

Invitation of Expression of Interest for Empanelment of Agencies for Supply & installation of Solar Water Heaters in Kerala through Local Self Government (LSG) projects.

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# **EMPANELMENT DOCUMENT**

***Notification No. ANERT-Tech/62/2018-PO (JR)***

**Dated 28<sup>th</sup> March 2018**

## **PART-I**

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**Agency for Non-conventional Energy & Rural Technology**

Vikas Bhavan (PO), Thiruvananthapuram – 695 033, Kerala

Phone: (91-471) 2334122, 2334124, 2331803(office), 2329854 Fax: (91-471)2329853

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***Notification No. ANERT-Tech/62/2018-PO (JR)***  
**Dated 28<sup>th</sup> March 2018**

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As per GO No. 22/2018/LSGD dated 14.02.2018, Local Self Government Department, Government of Kerala, has given guidelines for the implementation of solar projects. Based on this, ANERT has decided to prepare the list of empanelled agencies for implementation of solar water heaters. Hence Expression of Interest in accordance with the attached pre-qualification criteria, Technical specifications and financial terms and conditions are invited from reputed and experienced channel partners of MNRE, Govt. of India. Reputed public sector undertakings listed by MNRE as channel partners and state government Agencies are also eligible to apply for empanelment.

The EoI includes two types of products.

1. Solar Water Heater (ETC)
2. Solar Water Heater (FPC)

The offers have to be submitted based on the qualification criteria and as per the bid submission guidelines. The guidelines and documents for Expression of Interest can be downloaded from the website of ANERT. The application should be received on or before 12 noon, 30<sup>th</sup> April 2018 at the office of Director, ANERT, Vikas Bhavan (PO), Thiruvananthapuram, 695 033 by post or by hand, along with application fee of Rs.50000/- as DD in favour of Director, ANERT, Thiruvananthapuram. The submission will be evaluated and qualified bidders shall be included in the empanel list. ANERT will not be responsible for any postal delays. The validity of the list will be for two years. This list will be updated as and when required.

Thiruvananthapuram  
28.03.2018

Director

# I.B – Abstract

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Notification No.	<b>Notification No. ANERT-Tech/62/2018-PO(JR)</b> <b>Dated 28<sup>th</sup> March 2018</b>
Superscription	Invitation of Expression of Interest for Empanelment of Agencies for Supply & installation of Solar Water Heaters in Kerala through Local Self Government (LSG) projects.
Date of release of Invitation	28 <sup>th</sup> March 2018
Date of submission EoI by the agencies	12:00 noon, 30 <sup>th</sup> April 2018
Place of opening Submission by Agencies	Office of the Director, ANERT, Vikas Bhavan. PO, Thiruvananthapuram – 695 033, Kerala
Application fee	Rs.50,000/-
How to obtain the application form for submitting EoI	To be downloaded from the website of ANERT <a href="http://www.anert.gov.in">www.anert.gov.in</a>

Thiruvananthapuram  
28.03.2018

Director

## I.C –Implementation plan

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### 1. General

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- 1.1 This Expression of Interest is being invited for preparing the list of Empanelled Agencies for installation of Solar Water Heaters in Kerala. Only the agencies listed through this process will be eligible for the implementation of projects with LSG, State and Central Financial Assistance/ fund. The validity of the list will be two years. The list of Empanelled Agencies prepared through this process will be published for the information of proponents for installation of Solar Water Heaters. The status of empanelment of any agencies in this list shall be terminated without notice, in case of their non-existence/removal from the channel partner list of MNRE or other violations.
- 1.2 The Beneficiary /Government/any other proponent shall have the freedom to select an agency of their choice from the list of Empanelled Agencies published by ANERT through this process, for installation of the solar water heaters. This list will be the base list for the implementation of solar water heaters in Kerala. However, for government funded programmes, necessary formalities based on store purchase rules / any other relevant guidelines in force may also be observed.
- 1.3 The installation of solar water heaters should be as per the technical compliance and installation practices of MNRE and ANERT. Any amendments/ modification issued from time to time, in this regard will be incorporated.
- 1.4 The Central & State Financial Assistance will be as per the guidelines of MNRE & ANERT respectively and its amendments from time to time.

