRO - II	264921	11	13	5	1.50 Km

230	Trattabi	ZIRO - II	264945	11	13	5	1 Km
231	Oram Geko	ZIRO - II	264973	11	13	5	1 Km
232	Tapa Happa	ZIRO - II	265006	11	13	5	1 Km
233	Proibrin Happa	ZIRO - II	264876	12	14	5	1.50 Km
234	Machin	ZIRO - II	264894	12	14	5	1 Km
235	Rewa Deli	ZIRO - II	264947	12	14	5	1 Km
236	Polin	ZIRO - II	264845	13	15	5	1 Km
237	Nima Happa	ZIRO - II	264856	13	15	5	1 Km
238	Pekir Passa	ZIRO - II	264892	13	15	5	2 Km
239	Tadosilly	ZIRO - II	264933	13	15	5	1.50 Km
240	Seer	ZIRO - II	264902	14	16	6	3 Km
241	Pakhi	ZIRO - II	264934	14	16	6	2 Km
242	Hitu	ZIRO - II	264958	14	16	6	1 Km
243	Sarak	ZIRO - II	264977	14	16	6	4 Km
244	Chun	ZIRO - II	264839	15	17	6	1.50 Km
245	Pogi Happa	ZIRO - II	264906	15	17	6	1 Km
246	Lichi Ochi	ZIRO - II	264916	15	17	6	2 Km
	Total :			1779	1936	662	

10. District : Papum Pare

Sl. No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Porposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Dwr Rabg	Balijan	262420	3	3	1	17 Km

2	Sichir	Doimukh	262462	36	38	11	13.7 Km
3	Bomch-Bomte	Kimin	262745	1	1	1	16 Km
4	Taram	Doimukh	262317	2	2	1	5 Km
5	Rumi	Sagalee	262525	5	5	1	6 Km
6	Habia	Sagalee	262529	3	3	1	15 Km
7	Pachin	Sagalee	262583	4	4	1	12 Km
8	Taipu	Sagalee	262640	3	3	1	5 Km
9	Langke	Sagalee	262655	5	5	1	8 Km
10	Upper Rupung	Sagalee	262656	3	3	1	5 Km
11	Talikso	Sagalee	262672	4	4	1	5 Km
12	Lengke	Balijan	262406	5	5	1	5 Km
13	Lengso	Balijan	262430	5	5	1	5 Km
14	Boginadi Forest Beat	Kimin	262759	2	2	1	5 Km
15	5 Mile Village	Doimukh	262513	6	6	2	1 Km
16	Duda Namchang	Doimukh	262347	7	7	2	2 Km
17	Hara Hapa	Doimukh	262488	14	16	6	2 Km
18	10 Mile Camp	Doimukh	262514	8	8	2	1 Km
19	Gungi	SAGALEE	262573	6	6	2	10 Km
20	Ngudang - I	SAGALEE	262602	6	6	2	12 Km
21	47 K.M. Camp	SAGALEE	262551	7	7	2	2 Km
22	Hoj -II	SAGALEE	262559	7	7	2	4 Km
23	Deb -II	SAGALEE	262571	7	7	2	5 Km
24	Muglang	SAGALEE	262585	7	7	2	9 Km
25	Sharik	SAGALEE	262681	7	7	2	8 Km
26	Bodak	SAGALEE	262584	8	8	2	7 Km
27	Rach - II	SAGALEE	262591	8	8	2	8 Km
28	Pare-Hapa	SAGALEE	262682	8	8	2	4 Km
29	Alw Tuda	SAGALEE	262683	8	8	2	6 Km
30	Cherso	SAGALEE	262569	9	9	2	10 Km
31	Nyoriso	SAGALEE	262625	9	9	2	12 Km
32	Tar	SAGALEE	262626	9	9	2	10 Km
33	Ligamtung	Balijan	262395	6	6	2	8 Km
34	Sindhu Patta	Balijan	262305	7	7	2	6 Km
35	New Bam	Balijan	262391	7	7	2	10 Km
36	Nyoing	Balijan	262400	7	7	2	10 Km
37	Kampung Reng	Balijan	262422	7	7	2	12 Km
38	Yadang - II	Balijan	262383	8	8	2	8 Km
39	Palap	Balijan	262397	8	9	3	10 Km
40	Ragia	Balijan	262403	8	8	2	18 Km
41	Diderso	Balijan	262417	8	8	2	16 Km
42	Bukka - II	Kimin	262729	8	8	2	5 Km
43	Borsetum	Kimin	262756	8	9	3	4 Km

