

India Trade Promotion Organisation

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TENDER DOCUMENT

180/ITPO/Engg./Expo-2017/Astana/2016-17

INDIA TRADE PROMOTION ORGANISATION

ITPO is inviting **online bids** through two bid system from the interested companies/organizations for undertaking “**Conceptualization, planning, designing of India Pavilion on the basis on Main Theme & Sub-theme of Expo’2017 including utility services, dismantling after the expo, maintenance during Expo period etc of India Pavilion at Expo’2017, Astana – Kazakhstan (June 10 to Sep 10, 2017)**”. **Manual bids shall not be accepted.**

- Estimated Cost: Rs. 7.50 Crore
- Earnest Money: Rs. 15.00 Lakh
- Time for completion: As per tender document
- Cost of Tender: Rs. 1575.00 (i/c 5% VAT)

a. The tender documents are available on our website www.indiatradefair.com(for reference only) & www.eprocure.gov.in and same can be down loaded. However, the documents required such as two DDs towards Cost of Tender and Earnest money (Demand Draft should be in favour of India Trade Promotion Organisation, payable at New Delhi) should be deposited in Room number 109 before the close of time for submitting the e-tender.

b. Tender documents may be downloaded from ITPO’s web site www.indiatradefair.com (for reference only) and CPPP site <https://eprocure.gov.in/eprocure/app> as per the schedule as given in CRITICAL DATE SHEET as under.

INDICATIVE CRITICAL DATE SHEET

Published Date	12/07/2016
Pre-bid Meeting Date	19/07/2016 at 11.00 AM
Bid Document Download Start Date	13/07/2016
Bid Submission Start Date	13/07/2016
Bid Submission End Date	26/07/2016 up to 3.00 PM
Bid Opening Date	27/07/2016 at 3.30 PM
Date of Presentation	02/08/2016 at 3.00 PM

c. Bids shall be submitted online only at CPPP website: <https://eprocure.gov.in/eprocure/app>. Tenderers/Contractors are advised to follow the instructions provided in the ‘Instructions to the Contractors/ Tenders for the e-submission of the bids online through the Central Public Procurement Portal for e-Procurement at <https://eprocure.gov.in/eprocure/app>’. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

d. Not more than one tender shall be submitted by one contactor or contractors having business relationship. Under no circumstance will father and his son(s) or other close relations who have business relationship with one another (i.e when one or more partner(s)/director(s) are common) be allowed to tender for the same contract as separate competitors. A breach of this condition will render the tenders of both parties liable to rejection.

e. Tenderers who have downloaded the tender from the **ITPO's web site www.indiatradefair.com** and Central Public Procurement Portal (CPPP) website <https://eprocure.gov.in/eprocure/app>, **shall not modify the tender form including downloaded price bid template in any manner.** In case if the same is found to be tempered/ modified in any manner, tender will be completely rejected and EMD would be forfeited and tenderer is liable to be banned from doing business with ITPO in future.

f. Intending Tenderers are advised to visit again ITPO website www.indiatradefair.com and CPPP website <https://eprocure.gov.in/eprocure/app> at least 3 days prior to closing date of submission of tender for any corrigendum / addendum/ amendment.

EMD Payment & Tender cost:

Earnest Money Deposit & tender cost is to be deposited electronically by NEFT/RTGS in the account of ITPO at the below mentioned details or DD in favour of ITPO payable at New Delhi. Bidders are required to submit the details of EMD/ Tender cost payment at the time of Bid Preparation.

BANK Details for EMD Payment through NEFT/RTGS:

Name of the Beneficiary	:	India Trade Promotion Organisation
Name of the Bank	:	HDFC BANK LIMITED
Branch Address	:	G-3/4, SURYA KIRAN BUILDING. 19, KASTURBA GANDHI MARG, NEW DELHI - 110001
Account No.	:	00031110005078
Type of Account	:	Saving
IFGSC Code	:	HDFC 0000003
PAN NO. (ITPO)	:	AAAT12955C

The Hard Copy of original instruments in respect of earnest money and cost of tender, must be delivered to **S. K. Gupta, Manager (Civil)**, Room No. 141, India Trade Promotion Organisation, Pragati Bhawan, Pragati Maidan, New Delhi – 110001 (India) on or before bid opening date/time as mentioned in critical date sheet. Tenderers shall likely to be liable for legal action for non-submission of original payment instrument like DD/RTGS etc., against the submitted bid. Bids will be opened as per date/time as mentioned in the **Tender Critical Date Sheet**. After online opening of Technical-Bid the results of their qualification as well Price-Bid opening will be intimated latter.