### 2. ANERT and LSG programmes

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- 2.1 ANERT and LSG Programmes shall include supply and installation of solar water heaters for any interested LSG institutions within the State, who invite quotation/ Tender for such supply and the proposed locations found suitable for the same. These supply/installations could be with or without Government Subsidy.
- 2.2 Price offers are invited for various solar products along with this EoI so as to enable time-bound supply and installations. The Agencies technically qualified for empanelment would be short - listed based on the price offered for supply of such products.

- 2.3 Deposit works entrusted to ANERT by various institutions / firms for the supply/ installation of solar water heaters would be another category of ANERT programmes during this period. The Agencies empanelled in this process only would be eligible for undertaking such works also and price offers will be collected based on site conditions separately (if required).

### **3. Scope of Work**

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- 3.1 On empanelment, the Empanelled Agency has to provide wide publicity and awareness to the public throughout Kerala regarding the programme.
- 3.2 The solar water heater system should have 5 year warranty.
- 3.3 Agency should have at least one service centre for two adjacent districts of Kerala (even though a service centre in every district would be appreciated). A service agreement in the given format along with copy of MoU / Agreement with the service centres has to be submitted along with EoI. Failure to fulfil this will make them ineligible from getting included in the list of Empanelled Agencies.
- 3.4 Any complaint or service call from the beneficiary has to be attended within 48 hours and problems has to be rectified within 7 days.

### **4. Role of ANERT**

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- 4.1 Empanelment of agencies for the supply and installation of solar water heaters
- 4.2 Listing of components to be used for installation, based on the technical compliance and service facility.
- 4.3 Listing of agencies with price for the solar water heaters as per requirement.
- 4.4 Monitoring the performance of agencies based on supply, installation and maintenance.
- 4.5 Co-ordinating with Agency and LSG institutions for smooth and speedy implementation of the programme.

## I.D – Bidding Procedure

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### 5. Bid document

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- 5.1 Bid documents can be downloaded from the website of ANERT ([www.anert.gov.in](http://www.anert.gov.in)). The bid document is in 3 parts, and has to be submitted in 3 separate envelopes as specified herein.

### 6. Bid submission

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- 6.1 Bids shall be submitted in three envelopes named:

- i) Envelope A - Pre-qualification
- ii) Envelope B - Technical Bid

Envelope B may consists of

Technical bid for Empanelment for Solar Water Heaters

- iii) Envelope C- Financial offer

Envelope –C may contain,

Financial offer for Empanelment for Solar Water Heaters

- 6.2 If the bid does not contain the offer in 3 separate sealed envelope; Envelope - A, Envelope-B and Envelop C, the bid will be summarily rejected.

- 6.3 Wherever necessary, the formats given may be prepared in separate sheets and attached with the submission. These attachments should be clearly indicated (with flags) in the main document (downloaded form).

- 6.4 Envelope –A (Pre-qualification), Envelope-B (Technical bid), Envelope-C ( Financial Offer) should be submitted separately in respective covers, serially numbered and tagged or filed as a bundle with Index and flagged in order, as detailed in next section.

## 7.Envelopes and contents

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### 7.1 Envelope-A

Envelop A shall contain.