44	Pacho	Mengio	262710	9	9	2	12 Km
45	Poteh	Sagalee	262638	21	23	7	Km
Total :				334	342	97	

11. District : Tawang

Sl. No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Luguthang	Jang-Thingbu	261611	11	12	4	25 Km
2	Thangphe Gonpa	TAWANG	261496	5	5	1	15 Km
3	Bemathang Gonpa	Tawang	261474	3	3	1	2 Km
4	Chala Gonpa	Tawang	261475	3	3	1	3 Km
5	Yuesa Gonpa	Tawang	261491	2	2	1	5 Km
6	Brakhar Gompa	Jang-Thingbu	261572	2	2	1	3 Km
7	Sarong	Jang-Thingbu	261606	2	2	1	2 Km
8	Tebo	Zemithang-Dudunagar	261389	4	4	1	4 Km
9	Haggang	Zemithang-Dudunagar	261390	2	2	1	6 Km
10	Kheleteng	Zemithang-Dudunagar	261436	2	2	1	2 Km
11	Grakhang	Jang-Thingbu	261566	12	14	5	12 Km
12	Gorman Gompa	TAWANG	261520	8	8	2	6 Km
13	Changteng	TAWANG	261511	13	15	5	8 Km
14	Thespa Gonpa	TAWANG	261508	15	17	6	5 Km
15	Gyamo	Zemithang-Dudunagar	261431	12	14	5	8 Km
16	Bompa	Mukto-Bongkhar	261598	30	32	10	5 Km
17	Rigiba	Mukto-Bongkhar	261596	14	16	6	8 Km
18	Rishorekharchen	Mukto-Bongkhar	261594	15	17	6	14 Km
Total :				155	170	58	

12. District : Upper Siang

Sl.No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	9

1	Pongging	Geku	264034	50	53	16	12 Km
2	Peki-Modi	MARIYANG	264023	13	15	5	30 Km
3	Amging	Tuting	263953	5	5	1	10 Km
4	Monge	TUTING	263930	7	7	2	18 Km
5	Monge	TUTING	263954	7	7	2	18 Km
6	Gome	TUTING	263941	14	16	6	15 Km
7	Palling H.Q.	Tuting	263957	30	34	12	Km
Total :				126	137	44	

13. District : Upper Subansiri

Sl. No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Proposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Bhur	Daporijo	263100	5	5	1	12 Km
2	Cheha-Rijo	Daporijo	263109	3	3	1	14 Km
3	Nirpelibe	Dumporijo	263197	5	5	1	11 Km
4	Dogi Rosarijo	Dumporijo	263269	5	5	1	10 Km
5	Molo	Giba	263062	1	1	1	8 Km
6	Dape	Nacho	262804	5	5	1	9 Km
7	Taro	Nacho	262806	5	5	1	10 Km
8	Kojup	Nacho	262847	4	4	1	14 Km
9	Gich Putu	Puchi-Geko	263149	2	2	1	8 Km
10	Dadu	Limeking	262764	5	5	1	55 Km
11	Bodok	Limeking	262784	4	4	1	6 Km
12	Nyare	Limeking	262786	1	1	1	9 Km
13	Mepu	Limeking	262788	2	2	1	12 Km
14	Orak Camp	Limeking	262793	1	1	1	1 Km
15	Makodo	Limeking	262797	1	1	1	16 Km
16	Cheging	GIBA	263066	7	7	2	12 Km
17	Jumbu Rage	GIBA	263076	7	7	2	14 Km
18	Roji	GIBA	263008	8	8	2	6 Km