“Submission of Tender”

The tender shall be submitted online in Two part”, viz., technical bid and Financial bid.

All the pages of bid being submitted must be signed wherever required, and sequentially numbered by the bidder irrespective of nature of content of the documents before uploading. The offers submitted by Telegram/Fax/email shall not be considered. No correspondence will be entertained in this matter.

Technical Bid

The following documents are to be furnished by the Contractor along with **Technical Bid** as per the tender document (As applicable):

- i) Scanned copy of appropriate value of valid registration certificate, PAN No with TDS certificate as per the Tender documents.
- ii) Scanned copy of up to date of last quarter of Income-tax / VAT tax return / latest VAT Clearance Certificate, TIN No, Certificate / Affidavit of partnership firm.
- iii) Scanned copy of audited Balance sheet of last three years.
- iv) Scanned Copy of Attested / True copy of Partnership deed as per the tender documents.
- v) Scanned copy of documents like Earnest Money Deposit & tender cost.
- vi) Scanned copy of Tender Acceptance Letter
- vii) Joint Venture with the Agency empanelled/ approved by Expo2017, Astana.
- viii) Scanned copy of experience certificate along with TDS certificate. All amount rounded off to a convenient full figure, during the last 7 years ending on the last day of the month previous to the one in which the tenders are invited

Financial Bid

- (a) Price bid undertaking
- (b) Schedule of price bid in the form of BOQ_XXXX .xls./ pdf format

FINANCIAL BID UNDERTAKING

From: (Full name and address of the Bidder) _____

To,

Dear Sir/Madam,

1. I submit the Price Bid for **“Conceptualization, planning, designing of India Pavilion on the basis on Main Theme & Sub-theme of Expo’2017 including utility services, dismantling after the expo, maintenance during Expo period etc of India Pavilion at Expo’2017, Astana – Kazakhstan (June 10 to Sep 10, 2017)”** and related activities as envisaged in the Bid document.

2. I have thoroughly examined and understood all the terms and conditions as contained in the Bid document, and agree to abide by them.

3. I offer to work at the rates as indicated in the price Bid inclusive of all applicable taxes except Service Tax.

Authorized Signatory
(Signature of the Authorized Person)

Instructions for Online Bid Submission:

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.

REGISTRATION

- 1) Bidders are required to enrol on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “**Online bidder Enrolments**” on the CPP Portal which is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.
- 5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- 6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

- 1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.
- 4) Bidder should prepare the EMD/ tender cost as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- 5) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
- 6) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

- 7) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 8) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 9) Upon the successful and timely submission of bids (ie after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 10) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

ASSISTANCE TO BIDDERS

- 1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date:

To,

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender / Work: -

Dear Sir,

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely: _____

as per your advertisement, given in the above mentioned website(s).

2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organisation too has also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. I / We do hereby declare that our Firm has not been blacklisted/ debarred by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organisation shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

Eligibility Criteria:

The eligibility criteria for selection of the agency will be as under:

1. The agency should be an independent Indian registered company under Companies Act having been incorporated more than 5 years as on date (attach proof).
2. Joint Venture with the Agency empanelled/ approved by Expo'2017, Astana.
3. The agency should be a multi-disciplinary construction/ design house that has diversified interest in working across sectors. Agency need to have a strong design and aesthetic sense with comprehensive ability to conceive and execute design ideas.
4. The agency having experience in Designing, executing and maintaining "International pavilions i/c India Pavilion" at World Expo's in the past.
5. The agency must have an average annual turnover of Rs. 2.25 Crore in last three financial years (Copies of Balance sheets, duly attested by a practicing CA to be attached).
6. Must have experience of Designing and supervising the Execution of the final design approved by the Special Committee in India with regard to the overall look and feel.
7. The Agency should not have been blacklisted by any Government of India organisation in the past. In all such cases, the tender would be rejected and their earnest money so deposited would be forfeited
8. The agency/company and its associates/ JV should not have been involved in any kind of litigation, legal cases or ever been blacklisted by any government or private agency or have any pending government investigation against them either directly or indirectly.
9. Only those agency shall be considered for technical evaluation who have satisfactorily completed three similar works each costing not less than 40% of the estimated cost or two similar works each costing not less than 60% of the estimated cost or one similar work costing not less than 80% of the estimated cost of the work for big and reputed Organisations, Government Undertakings and other Govt. Departments. All amount rounded off to a convenient full figure, during the last 7 years ending on the last day of the month previous to the one in which the tenders are invited. Experience certificates of the work should be supported with TDS certificates.