1. Covering letter for submission as per format (given in page 17) on firm's letter head- **Flag-1**
2. Application fee of Rs.50,000/-(Rupees Fifty Thousand only) as DD in favour of Director ANERT payable at Thiruvananthapuram.- **Flag-2**
3. Attested copy of proof of the bidder being approved Channel Partners in solar water heating systems under off grid and decentralized solar thermal applications under JNNSM. **Flag-3**
4. Attested copy of valid GST registration certificate. –**Flag-4**
5. Power of attorney for the authorized signatory to sign the documents.- **Flag-5**
6. Attested copy of registration certificate issued by registrar of companies or other competitive authority under which the firm is registered. **Flag-6**
7. Part-I of the document downloaded from website, duly filled, signed and sealed by the bidder on all pages. **Flag-7**
8. Undertaking by the Agency in stamp paper worth Rs.200/- as per Annexure I-B **Flag-8**
9. List of installed systems ( Annexure I-C and I-D ) along with certificate regarding satisfactory working from the customer **Flag- 9**
10. Documentary evidence such as MoU /Agreement with service centre (Annexure- I-F). **Flag 10**
11. Addendum to the EoI document, if any, sealed and signed by the bidder on all pages. **Flag-11**
12. Audited statements of accounts for last two years (2015-16 & 2016-17) has to be attached as **Flag-12**

The documents attached should be arranged in the above order with flags to identify the document easily. All the pages should be numbered serially.

### 7.2 Envelope-B

**Envelope-B** shall contain:

1. Technical bid submission form (Format II-A) fully filled up. **Flag-1**
2. Technical compliance certificates/ test reports for Solar Water Heaters (ETC) (as per ANNEXURE II-B). Certificates/test report should be complete and valid as on date of submission **Flag-2**



3. Technical compliance certificates / test report for Solar Water Heaters (FPC) (as per ANNEXURE II-B). Certificates should be complete and valid as on date of submission. **Flag- 3**
4. Part-II of the downloaded bid document duly filled, signed and sealed by the bidder on all pages. **Flag-4**

### 7.3 Envelope-C

Envelop -C shall contain price offers in Format- III- A & Format- III- B

#### Superscription on envelopes

<b><u>Envelope - A- Pre-Qualification</u></b>	
<i>Notification No. ANERT-Tech/62/2018-PO(JR) Dated 28th March 2018</i>	
<i>Invitation of Expression of Interest for Empanelment of Agencies for Supply &amp; installation of Solar Water Heaters in Kerala through Local Self Government (LSG) projects.</i>	
From <i>[name and address of bidder]</i>	To DIRECTOR, ANERT, Vikas Bhavan(PO) , Thiruvananthapuram Pin-695 033

<b><u>Envelope - B- Technical Bid(Solar Water Heaters Programme)</u></b>	
<i>Notification No. ANERT-Tech/62/2018-PO(JR) Dated 28th March 2018</i>	
<i>Invitation of Expression of Interest for Empanelment of Agencies for Supply &amp; installation of Solar Water Heaters in Kerala through Local Self Government (LSG) projects.</i>	
From <i>[name and address of bidder]</i>	To DIRECTOR, ANERT, Vikas Bhavan (PO) , Thiruvananthapuram Pin-695 033

**Envelope -C -Financial Bid for Solar Water Heaters (ETC & FPC)**

*Notification No. ANERT-Tech/62/2018-PO(JR) Dated 28th March 2018*

*Invitation of Expression of Interest for Empanelment of Agencies for Supply & installation of Solar Water Heaters in Kerala through Local Self Government (LSG) projects.*

From

*[name and address of bidder]*

To

**DIRECTOR, ANERT,  
Vikas Bhavan(PO) ,  
Thiruvananthapuram  
Pin-695 033**

- 7.4 All these three sealed covers shall be put in another cover and sealed, with superscription as follows:

**Empanelment of solar water heaters**

*Notification No. ANERT-Tech/62/2018-PO(JR) Dated 28th March 2018*

*Invitation of Expression of Interest for Empanelment of Agencies for Supply & installation of Solar Water Heaters in Kerala through Local Self Government (LSG) projects.*

From

*[name and address of bidder]*

To

**DIRECTOR, ANERT,  
Vikas Bhavan(PO) ,  
Thiruvananthapuram  
Pin-695 033**

# I.E – Empanelment Procedure

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## 8. Steps of empanelment-General

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- 8.1 Expression of interest from pre-qualified agencies (agencies that satisfy prequalification criteria) as decided by ANERT will be invited.
- 8.2 The notification for expression of interest will be made available on ANERT website.
- 8.3 The offers received up to 12 noon on 30<sup>th</sup> April 2018 will be considered for empanelment.
- 8.4 The qualified agencies shall enter into an agreement (on Kerala Stamp Paper) with ANERT agreeing to implement projects in Kerala including service facility.
- 8.5 For deposit works executed by ANERT, separate price offers may be invited based on the site specific requirements. The list finalized by this empanelment process based on the technical qualification will be the base list for this process.

