

# **NEW TOWN KOLKATA DEVELOPMENT AUTHORITY**

(A Statutory Authority Under Government of West Bengal)  
3, Major Arterial Road, New Town, Kolkata - 700 156

Memo. No. 4070/EE-E/NKDA/20012/2/2020

Date: 31/07/2020

## **NOTICE INVITING e Tender**

Notice Inviting e-Tender No.02/EE-E/NKDA/2020-21(2<sup>nd</sup> Call)

### **New Town Kolkata Development Authority**

**Request for Proposal for design, supply, fabrication, erection, commissioning, testing and maintenance of 5 (five) solar trees at the Smart Street beside 'Mela Ground' and 'Swapna Bhore' in New Town, Kolkata**

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a. **New Town**

Fig 1: Map of New Town Kolkata

The map illustrates the urban layout of San Jose, Costa Rica, with the following details:

- Central Business District (CBD):** Shaded in pink, containing sub-zones IIC, IIE, IIG, IIB, IIF, and IJD. It includes the Convention Centre and the UNITEC building.
- Action Area - I:** Shaded in yellow, located to the west of the CBD, containing sub-zones IA, IB, IC, and ID.
- Action Area - II:** Indicated in pink, located to the north of the CBD.
- Action Area - III:** Shaded in blue, located to the south and east of the CBD, containing sub-zones IIIA, IIIB, IIIC, IIID, IIIE, IIIF, IIIG, and IIH.
- Infrastructure:** A red line shows the proposed route for the new airport access road, starting from the new airport (marked with a red star) and passing through the CBD. Other roads shown include Highway 101, Highway 102, and Highway 103.
- Landmarks:** The Convention Centre, UNITEC, and the new airport are marked.

The city provides best in class urban infrastructure facility and government service delivery to its citizens while preserving the cultural heritage of West Bengal. Over the last few years, the city has achieved world class basic / core infrastructure facilities.

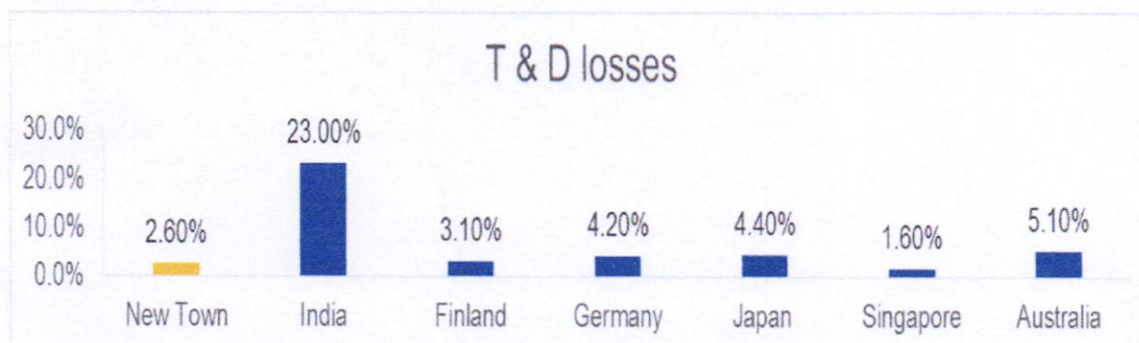
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## b. Solar City

The city provides uninterrupted grid based power to all citizens and has 100% underground network of electric wiring. City has recorded an average of less than 5% T&D losses over the last 3 years as shown in the figure alongside. As shown below, the T&D loss for New town is comparable to other world class cities

### T&D Losses



Source: NTESCL, World Bank ((2016-17)

New Town authorities have taken many initiatives to ensure efficiency and sustainability in energy consumption. Street lights, which are a major load of energy consumption in any town, are aggressively being replaced with energy efficient LED lights with advanced smart control devices to ensure optimum use of energy. The West Bengal Housing Infrastructure Development Corporation Limited (WBHIDCO), the development authority for the town, operates electric buses to ensure lower consumption of fossil fuels in public transport in the town.

New Town is a Solar City under the Solar City Mission of India. In 2018-19 the installed renewable energy capacity in the town was 703.62 KWp<sup>1</sup>. If we consider the area of the town, it translates into an impressive figure of 23.45 KWp per square Km. However, the total power consumption in municipal services at 346.56 MU<sup>2</sup> in 2018-19 is at a higher side given the area and population of the town.