The Creative/production Agency would be appointed on a project basis for the said project.

PRE-BID MEETING ABOUT THE PROJECT

A Pre-Bid meeting will be held on 19/07/2016 at 1100 Hours in the Conference Room of Pragati Bhawan, Pragati Maidan, New Delhi-110001 for clarifications and suggestions if any about the project.

TECHNICAL BID EVALUATION (SEGREGATED TYPE)

As stated above, the agency has to follow two bid systems where the technical bid and financial bid shall be evaluated separately.

The tendering evaluation shall be done on weight-age with 70% to Technical Evaluation and 30% to financial evaluation.

The technical bid evaluation shall be further evaluated in two parts viz;

- Eligibility criteria documents as per tender document with weight-age . 70 marks. **(A)**
- Audio/ Video Presentation of the theme by the agency selected after securitizing of eligibility documents mentioned in the tender with weight-age . 30 marks. **(B)**

(A) During the technical evaluation stage, each bidder shall be assigned different marks out of a total of 70 marks, as per the criteria specified below:

(i) Number of years in Operations of the Company/ Agency	Max 20 Marks
(a) Last 5 years	05 Marks
(b) 5-10 years	10 Marks
(c) More than 10 years	20 Marks
(ii) Turnover (Last Financial Year)	Max. 20 Marks
a) 225 to 250 Lakhs	10 Marks
b) 251 to 300 Lakhs	12Marks
c) 301 to 400 Lakhs	15 Marks
d) 401 Lakhs and above	20Marks
(iii) Designing and execution of work in International Exhibitions	Max. 30 Marks
a) Last 5 years	10 Marks
b) 5-10 years	20 Marks
c) More than 10 years	30 Marks

A Bidder should secure mandatorily a minimum of 70% marks (i.e. 49 marks out of total 70 marks) in Technical Evaluation in order to be a qualified bidder for being eligible for inviting them for presentation before the selection committee.

(B) During the theme presentation stage, each bidder shall be assigned a total of 30 marks. A Bidder should secure mandatorily a minimum of 70% marks (i.e. 21 marks out of total 30 marks) in presentation stage.

The agency has to make the presentation with 3D images/ Revit Architecture showing all details and elevations including 'walk through' drawings, not less than 90 Seconds, of India Pavilion based on the main theme and sub theme. For preparing and showing the presentation, the agency shall be paid Rs. 1, 00,000/- (Rupees one lakh only). It is also noted that the amount shall be paid to only those agency who qualified for opening of their financial bid after presentation. In case the Agency does not submit details as asked above or not to the required level, nothing shall be paid on this account to the agency. Decision of ITPO in this regard shall be final.

Technical weight-age and subsequently for opening of financial bids

The total marks obtained by a Bidder in the technical bid (A + B) shall be allocated 70% of technical weight-age and the financial bids shall be allocated 30% of the financial weight-age, and thereby making a total of 100% weight-age for the complete bidding.

Illustration 1 (for Technical Weight-age)

*If a Bidder has secured 80 marks out of the total 100 marks in technical evaluation (A + B), his technical **evaluation value shall be: 56** i.e. {80 x 70%}*

The Bidder shall be required to produce copies of the relevant documents in support for evaluating their Eligibility criteria for being considered during technical evaluation.

The bidder who qualified in the technical evaluation stage shall only be called for making their presentation. ITPO shall intimate the bidders, the date, time/ venue for the **presentation**.

Mere becoming the lowest bidder, prior to financial bid scrutiny will not give any right to the lowest bidder to claim that he is successful in the bidding consideration process. The successful bidder (L-1) shall be decided only after following due procedure:-

FINANCIAL BID EVALUATION AND DETERMINATION OF THE SUCCESSFUL BIDDER

The financial evaluation shall be carried out and financial bids of all the bidders shall be given 30% of weight-age.