## 9. Steps for empanelment –ANERT/LSG programmes

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- 9.1 In addition to 8 above, following steps are involved in the empanelment of agencies for undertaking projects initiated by ANERT/LSG with Central Financial Assistance/ State Financial Assistance.
- 9.2 The price offers for the projects has to be submitted by the agencies in the prescribed format.
- 9.3 The maximum price for a configuration is listed below.

### Solar Water Heater (ETC)

Capacity LPD	Maximum price(Rs)
100	18,000
200	28,000
300	37,000
500	54,000
1000	99,000

The price quoted by the bidder for each configuration shall be all inclusive of taxes (GST) and duties, and shall cover the pre- installation survey report, transportation, handling charges, supply and commissioning of a standard installation,(Cold water pipe line 10 m and hot water pipe line 15 m ). If the structure requires additional customization for installation on a roof other than a flat roof, or the pipe lining exceeds 10 meter for cold water and 15 meter for hot water the expense may be collected additionally after convincing the beneficiary.

## **Solar Water Heater (FPC)**

Capacity LPD	Maximum price(Rs)
100	30,000
200	54,000
300	74,000
500	1,12,000
1000	1,95,000

The price quoted by the bidder for each configuration shall be all inclusive of taxes (GST) and duties, and shall cover the pre-installation survey report, transportation, handling charges, supply and commissioning of a standard installation, (Cold water pipe line 10 m and hot water pipe line 15 m ). If the structure requires additional customization for installation on a roof other than a flat roof, or the pipe lining exceeds 10 meter for cold water and 15 meter for hot water the expense may be collected additionally after convincing the beneficiary.

## **10. General Terms and Conditions**

- 10.1 Director, ANERT reserves the right to add, remove, and modify any of the terms and conditions contained herein.
- 10.2 All the lists/ announcements including dates related to the empanelment process, will be published on ANERT's website ([www.anert.gov.in](http://www.anert.gov.in)) and ANERT will not be responsible for delays or non-receipt of individual communications in this regard, if any.
- 10.3 The Registration of Empanelled Agencies for the installation of solar water heaters all over Kerala shall be invited by ANERT and a list of qualified firms will be published, and will be intimated to Local Self Government Institutions along with the approved price list.
- 10.4 The Empanelment is mainly based on District wise/ state wise. Agency should have at least one service centre for two adjacent districts in Kerala (even though a service centre in every District would be appreciated). Name, address and contact no. of district wise service Technician / Engineer is required for empanelment in the concerned District.
- 10.5 The beneficiary / Govt. dept. shall have the freedom to select an Agency of their choice from the list provided from ANERT for installation of the solar water heaters.
- 10.6 All the Empanelled Agencies should submit the details of installation in the prescribed format to concerned District ANERT office and ANERT HQ before 5th of every month. Renewal of Empanelment registration for every two years should be done based on this report.

# I F- Eligibility Criteria

## 11. Pre-qualification Criteria

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- 11.1 For participating in Solar Water Heater Programme the agency should be an approved channel partner of MNRE with valid date. *Attested copy of certificate has to be submitted.*
- 11.2 The Agency should have a **valid GST registration certificate in Kerala** -*Attested Copy has to be enclosed.*
- 11.3 Power of attorney for the signatory authorised to sign the tender document and future documentation during implementation process has to be submitted along with the EoI. The documents signed by this authority only will be accepted for Expression of Interest and other documents submitted under this project. If the agency desire to change this authority fresh power of attorney has to be submitted. The scanned copy of signature of authorised signing authority will be published in ANERT website for the reference of the beneficiaries.
- 11.4 Registration certificate of the firm which is issued by registrar of companies or other competent authority under which firm is registered has to be submitted. The details of the bidder should match with registration certificate. *Copy of this certificate has to be submitted.*
- 11.5 The Agency should submit the application fee of Rs.50,000/- (Rupees Fifty Thousand only/- non refundable) as DD in favour of Director ANERT payable at Thiruvananthapuram.
- 11.6 The experience and financial criteria for solar water heaters programme are listed below for the empanelment.
- 11.7 Only offers that meet the above criteria shall be considered for technical evaluation.