19	Hamriga	GIBA	263080	8	8	2	10 Km
20	Machi- Rijo	GIBA	263051	14	16	6	10 Km
21	Makba	GIBA	263018	10	12	5	22 Km
22	Piya	GIBA	263023	10	12	5	35 Km
23	Hina	GIBA	263037	18	20	7	9 Km
24	Lokarijo	GIBA	263082	10	12	5	11 Km
25	Sarne-Yorlo	GIBA	263013	12	14	5	12 Km
26	Lingcha	GIBA	263069	12	14	5	13 Km
27	Dayam	GIBA	263079	12	14	5	14 Km
28	Dadi	GIBA	263081	12	14	5	20 Km
29	Puda	GIBA	263010	13	15	5	12 Km
30	Kikik	GIBA	263064	13	15	5	14 Km
31	Rapi	GIBA	263070	13	15	5	10 Km
32	Lokar Rijo	GIBA	263085	13	15	5	13 Km
33	Rago	GIBA	263019	14	16	6	30 Km
34	Rava	GIBA	263020	14	16	6	6 Km
35	Moya	GIBA	263043	14	16	6	12 Km
36	Lingking	GIBA	263067	14	16	6	9 Km
37	Semma	GIBA	263097	14	16	6	12 Km
38	Thungba(Tungba)	Limeking	262769	6	6	2	15 Km
39	Yaja	Limeking	262767	7	7	2	73 Km
40	Taying	Limeking	262771	7	7	2	72 Km
41	Redding Camp	Limeking	262792	7	7	2	26 Km
42	Redding	Limeking	262766	12	14	5	74 Km
43	Orak III	Limeking	262795	12	14	5	2 Km
44	Reddy	Limeking	262765	13	15	5	72 Km
45	Orak II	Limeking	262794	13	15	5	2 Km
46	Ishneya (Isniah) II	Limeking	262774	17	19	6	80 Km
47	Kache	Limeking	262768	20	22	7	76 Km
48	Ishneya (Isniah) I	Limeking	262773	20	24	9	80 Km
49	Gumsing	Limeking	262772	21	23	7	70 Km
50	Ojugu	Limeking	262775	21	23	7	71 Km
51	Dojubung	Limeking	262763	2	57	18	82 Km
52	Dolering	Limeking	262782	15	2	1	50 Km
53	Lingbing	Limeking	262770	19	17	6	5 Km
54	Gelinceniak Camp	Limeking	262790	1	21	7	25 Km

55	Gelomo Camp (Golomoring)	Limeking	262791	11	1	1	15 Km
56	Taksing H.Q.	Limeking	262776	52	13	5	24 Km
57	Lolmuri	Puchi Geko	263163	6	6	2	10 Km
58	Sika Babla	Puchi Geko	263179	6	6	2	4 Km
59	Bodak	Puchi Geko	263157	6	6	2	8 Km
60	Pega Koyo	Puchi Geko	263152	7	7	2	6 Km
61	Tidiegi	Puchi Geko	263158	7	7	2	5 Km
62	Yorgi Mugli	Puchi Geko	263168	8	8	2	4 Km
63	Gisa Putu	Puchi Geko	263151	9	9	2	6 Km
64	Pitak	Puchi Geko	263162	9	9	2	5 Km
65	Moya Geko	Puchi Geko	263166	9	9	2	5 Km
66	Keda	Puchi Geko	263167	10	12	5	4 Km
67	Temko	Puchi Geko	263174	10	12	5	5 Km
68	Gepen	Puchi Geko	263185	10	12	5	8 Km
69	Diamuri	Puchi Geko	263180	11	13	5	6 Km
70	Dek	Puchi Geko	263171	12	14	5	8 Km
71	Lungkone	Puchi Geko	263181	12	14	5	9 Km
72	Lut	Puchi Geko	263159	14	16	6	12 Km
73	Rite Baja	Puchi Geko	263182	14	16	6	4 Km
74	Hayi	Puchi Geko	263186	14	16	6	6 Km
75	Liver Don	Puchi Geko	263189	14	16	6	2 Km
76	Tompu Rijo	Daporijo	263107	8	8	2	10 Km
77	Shikrijo	Daporijo	263116	8	8	2	1 Km
78	Top-Rijo	Daporijo	263111	7	7	2	10 Km
79	Degom	Daporijo	263105	11	13	5	14 Km
80	Ade	Daporijo	263145	11	13	5	5 Km
81	Rite	Daporijo	263132	13	15	5	10 Km
82	Lebar	Daporijo	263141	13	15	5	2 Km
83	Pakdam	Daporijo	263143	14	16	6	10 Km
84	Jingar	Nacho	262842	6	6	2	12 Km
85	Paba	Nacho	262818	15	17	6	5 Km
86	Kojinalah	Nacho	262828	15	17	6	8 Km
87	Chokar	Nacho	262817	15	17	6	2 Km
88	Gunrijo	Dumporijo	263199	6	6	2	5 Km
89	Litenirin	Dumporijo	263256	6	6	2	12 Km
90	Pairijo	Dumporijo	263231	10	12	5	5 Km

