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## Training on

# Grid Connected Rooftop PV Systems Technical & Economic Fundamentals

2018-Ahmadabad, Jammu, Shimla, Dehradun

Dr. Sudhir Kumar

# Rooftop Solar Tendering Procedure

# Introduction

- ❖ Notice Inviting Tender (NIT)
- ❖ E-tender time table
- ❖ E-Tender portal details
- ❖ Right to reject one or all
- ❖ Without assigning any reasons
- ❖ Disclaimer for accuracy
- ❖ Instruction data sheet - Gist

# Eligibility Criteria

- ❖ Registered under company act of India
- ❖ Adequate financial stability and status to meet the pre-commissioning expenses
- ❖ Last three years balance sheet, PL sheet
- ❖ Experience of minimum ....kW/MW direct contract completed
- ❖ Service centres within 100 km
- ❖ Rated by ICRA/SMERA, etc. agency
- ❖ NSIC Certified if small scale industry
- ❖ Registered with MNRE or SNA
- ❖ Not blacklisted from any organization
- ❖ Sufficient skilled manpower

# Bid Submission Procedure

- ❖ Brief scope of work
- ❖ Two envelope concept
- ❖ First envelope: Techno-commercial
  - ❖ All formats and schedules duly filled
  - ❖ EMD as demand draft
  - ❖ No Price Bid
- ❖ Second envelope
  - ❖ Price bid in given formats
- ❖ Both envelopes sealed separately and marked properly
- ❖ Both sealed envelopes in third envelope

# Specific Conditions (1)

- ❖ Technical specifications all items
- ❖ Pre-commissioning tests of all electrical equipment
- ❖ Minimum annual power generation guarantee year-wise
- ❖ Interconnection procedure
- ❖ System and performance guaranty/warranty
- ❖ Scope of Comprehensive (?) AMC
- ❖ O&M guideline - cleaning frequency, data supply, response time etc.

# Specific Conditions (2)

## ❖ Payment Terms and Various Security Payments

### (Justifications?)

- ❖ EMD without interest
  - ❖ Security Deposit
  - ❖ Retention money
  - ❖ Performance Bank Guarantee
- 
- ❖ Bid Evaluation Procedure
    - ❖ Second envelope to open only after conditions of first envelope fulfilled
    - ❖ Technical marking system
    - ❖ Financial marking system
    - ❖ Percentage allocation TMS vs FMS

# General Conditions (1)

- ❖ Definitions and Interpretations
- ❖ Mandatory Legal Bindings
- ❖ Entirety
- ❖ Sign and seal on each page
- ❖ Permits and Licenses
- ❖ Federal Government and Local Rules
- ❖ Taxes and Duties
- ❖ No optional items should be quoted
- ❖ No subcontract of full tender work
- ❖ Time of Completion, Extension of Time & Progress Chart
- ❖ Liquidated Damages
- ❖ Confidentiality

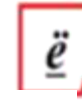


# General Conditions (2)

- ❖ Employees responsibility
- ❖ All insurances : material, manpower
- ❖ Substitution and Escalation
- ❖ Suspension of Works
- ❖ Termination of Contract
- ❖ Settlement of Disputes and Arbitration
- ❖ Right to Audit/Technical Examination
- ❖ Project Execution Obligations: storage, security, cleaning, waste disposal etc.
- ❖ Right to access any time
- ❖ Indemnity
- ❖ Force majeure

- ❖ Conditions acceptance commitment letter on bidder's letter head
- ❖ Format for acceptance of work
- ❖ Format of Agreement
- ❖ Format of Indemnity Bond
- ❖ Checklist for Enclosures
- ❖ Format of Power of Attorney
- ❖ Cover Letter for Tender Offer
- ❖ Profile of the bidder
- ❖ Technical Data Sheet
- ❖ Check List for Bank Guaranty
- ❖ Format of Performance Bank Guaranty
- ❖ Format for price bid

# Example: 40 kW Rooftop Tender



Steinbeis Centre for  
Technology Transfer India



**N H D C LTD.**

(A Joint Venture of NHPC & Government of Madhya Pradesh)

**R & R OFFICE  
KHANDWA (M.P.)**

**Bid Document  
for**

**SUPPLY, INSTALLATION, TESTING AND  
COMMISSIONING OF 40 KW GRID CONNECTED  
SOLAR POWER PLANT AT NAGCHUN PARK,  
KHANDWA (M.P.)**