## 12. Experience Criteria

**Table 12-1: Solar Water Heater (ETC)**

Sl.No	Capacity of the Solar collector	Experience in Solar Water Heater (ETC)
1	15,000 LPD	Bidder must have supplied/ installed at least 15,000 LPD capacity as on date of submission of documents. Copy of work order and Bills/ Certification from the purchaser regarding the execution of order should be submitted as a proof of executing the supply.

**Table 12-2: Solar Water Heater (FPC)**

Sl.No	Capacity of the Solar collector	Experience in Solar Water Heater (FPC)
1	5000 LPD	Bidder must have supplied/ installed at least 5000 LPD capacity as on date of submission of documents. Copy of work order and Bills/ Certification from the purchaser regarding the execution of order should be submitted as a proof of executing the supply.

## 13.Financial Criteria

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- 13.1 The system installed should be insured against possible damages due to natural calamities, theft, burglary, and mechanical breakdown etc. During the warrantee period and the cost for the same has to be included in the financial bid of the agency. The documentation in this regard has to be done by the agency.
- 13.2 The price quoted by the bidder for each configuration shall be all inclusive of taxes (GST) and duties, and shall cover the pre-installation survey report, transportation, handling charges, supply and commissioning of a standard installation,(Cold water pipe line 10 m and hot water pipe line 15 m ). If the structure requires additional customization for installation on a roof other than a flat roof, or the pipe lining exceeds 10 meter for cold water and 15 meter for hot water the expense may be collected additionally after convincing the beneficiary.
- 13.3 Empanelment of agencies will be made for solar water heaters separately (ETC & FPC). For a particular Solar Water Heater, **the agencies who quoted less than or equal to maximum price will be considered.**
- 13.4 For other works executed by ANERT, separate price offers will be invited based on the site specific requirements. The list finalised by this empanelment process based on the technical qualification will be the base list for this process.
- 13.5 The collection of the beneficiary share of the system cost and the warranty agreement for the system shall be between the beneficiary and the Empanelled Agency that supplied, installed and commissioned the system. ANERT will not be responsible for delays in payment of beneficiary share by the beneficiary.
- 13.6 The Empanelled Agency shall not claim any subsidy/incentive from MNRE/ any other organisation for the projects sanctioned by ANERT. An undertaking to this effect has to be submitted with each completion report/ subsidy claim. ANERT shall submit all the subsidy claim details under this programme to MNRE, and also publish the same on ANERT website.

# ANNEXURE I A - Format for Covering Letter

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Sir,

I/We hereby express my/our interest to be included as an Empanelled Agency for the installation Solar Water Heater in Kerala, as per the terms and conditions and the technical specifications, decided by Agency for Non-conventional Energy and Rural Technology (ANERT) and Ministry of New and Renewable Energy (MNRE). The work allotted to me/us will be completed within the time frame as per the work order from the beneficiary/ Government/any other agency.

I am/we are remitting herewith the required amount of Rs. 50,000/- (Fifty thousand only) as application fee as DD No. .... Dated .....drawn on ..... bank in favour of Director, ANERT payable at Thiruvananthapuram.