There is a serious problem of use of fossil fuels in municipal services. The use of fossil fuel in the municipal service, almost singularly coming from the use of service vehicles is quite high in terms of the policy of the city administration to ensure a green and clean modern town.

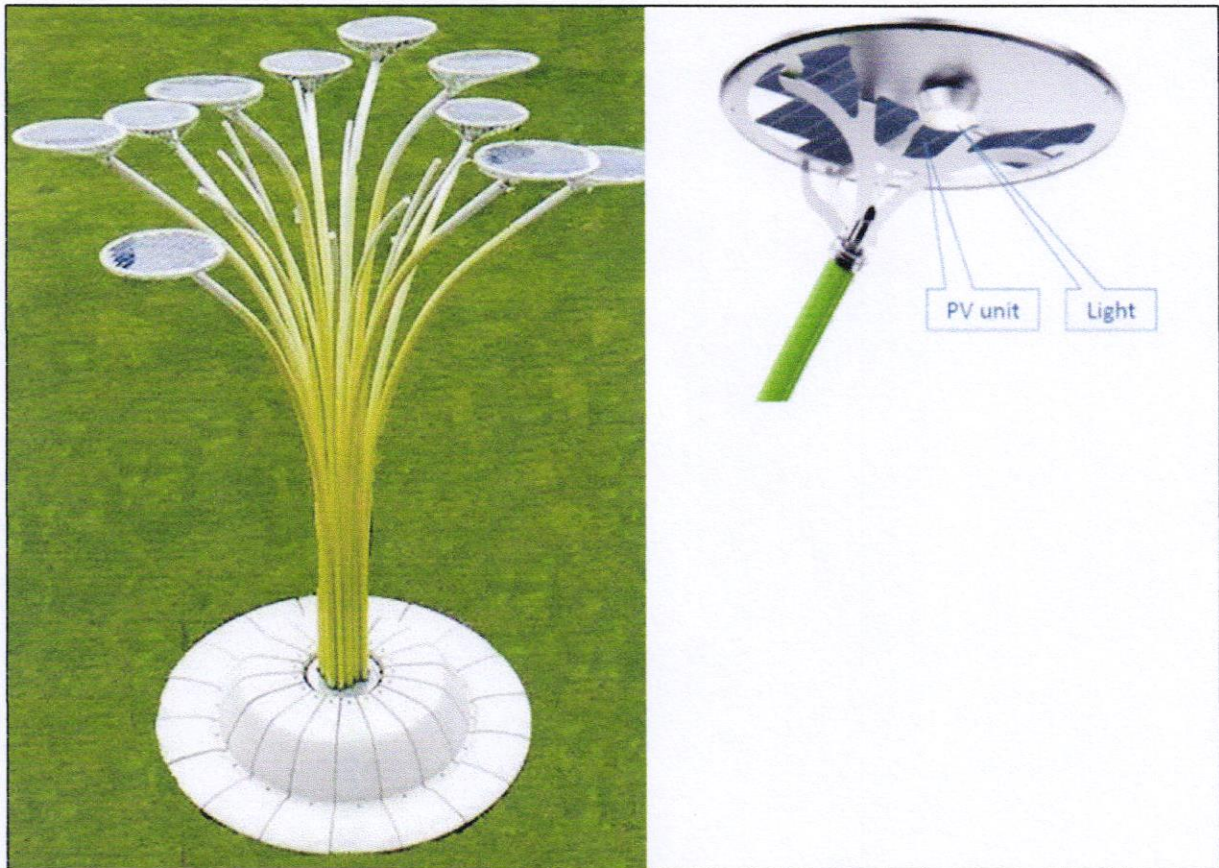
## c. Concept of solar tree

<sup>1</sup> Source: WBSEDCL

<sup>2</sup> Source: WBSEDCL



### Indicative look of solar tree



1. Solar Power Tree is designed with branches made of steel to hold the photovoltaic panels. It generates power, supports street lighting, adds to the aesthetics of the site and promotes the use of alternative renewable energy sources, generally as a demonstration case to the public.
2. The artificial tree with Photo voltaic cells arranged to form the tree shape; is designed efficiently to ensure maximum power from the sunlight across the panels.
3. Solar tree dimensions details: Solar tree minimum and maximum height range: Minimum Ground clearance of 12ft to be maintained.
4. Solar Tree surrounding area dimension: Diameter of the Solar tree top will be approx. in the range of 10-15ft about the tree trunk as the axis.
5. Base material and Base area dimension: Base material will be steel structure covered by fibre coating and painting to give the look of a natural tree. Approx. dimensions of the base structure above ground will be a cylinder of about 4ft dia and 1.5ft height. The RCC foundation will be underground.
6. Wind Speed-50m/sec (as per Wind speed map in IS 802 part 1) is to be considered in the design aspect of Solar tree.
7. Type of Light wattage (min 5W), Color (Moon light) and Lumens output (650-850) to be considered.
8. SBC (Soil bearing capacity):4.5MT/Sq.m is to be considered.
9. Panel: Mono-crystalline Solar Panels.
10. Provide smart monitoring system.



#### **d. Intent**

Continuing with its commitment to renewable green sources of energy, New Town Kolkata Development Authority (NKDA) intends to set up 5 (five) solar trees on the pavement of the smart street beside New Town Mela Ground and Swapna Bhore.

NKDA plans to have 5 solar trees with a grid connected combined power generation of 5 KWp. The details are as follows:

|                                                                            |                                                           |
|----------------------------------------------------------------------------|-----------------------------------------------------------|
| Requisite Number of solar trees                                            | 5                                                         |
| Requisite Power Generation (total solar power together from 5 solar trees) | Minimum 5 KWp                                             |
| Requisite Connection type                                                  | On-grid (3 Phase)                                         |
| Certification                                                              | All components to have suitable third-party certification |