The Bidder with the lowest bid Prices (L1) shall be assigned full 30 marks (i.e. 30% x 100) and his total scores of the bid shall be as per **Illustration 2** below:

Illustration 2

*If the Bidder at Illustration 1 is L-1 Bidder and quoted Rs.100/- for being L-1, then his total value shall be **86** i.e. (56 Technical Value + 30 Financial Value)*

The financial scores of the other bidders (i.e. L-2, L-3 and so on) shall be computed as under and as explained at Illustration 3 below:

$$30 \times \text{Lowest Value (L-1 Price)} / \text{Quoted Value (L-2 OR L3)}$$

Illustration 3

If the Bidder at Illustration 1 is L-2 Bidder and he quoted Rs.125, therefore 30% being the weighted value, the financial scores for L-2 shall be computed as under

*30 x 100 (lowest prices-L1) / 125 (quoted prices – L2) = 24 (financial score) Therefore L-2 Bidder shall have total value of **80** (56 Technical Value + 24 Financial Value)*

The Bidders ranking shall be arranged depending on the marks obtained by each of the bidder both in Technical Evaluation and Financial Evaluation.

The Bidder meeting the minimum eligibility criteria and with the **highest marks/ rank** (i.e. the **total** of technical evaluation marks and financial evaluation marks) shall be deemed as the **successful Bidder** and shall be considered eligible L-1 Bidder for further process.

If there is a discrepancy between words and figures, the amount in words shall prevail.

Venue, date & time for presentation:

The bidders will have to make presentation of their Technical Bids on dated 02/08/2016 at 3.00 pm in the Board Room of ITPO; however if there is any change in time and date, the same shall be intimated to the qualified bidders well in time. Weight age to selected Technical Bids and Financial Bids will be decided by the Committee. The weight age to Technical Bid and Financial Bid will be as per TECHNICAL BID EVALUATION (SEGREGATED TYPE)

Condition of Opening of Financial Bids:

1. The Financial Bids will be opened only of those Bidders qualified to Bid as per the Eligibility criteria. In case the Bidder does not qualify as per the Eligibility Criteria, the Bid will summarily be rejected.
2. The information for opening of Financial Bids of only successful Technical Bidders will be communicated separately.
3. If any information furnished by the applicant is found incorrect at a later stage, he shall be liable to be debarred from the tendering /taking up of work in ITPO. The department reserves the right to verify the particulars furnished by the applicant independently.
4. Indian firms should quote in Indian Rupees Only on FOR DESTINATION BASIS. Customs duty/Excise duty excluded price should be quoted as necessary exemption certificate if applicable will be provided. Taxes and levies, if any, should be indicated separately. All relevant information except price should be available in the Techno-Commercial Bid. Detailed Technical literature/data should also be enclosed with the Techno-Commercial Bid for speedy processing.
5. Offers received late, conditional offer and incomplete offers will be summarily rejected.
6. The Officer-in-Charge, ITPO on behalf of CMD does not bind himself to accept the lowest or any other tender, and reserves to himself the right to waive off any formality thereof or reject any or all the tenders received without assigning any reasons thereof.
7. The department reserves the right to reject any prospective application without assigning any reason.

1. TERMS OF REFERENCE

1.1. DEFINITION

For the purpose of the agreement, the following words and expressions shall have the meaning hereby assigned to them except where the context otherwise requires.

1.1.1. -Employerø means the Chairman and Managing Director, ITPO which expression shall unless excluded by or repugnant to the context include Employerø representative.

1.1.2. -Employerø representativesø means the Director, India Pavilion or any other authorized representative of ITPO.

1.1.3. -Agencyø means and herein refers to the Leading company, bidding the tender and his associates including Interior Designers, Architects, Event Managers, Project Management Agency, permitted assigns or successors in office authorized representative.

1.1.4. -Pavilionø shall mean Building, interiors, Display Hall, Façade, utility block, periphery wall/fence i.e. landscaping around.

1.1.5. øApprovalö means approved by ITPO/employerø representative in writing including subsequent confirmation of previous approval and øapprovalö means approval by employerø representative in writing as above said.

1.1.6. **Site: India Pavilion at Expo 2017 inside Parcel C4.4-1 of area 513.18 Sqm at the 1st floor level in two-storey U – Shaped building, Astana-Kazakhstan.**

2. BACKGROUND

Introduction:

Astana has been the capital of Kazakhstan since 1997. From that time, the city has become the political, administrative, business and cultural centre of the country. The city is located on the border of the central and northern territories of Kazakhstan (Akmola Region) on the river Ishim. Total area of the city is 71.0 hectares. Astana is a city of the future that not only accentuates a unique architectural style, but also the inherent openness and hospitality of the capital of Kazakhstan. Astana has a modern urban infrastructure. It is one of Kazakhstan's main transport hubs served by an international airport, rail and bus stations. The city is the second biggest air hub in the country, as well as the biggest rail hub in the Northern Kazakhstan. The city's public transport system comprises buses and taxis. Personal vehicles, alongside public transport, are also an important part of urban transportation.