Yours faithfully

Place:

Signature

Name

Date:

Designation

(Office Seal)

*(This letter to be submitted on the official letter head of the Agency, signed by the authorised signatory.)*



# Annexure I B – Undertaking by the agency

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(In stamp paper worth Rs. 200/- (Rupees Two hundred only))

I ..... (Name, Designation) authorised signatory of  
..... (Name and full  
address of the MNRE channel partner/Public sector undertaking) hereby undertake that

1. The solar water heater supplied/installed in Kerala shall be as per technical specification stipulated by ANERT/ MNRE. The installation shall be done as per the recommended installation practices and using components as per the prescribed Technical Specifications.
2. The Solar water heater supplied and installed should be given warranty for 5 years.
3. The price quoted by the bidder for each configuration shall be all inclusive of taxes (GST) and duties, and shall cover the pre-installation survey report, transportation, handling charges, supply and commissioning of a standard installation, (Cold water pipe line 10 m and hot water pipe line 15 m ). If the structure requires additional customization for installation on a roof other than a flat roof, or the pipe lining exceeds 10 meter for cold water and 15 meter for hot water the expense may be collected additionally after convincing the beneficiary.
4. At least one service centre will be maintained for two districts. List of service centres provided are true and correct.
5. No alteration in the downloaded document is made. If any alterations are detected at any stage, my offer is liable to be rejected.
6. The rate of solar water heater quoted in LSG institutions, Government departments and other beneficiaries will not exceed the approved rate of ANERT.
7. All the above terms and conditions are acceptable to me/us.

Date

Signature of the authorised signatory

Name

Designation

(Office Seal)

## Annexure I- C – Details of Solar Water Heater (ETC) installed

Sl. No.	Address in Full	Mobile/ Land Phone No.	Email ID	Nos. of systems installed	Capacity of the system installed
Total					

It is certified that the details furnished above are true and correct to my knowledge and belief and all the systems are installed by our agency.

Date

Signature of the authorised signatory

Name

Designation

(Office

Seal)

## Annexure I- D –Details of Solar Water Heater (FPC) installed

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Sl. No.	Address in Full	Mobile/ Land Phone No.	Email ID	Nos. of systems installed	Capacity of the system installed
<b>Total</b>					

It is certified that the details furnished above are true and correct to my knowledge and belief and all the systems are installed by our agency.

Date

Signature of the authorised signatory

Name

Designation

(Office

Seal



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## PART-II

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**Agency for Non-conventional Energy & Rural Technology**

Vikas Bhavan (PO), Thiruvananthapuram – 695 033, Kerala  
Phone: (91-471) 2334122, 2334124, 2331803(office), 2329854 Fax: (91-471)2329853

**Web:** <http://www.anert.gov.in>

**email:** [director@anert.in](mailto:director@anert.in)

# II A - Technical Specification of Solar Water Heaters

## **14. Technical Qualification Criteria**

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- 14.1 The system installed should conform to the minimum technical requirements by ANERT (undertaking by the agency to be submitted as per Annexure I-B).
- 14.2 All the components of the system should comply with the minimum technical requirements of the ANERT. Technical compliance certificate/ Test report from the approved laboratory of MNRE/ BIS has to be submitted. The certificate should be valid as on the date of submission.
- 14.3 The Agency should have completed the installation of at least an aggregated minimum capacity as per the experience criteria (Table 12-1, 2) for each category of empanelment. The list of installed systems should be provided in the enclosed format (Annexure I-C & I-D).
- 14.4 The manufacturer shall supply all technical literature and drawing considered necessary for the installation, operation and maintenance of the equipment and its fittings. These shall essentially include:-
- a) Drawing showing over all dimensions and all other details including sectional view of the equipments.
  - b) List of parts with reference to nos.
  - c) Manual (in Malayalam & English) of instructions for the operation, maintenance and repairs/equipment and special fittings, if any.
  - d) Checking methods and schedule for cleaning the system.
  - e) Any other relevant technical data which would be of assistance for efficient operation and maintenance of the system including energy savings etc.
- 14.5 All the elements of the system which fail due to manufacturing defect within the period of guarantee shall be replaced by the tenderer free of cost.