For design, supply, fabrication, commissioning, testing and maintenance of the solar trees, NKDA invites proposals from experienced eligible agencies in two step bid.

### **Eligibility**

The Applicants must meet the following eligibility criteria:

**1. Structure:**

Private Limited Companies/Research organisations/Registered start-up organisations/proprietorship firms/ Partnership firms

**2. Turnover:**

Average Annual turnover must be at least Rs. 1 Crore /- during last three financial years ending on 31.03.2019 on the basis of audited annual accounts issued by the same Chartered Accountant who has conducted the Audit. (Enclose Certificate from Chartered Accountant).

**3. Experience:**

At least three years of experience in designing, installation and maintenance of solar photo voltaic cell-based power generation unit of not less than 5kWp in a single installation in India/ At least three years of experience in designing, installation and maintenance of designing, installation and maintenance of minimum 50 nos Solar street light.

Experience credentials will be accepted only on submission of completion certificate from an officer not below the rank of executive engineer or equivalent authority of any government department, autonomous body, statutory organization, Local Government or an SPV of a Smart City.



4. Joint ventures and consortiums are not permitted.
5. Preferable have registered office & field service setup to provide good after sale services including necessary repair & maintenance in the state of West Bengal.
6. Pan Card, Income Tax Acknowledgement Receipt for the latest Assessment year, P.T. Deposit Challan for the current year, GST Registration and PF registration Certificate are to be submitted.
7. Bidder must submit the detailed technical proposal at the time of document uploading.

## Scope of Work

1. Inspection of site of installation and mark the exact physical location of the 5 (five) solar trees with approval of the Engineer in Charge (EIC) considering the maximum availability of solar incidence, free flow of vehicular and pedestrian traffic.
2. Soil investigation and inspection for determination of most suitable nearest tapping point in the WBSEDCL power mains and finding out the alignment of underground utilities.
3. Preparation of the detail working drawing including structural, foundational, electrical elements and getting it approved by the EIC. The look and feel of the architectural drawing will be matching with the sample photograph provided at page 5 paragraph C Concept of solar tree
4. Preparation of appropriate foundation at the site.
5. Supply, fabrication and erection of the 5 solar trees of approved design and quality as approved by the EIC and to the satisfaction of the EIC
6. Commissioning of the solar trees with all cabling, electrical fittings and fixtures, Solar PV panels, light fittings complete with fitting of all electrical switches, meters and panels for on grid solar power generation.
7. Maintenance of the entire set up including necessary spares and consumables for 3 years post successful commissioning and testing of the 5 solar trees.