During the running time of Astana EXPO 2017, from June to September, the average temperature will be 20°C with an average monthly rainfall of 27.3 mm. The site has a convenient access to Astana's city centre, the international airport and the railway station. The Expo Site is also linked with a network of Kazakhstan's inter-city roads to ensure a quick access from all the country.

The main key points of the Expo-2017, Astana are as follows:

SITE AREA:

174 hectares - Exhibition Complex

25 hectares - Exhibition site

149 hectares ó Exhibition precinct: services, facilities and other developments)

TITLE AND TYPE OF EXPO:

EXPO 2017 International Recognised Exhibition in Astana Abbreviated title: Astana EXPO 2017

THEME AND SUB-THEMES

Theme: Future Energy

Sub-themes: -

1. Reducing CO2 emissions
2. Living Energy Efficiency
3. Energy for All

LOCATION: Astana, the capital of the Republic of Kazakhstan

VISITORS: More than five million visits estimated

Duration of the Exhibition: 93 days - 10 June (Saturday) 2017 until 10 September (Sunday) 2017.

Timetable of the Exhibition:

- The Exhibition is open for visitors from 9:00 until 01:00; the last entrance for visitors is at 23:00
- Evening events: 18:00 ó 24:00
- Pavilions Working Hours: from 09:30 until 21:30

2.1. Theme of the Expo 2017

The expo's official theme is "Future Energy", and aims to create a global debate between countries, NGOs, companies and the general public on the crucial question: "how do we ensure safe and sustainable access to energy for all while reducing CO2 emissions?"

Energy has played a key role in the development of the universe and its components: galaxies, stars, planets, species, human society, etc. It is also clear that the development of human civilization would be impossible without energy. For centuries, energy consumption has been opportunistic and often ignored the environmental consequences. Therefore, at the present time mankind is facing severe problems in the energy sector: the reduction of natural resources and environmental pollution.

2.2. Goals of Theme Content Development

Future Energy as the Exhibition theme has been assigned the following key objectives:

- Promoting the best international practices in the field of sustainable energy development.
- Promoting scientific and technological development in the field of clean energy
- Exchanging knowledge about the future energy with all stakeholders: Exhibition participants, academic institutions and the scientific community, industrial enterprises of civil society and other institutions.
- Raising awareness of the opportunities, challenges and demand for the future energy
- Promoting education, training, furthering knowledge through art, culture and entertainment.
- Establishing an innovative platform for distribution of modern technology and knowledge aimed at creating green, healthy and sustainable future
- Positioning Kazakhstan as a country with a rapidly developing economy, committed to a sustainable development model.

All these goals are united by the single strategic objective:

To inform the international community at the national, corporate and individual levels about the need for policies and decisions aimed at promoting sustainable energy in order to ensure the optimal model of the energy future of the planet.

A Layout Plan of the Expo 2017 is enclosed at Annexure-A.

2.3. No. of Countries Participating:

About 200 countries are expected to participate in Expo-2017. Till date 74 states and 14 international organizations have officially confirmed participation in EXPO 2017. The participants include Germany, China, France and most constituents of the European Union & almost all countries of the Arab world, Latin America and Africa.

3. INDIA'S PARTICIPATION:

India is willing to demonstrate innovations in the sphere of green energy. According to the International Renewable Energy Agency, India is among 10 leading states generating alternative energy. The country set a task to increase renewable capacity 5 times to reach 175,000MW by 2022.

The Government has approved ITPO as the nodal agency for India's participation in full period of Expo 2017. CMD, ITPO will be the Commissioner General of India for the event.

India has been allotted an area of 513.18 Sqm inside Parcel C4.4-1 at the 1st floor level in two-storey U – Shaped building.

In accordance with the EXPO guidelines, 80% of gross area allotted to India Pavilion could be used for Display/ Theme, offices, reception etc and balance 20% for commercial activities like putting up a restaurant to serve Indian delicacies and foods and/or set-up shops for selling traditional Indian merchandise.

Each country will be allotted one day to celebrate their national day.

The number of Government Departments like Department of Tourism, Department of Science & Technology, and Department of Space had contributed in India Pavilion in earlier Expos. Considering the theme of Astana Expo, Government departments Ministry of Renewable Energy & others Public Sector Undertaking could also be a part of Expo 2017, Astana, Kazakhstan.