## 15. Technical specifications of Solar Water Heater (ETC)

Sl. No	Component	Description
1	Evacuated Tube Collector *	Evacuated Tube Collector is made of double layer borosilicate glass tube evacuated providing insulation. The outer wall of the inner tube is coated with selective absorbing material.
2	Storage tank	<b>Tank material:</b> SS 304 or 316 grade <b>Tank thickness:</b> Minimum thickness will be 0.5 mm when using argon arc or metal inert gas for welding & 0.8 mm when using other type of welding. No leakage under any kind of negative or positive pressure of water will be ensured. Thermal insulation of storage tank will be minimum 50 mm thick CFC free PUF having density of 28-32 kg/ cu.m for 100 & 200 LPD systems and 100mm thick Rockwool of 48 kg per cu. m for other systems.
3	Cold water pipe	10 m length of Rigid PVC pipe.
4	Hot water pipe	15 m length of CPVC pipe.
5	Structure	Of non-corrosive material or have corrosion resistant protective collectors, piping, tanks etc. coating. They will be strong enough to sustain their pressure during the lifetime of system.

\*The minimum collector area for the evacuated tubes of any capacity of solar water heating system shall be as per the following table.

SL.No	System Capacity (LPD)	Collector area (m <sup>2</sup> )
1	100	1.5
2	200	3.0
3	300	4.5
4	500	7.5
5	1000	15

**The no. of tubes for any capacity can be calculated as under.**

No. of tubes = Minimum collector area as per above table / Area of single tube

The area of single tube can be calculated as follows.

Area of tube =  $\pi \times$  Radius of cover glass tube (O.D. /2) x length of tube

Minimum no of tubes required for the system can be calculated as per following example:

For a system of 100 lpd, cover glass tube diameter 47 mm & length 1500 mm

$$\begin{aligned} \text{Area of tube} &= \pi \times 47 \div 2 \times 1500 \\ &= 110685 \text{mm}^2 \\ &= 0.110 \text{m}^2 \end{aligned}$$

$$\begin{aligned} \text{No. of tubes} &= 1.5 \div 0.110 \\ &= 13.63 \end{aligned}$$

Rounding of calculated no. of tubes should be done on higher side. Therefore, minimum no. of tubes required in the system is 14.

## 16. Technical specifications of Solar Water Heater (FPC)

Sl. No	Component	Description
1	Flat Plate Collector	ISI mark (2 sq. m. absorber area for 100 liter tank capacity system.
2	Storage tank	<b>Tank material:</b> SS 304 or 316 grade <b>Tank thickness:</b> Minimum thickness will be 0.5 mm when using argon arc or metal inert gas for welding & 0.8 mm when using other type of welding. No leakage under any kind of negative or positive pressure of water will be ensured. Thermal insulation of storage tank will be minimum 50 mm thick CFC free PUF having density of 28-32 kg/ cu.m for 100 & 200 LPD systems and 100mm thick Rockwool of 48 kg per cu. m for other systems.
3	Cold water pipe	10 m length of Rigid PVC pipe.
4	Hot water pipe	15 m length of CPVC pipe.
5	Structure	Of non-corrosive material or have corrosion resistant protective collectors, piping, tanks etc. coating. They will be strong enough to sustain their pressure during the lifetime of system.



# ANNEXURE II.A – Technical bid Submission form for solar water heaters.

(to be submitted by all agencies)

1.	Name of the bidder as in registration certificate (Copy of registration certificate to be enclosed)		Page no. in the Offer document
2.	Address in full		Page no. in the offer document
3.	Contact Details	Mobile	
		Land Phone	
		Fax No	
		Email	
4.	Bank account details of the Bidder	Account No	
		Name of account holder	
		Bank	
		Branch Name	
		Address of the bank	
		IFS code	
5.	Name of the authorized signatory (Power of attorney to be enclosed)		Page no. in the offer document
6.	Designation of the authorised signatory		
7.	Service centres in Kerala. There should be at least one service centre for two districts. (Undertaking in stamp paper worth Rs.200/has to be submitted)	Kasaragod , Kannur	
		Wayanad, Kozhikode	
		Malappuram, Palakkad	
		Thrissur, Ernakulam	
		Kottayam, Idukki	
		Alappuzha, Pathanamthitta	
		Trivandrum, Kollam	
		Page no. in the offer document	