## Instruction to bidders

### a. Bid Data Sheet

| Sl. No. | Section                   | Remarks                                                                                               |
|---------|---------------------------|-------------------------------------------------------------------------------------------------------|
| 1       | <b>Project</b>            | Design, supply, fabrication, erection, commissioning, testing and maintenance of 5 (five) solar trees |
| 2       | <b>Location</b>           | Around the smart street beside New Town Mela Ground and Swapna bhore                                  |
| 3       | <b>Nodal Agency</b>       | New Town Kolkata Development Authority                                                                |
| 4       | <b>Duration</b>           | Designing, Commissioning and testing: 2 months<br>Maintenance: 3 years post successful commissioning  |
| 5       | <b>Project Components</b> | 1. Designing the solar trees<br>2. Erection and commissioning of the solar trees                      |



|    |                                                                 |                                                                                                             |
|----|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|    |                                                                 | 3. On grid connectivity<br>4. Maintenance of the solar trees for three years post successful commissioning. |
| 6  | <b>Earnest Money Deposit (EMD)</b>                              | 1,00,000 (Rupees one lakh only) lump sum                                                                    |
| 7  | <b>Mode of Selection</b>                                        | Combined Quality and Cost Based System.                                                                     |
| 8  | <b>Bidding Parameter</b>                                        | Cost of designing, erection, commissioning and testing of 5 solar trees and three years of maintenance      |
| 9  | <b>Payment</b>                                                  | Complete installation and testing followed by yearly maintenance                                            |
| 10 | <b>Bidding site</b>                                             | www.wbtenders.gov.in                                                                                        |
| 11 | <b>Bid Publication Date and time</b>                            | 31/07/2020 from 06:55P.M                                                                                    |
| 12 | <b>Starting date of downloading the bid</b>                     | 31/07/2020 at 06:55P.M                                                                                      |
| 14 | <b>Last date of downloading the bid documents</b>               | 14/08/2020 up to 06:55PM                                                                                    |
| 15 | <b>Last Date and time of uploading the bid (Online)</b>         | 14/08/2020 up to 06:55PM                                                                                    |
| 16 | <b>Bid opening date for Technical Proposals (Online)</b>        | 18/08/2020 up to 11:00AM                                                                                    |
| 17 | <b>Date of uploading the list of eligible bidders. (Online)</b> | Will be intimated in due course                                                                             |
| 18 | <b>Date of opening financial bid. (Online)</b>                  | Will be intimated in due course                                                                             |
| 19 | <b>The tender document consists of</b>                          | WBF2911                                                                                                     |

#### **b. General Instructions for online bidding**

Annexed herewith

#### **Method of Evaluation**

1. The evaluation of the bid will be made by a bid evaluation committee constituted by the competent authority of NKDA Limited.
2. The evaluation will be made in two parts
  - a. Technical evaluation of acceptability of design and short listing of eligible bidders on the basis of soundness and feasibility of the design. The bidders have to submit detail proposed design of a single typical solar tree feasible for the selected site of installation. The evaluation committee will adjudicate the design on the basis of
    - i. Structural stability judged on the basis of detail structural drawing of a typical solar tree in accordance with the look and feel as in the photograph provided in this RFP document. The structural stability is to be certified by a structural engineer.
    - ii. Aesthetic appeal and fit with photograph provided in the RFP document



- iii. Power generation capacity to be certified by the bidder and calculation shown.
  - iv. Ease of maintenance as described by the bidder
  - v. Plan of implementation in detail
3. All the bidders fulfilling minimum eligibility criteria will be evaluated technically on the above parameters.
  4. All the bidders have to cover these points in their technical proposal document.
  5. There will be a technical score of 100 to be marked on the basis of submitted proposal document consisting design proposals and technical presentation as detailed above. The scoring will be as follows:

| Sl. No. | Scoring criteria                               | Basis of scoring                           | Maximum score |
|---------|------------------------------------------------|--------------------------------------------|---------------|
| 1       | Structural stability                           | Documents and design submitted             | 25            |
| 2       | Aesthetic appeal and fit with the surroundings | Documents submitted                        | 25            |
| 3       | Power generation capacity                      | Documents of calculation and certification | 15            |
| 4       | Ease of maintenance                            | Documents submitted                        | 15            |
| 5       | Plan of implementation                         | Implementation plan submitted              | 20            |