**NIT No. NHDC/4/C-4/CLX-20/16/0850 dated : 27.12.2016**

**MANAGER (Contracts)  
NHDC Ltd. R&R Office,  
NVDA Office Complex,  
KHANDWA (M.P) 450001**

# Example: 40 kW Rooftop Tender

## 1.0 Brief Details of Tender:

S.No.	Item	Description
(i)	Estimated cost of the Work	Approx. Rs. 32.30 Lacs
(ii)	EMD (Bid security)	Rs. 65,000/- (Rupees sixty five thousand only) by Demand Draft (DD) / Bankers Cheque (BC)/ Bank Guarantee (BG) in favour of NHDC Ltd. payable at Khandwa.
(iii)	Completion period	02 (Two) Months
(iv)	Tender document fees (Non-Refundable)	Rs. 500/- (Rupees five hundred only) by DD/BC in favour of NHDC Ltd. payable at Khandwa.
(v)	Tender Inviting Authority	Manager (Contracts), NHDC Ltd., R&R Office, Civil Lines, Khandwa (M.P.) Phone No. 0733-2224459, Fax No. 0733-2222242 email : <a href="mailto:nhdcmrcontract@gmail.com">nhdcmrcontract@gmail.com</a>

## 2.0 Critical Dates of Tender:

S.No.	Particulars	Date & Time
(i)	Publish Date & Time	28-12-2016 : 10.00 AM
(ii)	Sale/ Document Download Start Date & Time	28-12-2016 : 10.00 AM
(iii)	Sale/ Document Download End Date & Time	27-01-2017 : 03.00 PM
(iv)	Clarification Start Date & Time	28-12-2016 : 10.00 AM
(v)	Clarification End Date & Time	20-01-2017 : 05.00 PM
(vi)	Bid Submission Start Date & Time	28-12-2016 : 10.00 AM
(vii)	Bid Submission End Date & Time	27-01-2017 : 03.00 PM
(viii)	Bid Opening Date & Time	28-01-2017 : 03:30 PM

# Example: 40 kW Rooftop Tender

## 3.0 Qualifying Requirement:

- (a) **Financial Soundness:** The Firm should have average annual financial turnover during the last three financial year ending on 31st March'2016, at least 30% (i.e. Rs. 9.70 lakh) of the estimated cost put to tender.

The bidder shall submit copy of Audited Balance sheet and Profit & loss account for the last three financial years or Certificate from Chartered Accountant in respect of Annual Turnover for last three years ending 31st March'2016.

- (b) **Experience:** Bidder should have experience of **Supplying, Installing, Testing & Commissioning of Solar Power Plant of capacity 20 KW or more to any Govt. Deptt. / Undertaking/ PSU or reputed private companies in previous seven years ending last day of month previous to the one in which tenders are invited.**

Bidder shall submit copy of supply order(s) / LOA of required capacity along with completion certificate towards successful completion of work in support of experience.

- (c) The bidder should have valid Registration No. of TIN/Sales Tax/VAT and Service tax registration no.  
(d) The bidder should have valid Permanent Account Number (PAN) allotted to the firm/proprietor.

## **SCOPE OF WORK:**

**“Supply, Installation, Testing and Commissioning of 40 KW Grid connected Solar Power Plant at Nagchun Park, Khandwa” as per the quantity in the Schedule of Quantity (ies) and Prices, Schedule– ‘A’. Detailed Scope of work as per Section-5 (Scope of work and Technical Specifications)**

**The bidder shall furnish Scanned Copy of documents for proof as below for fulfilling qualifying criteria as mentioned above failing which his offer shall be summarily rejected:**

# Example: 40 kW Rooftop Tender

## SUBMISSION OF OFFER: -

The tender shall be submitted online in two cover system **duly scanned and digitally signed** by the authorized representative of the bidder as follows:

### Cover -1 (TECHNICAL BID)

**Online bids should be submitted containing scanned copy of following document in Cover-1 for documentary proof, for fulfilling qualifying criteria/ requirements failing which the offer shall liable to be rejected.**

- a. Earnest Money Deposit (refundable) of Rs. 60,000/- as per Clause 4.0 above.
- b. Tender fee (Non-refundable) of Rs. 500/- as per Clause 5.0 above.
- c. The bidder or his authorized representative shall sign and upload all the documents, owning responsibility for their correctness/ authenticity and submit Declaration in respect of acceptance of terms and conditions of tender document.

Self attested copy of PAN and TIN/ Sales Tax Registration Certificate.

Self attested copy of Trading and Profit & Loss Accounts/Balance sheet/ Certificates audited by CA in fulfillment of Eligibility Criteria.

Self attested Copies of Supply Orders and Completion certificate in fulfillment of Eligibility Criteria.

Self attested Copy of authorization certificate i.e. authorized Dealer/ Distributor/ Channel partner or documents in support of manufacturer.

Acceptance of technical specification of the item mentioned in '**Section-5**' of tender document.

## Example: 40 kW Rooftop Tender

### EVALUATION OF TENDER:

Only those bidders shall be considered qualified by the Corporation, who submit requisite EMD, tender fees and documents, acceptance of the terms & conditions of the Tender document and meet the Qualifying requirement stipulated in the tender document. The decision of the Corporation shall be final and binding in this regard.