## ANNEXURE II.B - Details of System Components for Solar Water heaters.

### 17. Solar water heater (ETC)

17	<b>Solar water heater (ETC)</b>			
	<u>Collector</u>	1. Make		Page no. in the offer document
		2. Model No		
		3. Capacity		
		4. Test Certificate No.		
		5. Name of testing agency		
		6. Validity Up To		
	<u>Storage Tank</u>	1. Make		Page no. in the offer document
		2. Model No		
		3. Capacity		
		4. Test Certificate No.		
		5. Name of testing agency		
		6. Validity Up To		

## 18. Solar water heater (FPC)

18	Solar water heater (FPC)			
	<u>Collector</u>	1. Make		Page no. in the offer document
		2. Model No		
		3. Capacity		
		4. Test Certificate No.		
		5. Name of testing agency		
		6. Validity Up To		
	<u>Storage Tank</u>	1. Make		Page no. in the offer document
		2. Model No		
		3. Capacity		
		4. Test Certificate No.		
		5. Name of testing agency		
		6. Validity Up To		

I have read the technical requirements, warranty conditions and the details furnished above are true and correct and complete to my knowledge and belief. All the details furnished are supported by documentary evidence.

Date

Signature of the authorised signatory

Name  
Designation

(Office Seal)

NOTE: If any more makes and models of system components are proposed, extra pages may be used.

Invitation of Expression of Interest for Empanelment of Agencies for Supply & installation of Solar Water Heaters in Kerala through Local Self Government (LSG) projects.

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## **PRICE SHEDULE**

***Notification No. ANERT-Tech/62/2018-PO (JR)***

**Dated 28<sup>th</sup> March 2018**

## **PART-III**

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Submitted by (name and address of bidder)	:
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**Agency for Non-conventional Energy & Rural Technology**

Vikas Bhavan (PO), Thiruvananthapuram – 695 033, Kerala

Phone: (91-471) 2334122, 2334124, 2331803 (office), 2329854 Fax: (91-471) 2329853

**Web:** <http://www.anert.gov.in>

**email:** [director@anert.in](mailto:director@anert.in)

### III-A Price schedule (C)

#### (a) Price offer for Solar Water heater (ETC) (Format- III- A)

- 1. Name of the Agency :
- 2. Address in Full :

#### Solar Water heater (ETC)

Capacity in LPD	Price/ Unit all-inclusive in Rupees	
	In digits	In words
100		
200		
300		
500		
1000		

- 1. The price quoted by the bidder for each configuration shall be inclusive of cost of pre-installation survey report, transportation, handling, supply and commissioning of a standard installation and cost of insurance, taxes if any and including 5 year warranty etc.
- 2. The price quoted is applicable for any location in all 14 districts of Kerala.

Date

(Office Seal)

Signature of the authorised signatory

Name

Designation

Invitation of Expression of Interest for Empanelment of Agencies for Supply & installation of Solar Water Heaters in Kerala through Local Self Government (LSG) projects.

Notification No. ANERT-Tech/62/2018-PO (JR)

Dated 28<sup>th</sup> March 2018

**(b) Price offer for Solar Water heater (FPC) (Format III-B)**

1. Name of the Agency :  
2. Address in Full :

**Solar Water heater (FPC)**

Capacity in LPD	Price/ Unit all-inclusive in Rupees	
	In digits	In words
100		
200		
300		
500		
1000		

1. The price quoted by the bidder for each configuration shall be inclusive of cost of pre-installation survey report, transportation, handling, supply and commissioning of a standard installation and cost of insurance, taxes if any and including 5 year warranty etc.
2. The price quoted is applicable for any location in all 14 districts of Kerala.

Date

(Office Seal)

Signature of the authorised signatory

Name

Designation