6. The minimum qualifying score will be 50 in technical evaluation
7. The bidders scoring 50 or more will be considered for opening of the financial proposal.
8. The highest financial score of 100 will be awarded to the technically qualified bidder who quotes the least amount and the other qualified bidders will get proportionately lower score as follows:
  - a. If the financial offer of least cost bidder is L and that of another higher cost bidder is N then the financial score of the higher cost bidder FS will be  $FS=100 \times (L/N)$
9. Final evaluation will be made on the a CQCBS (combined quality and cost based system) with 70% weight age on technical score and 30% weight age on financial score as follows:
  - a. If the Technical score of a bidder out of 100 is T where  $T > 50$ , and their Financial Score calculated as at b (i) and b(ii) above is FS out of 100, then the final CQCBS score of this bidder will be  $S=70\% \text{ of } T + 30\% \text{ of } FS$
10. The bidder scoring highest composite score will be the selected bidder subject to compliance with all other relevant terms and conditions.
11. Technical eligibility will be determined on the basis of submitted documents and the decision of the authority will be final in this matter.
12. In the financial bid, the bidders will have to quote the lump sum total cost of designing , supplying, installation, commissioning and testing of each unit of the solar trees of approved design and post commissioning maintenance for 3 years post successful commissioning and testing of each of the solar trees inclusive of all taxes and levies.



## Payment Milestone

Payment of fees will be made on raising of invoice by the agency subject to satisfactory performance of the deliverables and after making statutory deductions:

| Serial No. | Deliverable                                                                                     | Time                                                  | Payment % |
|------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------|
| 1          | Design, Fabrication, installation commissioning and testing of 5 solar trees of accepted design | 2 months                                              | 90%       |
| 2          | Maintenance of the 5 solar trees post successful commissioning for 3 years                      | At the end of three years of satisfactory maintenance | 10%       |



## Approved Make List

| Sl No. | Description of Item                                                                   | Approved Make / Brand                                                            |
|--------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|        | <b>Civil works</b>                                                                    |                                                                                  |
| 1      | Reinforcement for concrete works                                                      | SAIL/TATA/RINL                                                                   |
| 2      | Paint                                                                                 | Berger/ Asian Paints/ ICICI/ Nerolac                                             |
| 3      | MS structural works                                                                   | SAIL/TISCO/UTKARSH                                                               |
| 4      | Anti-termite chemical                                                                 | As approved by EIC                                                               |
| 5      | Water proofing chemical /compound                                                     | Sika / Dr Fixit/ Fosroc                                                          |
| 6      | White cement                                                                          | Ultratec/Birla/ACC                                                               |
| 7      | cement 53 grade                                                                       | Ultratech/Ambuja /ACC                                                            |
| 8      | Interlocking pavers /Concrete Kerb/RCC manhole covers                                 | Pavestone/Calstone/GK Precast/ Advance precast/ S G Poly Concrete.               |
| 9      | Outdoor vitrified Pavers/Tiles                                                        | H&R Johnson/Pavit/Ultra Pavers                                                   |
| 10     | Stainless steel                                                                       | SAIL/TATA/RINL                                                                   |
| 11     | Aluminium Composite Panel (ACP)                                                       | Aludecor/ Alstrong/ Timex Bond/Alstone                                           |
|        | <b>SOLAR</b>                                                                          |                                                                                  |
| 12     | Solar panel (Mono crystalline) with accessories all complete                          | Vikram/Tata Solar/Luminous/MNRE approved Brand                                   |
|        | <b>Electrical</b>                                                                     |                                                                                  |
| 13     | Lights, Cables, Switch Boards, DB, MCB, conduits, all other fittings and accessories. | Legrand/Schneider/ Seimens/ABB/L&T/Havells/CG/Almonard/Philips/Bajaj/Wipro/Surya |

  
**Executive Engineer (E)**  
**New Town Kolkata Development Authority**

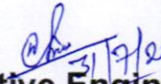


**Memo No. 4070/1(8)/EE-E/NKDA/20012/2/2020**

**Date: 31-07-2020**

Copy forwarded for information to:-

- i) The Chief Executive Officer, New Town Kolkata Development Authority.
- ii) The Chief Executive Officer, New Town Kolkata Green Smart City Corporation Ltd.
- iii) The Chief Engineer, New Town Kolkata Development Authority.
- iv) The Finance Officer, New Town Kolkata Development Authority.
- v) The Assistant Engineer (E), New Town Kolkata Development Authority.
- vi) P.A to the Chairman, New Town Kolkata Development Authority.
- vii) Office copy of NKDA.
- viii) Official Website of New Town Kolkata Development Authority ([www.nkdamar.org](http://www.nkdamar.org))

  
**Executive Engineer (E)**  
**New Town Kolkata Development Authority**