4. EXECUTION OF THE PROJECT

The Government of India has entrusted ITPO with the responsibility of organizing the India Pavilion under the direction and guidance of the Committee of Direction headed by the Commerce Minister.

It is proposed to depict both traditional and modern India in the India Pavilion and relate these to the Theme and Sub-Themes along with the applications for peaceful co-existence with the nature and Technology development.

The presentation would take various forms to include audio-visual, computer generated information, touch screens, models and some areas being manifested through physical depiction working model. Live demonstration of art and culture would be undertaken as decided by ITPO such as in collaboration with Ministry of Renewable Energy etc.

5. **THEMATIC PRESENTATION**

Although the Main Theme of INDIA PAVILION in Expo-2017 is “Future Energy” yet the sub-theme of India pavilion shall be covered with the following proposed **Sub-themes**: -

1. **Reducing CO2 emissions**:- This sub-theme may be further addressed through the following-
 - Scientific Research
 - Cutting edge Technologies
 - Governance
 - Innovative Business models
2. **Living Energy Efficiency**:- This sub-theme may be further expressed through the following-
 - Governance
 - Innovative Business Models
 - Value Change

The complete details on the theme/ sub-themes of Expo 2017 are available in SPECIAL REGULATION NO-1. Also please refer Annex – I (GENERAL MATRIX OF SUB-THEMES AND APPROACHES) on Page –156 to 164 of Expo official Participation Guide. For additional details, the official site of Expo’2017 may be referred i.e.: www.expo2017.org.

The Construction, decoration and the content of display in India Pavilion is to be developed keeping in view of the Theme/Sub-Themes of Expo 2017 as mentioned above and proposed theme and sub-themes of India Pavilion. **(Please refer Annexure A and B (page 47 to 72))**

6.0 **APPOINTMENT OF AGENCY**

ITPO therefore, envisage to appoint a AGENCY who has to UNDERTAKE and EXECUTE the following services during the planning, design, construction, operation, maintenance & dismantling phases:-

- 6.1.1. The selected agency has to plan and design India Pavilion at Expo 2017, Astana, which will be done as per the theme of Expo 2017, Astana, Kazakhstan. To develop and implement systems for management of the project for ensuring quality& to document the entire process and provide expert inputs to ITPO on a weekly basis to ensure quality and timely completion to the satisfaction of ITPO.
- 6.1.2. The selected agency shall prepare innovative conceptual design and drawings as per the theme of India Pavilion based on the main theme/sub-themes of Expo and main theme/sub-themes of India of interacting nature, with State of Art design, using best of globally available technologies and energy efficient technique and should have low maintenance cost and should be developed within allotted budget frame work.

- 6.1.3. The design of India Pavilion and the theme must be very innovative, interactive, and modern and should utilise the latest technologies, and has to be easily communicable to common peoples/visitors.
- 6.1.4 **The selected agency shall indicate the name of the associates such as interior designers, architects, structural designers, etc. of repute based in India and Astana, Kazakhstan, who will be associated with the work. The consultant shall also associate and indicate state the name of the Project Management Agency from Astana, Kazakhstan enlisted by Expo Authorities for project management in Astana, Kazakhstan.**
- 6.1.5. The selected agency will assist in managing the various programmes/functions during the entire period of the Expo.
- 6.1.7. The selected agency will carry out detailed supervision of the project during its implementation as per terms of contract, which shall include:-
- 6.1.7.1. Carrying out all the work of as per the contractual agreements relating to detailed engineering drawings, Construction, Maintenance, Dismantling & Disposal of Pavilion including all services like Civil, Electrical, HVAC, Fire fighting system, AV etc.
- 6.1.7.2. Obtaining approvals/permissions from local bodies/statutory/ Government authorities in relation to the proposed design and the drawings thereof.
- 6.1.7.3. Supervision and monitoring of construction works of interior building structures, interior works, utilities services, horticulture works as approved by the competent authorities and provide expert inputs to ITPO on a weekly basis to ensure quality and timely completion to the satisfaction of ITPO.
- 6.1.7.4. Carrying out maintenance works of pavilion building, utilities services, proper functioning of theme pavilion as per the theme design, proper functioning of commercial sections and other activities as per the design approved by the competent authority.
- 6.1.8. Carrying out of dismantling works/activities of the structures of India Pavilion including interior works/items and services and disposal of all the said dismantled materials from the site, restoration of site in original condition and handing over the site to Expo. Authorities. (I.e. demolition and disposal of structure, interior items, exhibits/items, services like HVAC, Fire Fighting equipments, water and gas supplies etc. complete and restoration of site in original condition will be done by the selected agency).
- 6.1.9. The selected agency shall be fully responsible for the soundness and accuracy of the services designs and the responsibility for the safety of the structure shall be entirely that of the selected agency notwithstanding the approval of the design by the ITPO or Expo. Authorities of Kazakhstan Government. **The selected agency and the concerned associate, if any, shall certify in writing that the structural designs are in accordance with the updated and relevant code of practices in force at the place of construction.**