91	Yaipu	Dumporijo	263251	11	13	5	10	Km
92	Lebi	Dumporijo	263224	12	14	5	11	Km
93	Lenyi Annu	Dumporijo	263244	14	16	6	15	Km
94	Beak Rijo	Dumporijo	263273	14	16	6	12	Km
95	Paja	Dumporijo	263265	21	24	8	5	Km
96	Bedarba	Taliha	262976	6	6	2	15	Km
97	Bokjingboktemara	Taliha	262911	8	8	2	10	Km
98	Lingri	Taliha	262939	9	9	2	15	Km
99	Tainampomara	Taliha	262922	10	12	5	10	Km
100	Abiajobe	Taliha	263000	12	14	5	10	Km
101	Kagar	Taliha	262986	15	17	6	11	Km
102	Richi Rupok	Baririjo	263297	7	7	2	8	Km
103	Catta Rupok	Baririjo	263295	8	8	2	10	Km
104	Yatek Ripa	Baririjo	263309	11	13	5	14	Km
105	Bajor Repe	Baririjo	263277	12	14	5	11	Km
106	Betcha Rupok	Baririjo	263298	13	15	5	12	Km
107	New Kulo	Baririjo	263289	15	17	6	11	Km
108	Laigi	Baririjo	263285	30	32	10	30	Km
109	Lebri	Baririjo	263286	30	33	11	25	Km
110	Riko	Baririjo	263284	25	28	9	22	Km
111	Dapo	Siyum	262866	10	12	5	12	Km
112	Pirong	Siyum	262872	12	14	5	12	Km
113	Kicherai	Siyum	262881	36	38	11	20	Km
114	Lomigaling	Giba	263011	16	18	6		Km
115	Hara	Giba	263072	16	18	6		Km
116	Raha village	Giba	263083	17	19	6		Km
117	Hengnedoku	Giba	263084	17	19	6		Km
118	Lomi	Giba	263091	19	21	7		Km
119	Dargung	Giba	263034	22	24	8		Km
120	Goha	Giba	263090	25	27	8		Km
121	Marging	Giba	263022	27	29	9		Km
122	Rikung	Giba	263087	30	32	10		Km
123	Namchi	Giba	263056	33	35	10		Km
124	Dabu	Giba	263088	35	38	12		Km
125	Nilling	Giba	263086	39	42	13		Km
126	Markia	Giba	263021	42	44	13		Km

127	Ketha	Siyum	262885	17	19	6	Km
128	Ekke	Siyum	262884	67	70	20	Km
129	Neignu	Taliha	262991	30	32	10	Km
130	Nimpu	Taliha	262940	46	49	15	Km
131	Poying	Nacho	262825	3	5	3	Km
	Total :			1775	1959	652	