Bidder needs to submit the stamped & signed copy of Bid Form (Annexure-I) as token of acceptance of all the terms & conditions. In case bidder submits stamped and signed copy of documents, it will be presumed that all the terms & conditions of tender document are acceptable to bidder. Deviation in terms & conditions, if any, need to be specifically mentioned by the bidder.

The evaluation process shall be carried out in two stages

- i. Evaluation of Eligibility criteria and Techno-commercial evaluation
- ii. Financial evaluation

The Price bid(s) of the prospective bidders, who fulfils the techno-commercial requirement of the bid(s), shall be evaluated further.

# Example: 40 kW Rooftop Tender

## PAYMENT TERMS:

80% payment of supply portion including 100% taxes & duties of supply portion shall be made within 30 days after successful supply duly verified by engineer –in-charge of the work and on submission of following documents:-

- a) Evidence of despatch (GR/LR etc.)
- b) Original invoice.
- c) Test certificate (s).
- d) Copy of Insurance Intimation
- e) Inspection report at manufacturer's / supplier's premises

100% payment of installation portion along with balance 20% payment of supply portion shall be made after successful completion of installation, testing & commissioning as per scope of works and satisfaction of engineer-in-charge.

All Payments will be made in Indian Rupees, unless otherwise specified in the Contract. The payment shall be made through ECS/ RTGS/ NEFT/ NET BANKING after submission of all the above documents. The bank charges shall be borne by the supplier. The bidder shall submit their bank details in format as per **Annexure-VIII**.

## PERFORMANCE GUARANTEE:

The contractor shall submit the performance bank guarantee in the form of Bank Guarantee from an Indian Nationalized Bank or State Bank of India or any schedule bank of India on the Form enclosed as **Annexure-XI** of this section for an amount equal to Ten (10) percent of the supply order value, within 28 days from the date of issue of order. The Performance bank guarantee shall be released after the expiry of warranty period. No interest shall be paid on Performance bank guarantee.



## Example: 40 kW Rooftop Tender

Quality Certification, Standards and Testing for Grid-connected  
Rooftop Solar PV (Govt. of India Notification dated 09 February 2016)

# Example: 40 kW Rooftop Tender

## Checklist for Enclosures

(Tenderer should fill up YES or NO without fail)

	<b>Bid Enclosures</b>	<b>YES or NO</b>
1.	Whether the Tender is submitted in <b>Two covers Technical Bid and PERCENTAGE BID?</b>	
2.	Whether Two covers along with EMD cover in Technical Bid are put into an outer cover?	
<b>3.</b>	<b>Whether Technical Bid (Envelope- A) contains the following</b>	
3.1	Tenderer's undertaking covering letter in the Letter Head shall be signed by the authority, stamped and submitted.	
3.2	Signed and stamped Letter of Authorization or Power of Attorney for signing the Tender document shall be submitted.	
3.3	All sections covered in the Tender document in full shall be signed by the authority, stamped and submitted	
3.3a	A copy of tender document signed on each page by the authorized signatory as a token of acceptance of all terms and conditions	
3.4	Earnest Money Deposit (EMD) amount and tender fee as specified in the Tender shall be submitted	
3.4a	In case of claiming exemption from EMD and tender fee, valid document/ certificate for exemption of EMD from NSIC/Similar Government authorities shall be submitted	
3.5	Filled up Technical Bid and Profile of tenderer shall be signed by the authority, stamped and submitted	
3.6	Unfilled PERCENTAGE BID format shall be signed by the authority, stamped and submitted	
3.7	All supporting documents for proving the Eligibility Criteria shall be signed by the authority and stamped in all pages	

## Example: 40 kW Rooftop Tender

3.8	Supporting documents to meet the Eligibility Criteria	
	a) All the supporting documents to meet the Eligibility Criteria as laid down in the Tender under Eligibility Criteria shall be signed by the authority and stamped	
	b) Tenderer's Certificate of Incorporation or Registration	
	c) Balance Sheet and Profit & Loss accounts for the past three year should be submitted.	
	g) Clientele list for the SPV power plants installed and major work orders copies as per technical eligibility criteria	
3.9	Following Test Certificates & Reports as per clause 15	
	<b>i. SPV Modules</b>	
	a) IEC 61215 / IS 14286 for Crystalline Modules	
	b) IEC 61730 Part 1 & 2	
	c) IEC 61701	
	d) STC performance certificate	
	<b>ii. Balance of System (for PV Power Plants)</b>	
	a) Power Conditioners / Inverters -IEC 61683 & IEC 60083-2(1,2,14,30), IEC 62116, IEC 62109/ Equivalent standards	
	b) Cables- IS: 1554/IEC 60502 AND IS 694/IEC 60227 or Equivalent IS standard	
	c) Switches / Circuit Breakers/ Connectors - IS/IEC 60947 Part	

**Thank You**