- 6.1.10. The selected agency shall comply with the prevailing laws and regulations in Astana, Kazakhstan. The selected agency shall indemnify and keep indemnified ITPO against any such claims and against all costs and expenses which become payable by ITPO due to non-compliance of laws and regulations and / non-adherence to the laws by the selected agency or any of its employees at any point of time viz. construction, maintenance, dismantling and services during exposition or thereafter.
- 6.1.11. The inspection and quality of work /activities will also be checked by ITPO Authorities.
- 6.1.12. Any information/details required for planning shall either be obtained by the selected agency through Expo website or collected themselves.
- 6.1.13. No material will be taken over by ITPO after the Expo. The selected agency will take into account the depreciated value of useable materials and disposal charges into account while preparing the bid document for construction works.
- 6.1.14. ***The selection of the agency shall be done on the basis of evaluation of Technical and Financial Bids submitted as follows:***
- 6.1.14.1. ***For Design and evaluation of Technical Presentation/Bid - 70% weight-age.***
- 6.1.14.2. ***Financial evaluation of the Bid - 30% weight-age***
- 6.1.15. The agency shall design all work in conformity with overall rules & regulations of the Expo Authorities. Deviation from norms would not be accepted and any cost incurred on account of violation/deviation to be borne by the agency.
- 6.1.16. ITPO without assigning any reasons, reserves the right to exclude any of the above services at any stage from the scope of work with suitable adjustment in the fee payable to the agency.
- 6.1.17. The agency shall make site inspection, if required, at his own cost to prepare or assess any details including in conceptual stage.
- 6.1.18. The agency shall submit all the drawings and details required in conceptual stage along with the financial bid.
- 6.1.19. Detailed scope of the work is given subsequently.

7. **SCOPE OF WORK.**

The Agency has to render the following services during the following stages;

7.1. **CONCEPTUAL STAGE:-**

7.1.1. **DESIGN OF THEME AND INTERIOR WORKS**

7.1.1.1. The Agency shall prepare layout plan, conceptual design and drawings, broad specifications of India Pavilion including interior works in accordance with the requirements of the Expo Authorities. This will include preliminary architectural drawings and designs showing details of useful areas, theme contents by various means including audio visual, services area, circulation areas, and to provide information in respect of magnitude of work and its components and services. The agency shall prepare innovative conceptual design and drawings as per International Standard, broad specifications of the theme of India Pavilion based on the main theme/sub-themes of Expo2017, Astana.

7.1.1.2. The agency shall also prepare conceptual design and drawings of interior design/decoration of display aids/exhibits of commercial and non-commercial area of display as per main theme and sub-themes, including services, interior landscaping, setting up and upkeep of the interior display aids and the exhibits, A/V shows, interactive sessions, kiosks during the exposition from the inauguration, closing ceremony, National Day celebrations etc..

7.1.1.3. The design of the theme must be very innovative, interactive, and should utilise the State of Arts, best technologies, and easily communicable to common peoples/visitors.

7.1.1.4. The theme should have present the strength and success of the country in terms of Future Energy, exports/imports of trade & service industries, best and innovative research in science and technology, updated infrastructure developments, education, culture, social achievements and future planning, strength of military and paramilitary forces and other new developments and researches etc. It should also depict the development in socio-political and cultural development, tourism, attractive policies of Government of India.

7.1.1.5. The presentation of theme area may be various forms which include display of innovative models, graphics/panels etc, audio-visual shows/ film presentation using latest equipments like LED TV, Videos, Projectors, computer generated information, touch screens or with any latest equipments etc., and some areas being manifested through physical depiction, live demonstrations and cultural events etc.

7.1.1.6. The Agency shall ascertain himself the requirements of the Expo 2017 for the design of India Pavilion based on Expo Guidelines.

7.1.1.7. The Agency shall also plan and prepare conceptual design specifications and drawings of live demonstration, cultural activities and heritage arts, and organizing the events i.e. inauguration, closing ceremony ceremonies of the pavilion, National Day celebrations etc during the exposition period.