14. District : West Kameng

Sl.No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Porposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8
1	Phomdong	Dirang	261665	4	4	1	15 Km
2	Shingphung	DIRANG	261619	6	6	2	10 Km
3	Yewang (Jyoti Nagar)	DIRANG	261643	142	145	39	1 Km
4	Sabang	Nafra	261715	6	6	2	11 Km
5	Silimathung	Nafra	261735	14	16	6	28 Km
6	Zomoje	KALAKTANG	261796	88	90	24	14 Km
7	Kharumali	KALAKTANG	261888	10	12	5	12 Km
8	Dungmanbaha	Dirang	261697	21	24	8	Km
9	West Sachung	Nafra	261716	22	24	8	Km
	Total :			313	327	95	

15. District : West Siang

Sl. No.	Village name	Block Name	Village Census Code	No. of H.H.	No. of System Porposed		Manual cartage distance
					Power Pack	Solar Street Light	
1	2	3	4	5	6	7	8

1	Dibe	GENSI	263703	5	5	1	23 Km
2	Gasheng	KAYING-PAYUM	263411	76	79	22	26.60 Km
3	Gate	KAYING-PAYUM	263410	47	50	15	16 Km
4	Richi - Rite	LIKHABALI	263748	5	5	1	22 Km
5	Lipo	MECHUKA	263435	8	9	3	12 Km
6	Upper Heyo	MECHUKA	263428	7	7	2	11 Km
7	Geching	Monigaon	263389	17	19	6	12 Km
8	Hemi	Monigaon	263381	25	28	9	12 Km
9	Labukar	Monigaon	263367	16	17	5	11 Km
10	Talamying	Monigaon	263382	22	24	8	12 Km
11	Yasing	RUMGONG	263504	34	37	12	14 Km
12	Gai	Mechuka	263437	2	2	1	10 Km
13	Tasum	Monigong	263365	2	2	1	12 Km
14	Sijak	Monigong	263387	3	3	1	15 Km
15	Gekar	Monigong	263391	4	4	1	16 Km
16	Panglum	Monigong	263394	4	4	1	11 Km
17	Roing	Monigong	263406	4	4	1	9 Km
18	Komte	Monigaon	263386	11	13	5	11 Km
19	Changrang	Monigaon	263362	8	8	2	12 Km
20	Lusing Yingbe	Monigaon	263354	9	9	2	8 Km
21	Pongte	Monigaon	263392	9	9	2	9 Km
22	Saline	Monigaon	263395	11	13	5	18 Km
23	Yangrang	Monigaon	263388	13	15	5	12 Km
24	Damsong	Monigaon	263368	14	16	6	10 Km
25	Pangri	Monigaon	263385	14	17	7	28 Km
26	Singbu	Monigaon	263390	14	16	6	12 Km
27	Tanghak Yingkiong	Monigaon	263384	28	32	11	10 Km
28	Kamte	LIKHABALI	263760	7	7	2	30 Km
29	New Ngopi	LIKHABALI	263755	10	13	6	8 Km
30	Kamen	Along (East)	263582	9	9	2	8 Km
31	Liduk	Gensi	263700	18	21	8	Km
32	Gaming	Kaying -Payum	263412	20	23	8	Km
33	Meying	Kaying -Payum	263422	31	33	10	Km
34	Yorkodom	Monigaon	263363	16	18	6	Km
35	Takinglitak	Monigaon	263378	17	19	6	Km
36	Kambe Dom (Pullom-II)	Monigaon	263372	19	21	7	Km
37	Paning	Monigaon	263380	19	21	7	Km
38	Simuging	Monigaon	263366	20	22	7	Km
39	Nema Sibo	Monigaon	263360	21	23	7	Km
40	Pape Krong	Monigaon	263361	21	23	7	Km
41	Soyorgong	Monigaon	263364	12	14	5	Km

42	Sukudom	Monigaon	263369	12	14	5	Km
43	Chingo	Monigaon	263359	15	18	7	Km
44	Yogong	Rumgong	263502	38	40	12	Km
	Total :			717	786	253	