7.1.1.8. The Agency shall prepare the furniture/ equipments and other interior layout drawings which will include AV aids, signage, touch screen, kiosks, etc. Their numbers/quantities including description of items shall also be mentioned.

7.1.1.9. No change, whatsoever, will be effected in the designs of the Pavilion, exhibits or mode of display once finally approved by ITPO. For unavoidable deviations, if any, the prior approval of ED, ITPO shall be obtained.

7.1.1.10. The Agency shall provide expert inputs to ITPO on a weekly basis to ensure quality and timely completion to the satisfaction of ITPO.

7.1.1.12. Additional details on the theme of Expo 2017 may be referred the website: www.expo2017.org.

7.2. PLANNING AND DESIGN STAGE OF BUILDING STRUCTURE AND UTILITIES/SERVICES.

- 7.2.1. The Agency shall prepare conceptual design, layout plan, and drawings, broad specifications of building structure of India Pavilion co-related with theme design of pavilion including interior works as per the design of theme as above in accordance with Planning and design of building, Interior/Thematic Design based on Expo theme and Sub-themes and India theme and Sub-themes and contents as mentioned in bid document.
- 7.2.2. In addition to above, the Agency shall prepare Planning and Design, drawing of commercial, non-commercial area displays, space for inside Theatre/ stage if any, space for restaurant/food outlet, office space for Pavilion Director and staffs, space required for storing of exhibitor's goods/items, space for reception are etc. as per Expo Guide lines and the requirements of the Expo Authorities.
- 7.2.3. Planning, Design and preparation of all the facilities/utilities i.e. Electrical Installation, Fire Fighting equipments and HVAC, CCTV, AV, Videos and music system if any as designed by the consultant. To be required for the Pavilion.
- 7.2.4. The Agency shall have to plan and design the pavilion that, India Pavilion building/structure including interior works/items, electrical, fire fighting, all services etc. complete which has to be dismantled after the conclusion of the exhibition and removed all the building rubbish/melba from the India Pavilion site and make it in original condition and be handed over to Expo Authorities with in stipulated time period as per Expo guide lines.
- 7.2.5. No material will be taken over by ITPO after the Expo. The Agency will take into account the depreciated value of useable materials and disposal charges into account while preparing the bid document for construction works.

- 7.2.6. Pavilion should be designed considering the space on floor, in the public movement area, should be without steps or ramps. During rush period, the steps or ramps are likely to be missed by visitors and accidents could occur. If possible, **Restaurant inside the pavilion may be designed in such a way that it should have a separate approach and entrance/exit, so that visitors to the restaurant need not queue up along with the general public.**
- 7.2.7. **The passage of the Pavilion should be as per Expo guidelines.**
- 7.2.8. Shops and show rooms/ booths should be located towards the exit so that visitors go there only after visiting the theme pavilion.
- 7.2.9. Shops should have bigger size of entrance/exits. Shops should have more frontages and less depth.
- 7.2.10. Some storage space should be catered for within the shop.
- 7.2.11. Separate lockable storage space should be planned in the pavilion for individual commercial shops.
- 7.2.12. Layout plan with specifications need to be made keeping in view regulations building code, structural engineering parameters, engineering standards and practices, environmental/safety concerns etc.
- 7.2.13. Preparation of preliminary architectural drawings and designs showing details of useful areas (theme and commercial areas), theme contents by various means including audio-visual, services area, circulation areas, total plinth area to provide information in respect of magnitude of work and its components and services etc.
- 7.2.14. Preparing detailed architectural, structural and interior design, drawing for execution of construction works, coordination and supervision of construction work. The structural design stabilities of the building should be checked and verified from reputed institutional bodies like IITs, NITs or as decided by ITPO etc and the same be submitted to this office.
- 7.2.15. The consultant shall also have to obtain the structural design and drawings of the pavilion approved from the Expo Authorities and local bodies of Astana before execution of the work.
- 7.2.16. Carrying out necessary modifications in layout plan/design/Architectural & Interior drawings as may be required during different phases of the development will also be done from time to time without any additional cost.
- 7.2.17. The total cost of such work mentioned in the present scope of work will be approximately **Rs.7.50Crore.**

7.3. PRELIMINARY STAGE

- 7.3.1. To modify conceptual drawings as per directions of ITPO.
- 7.3.2. Make presentations before Steering Committee, Committee of Directions or any other authority and modify the drawings as per directions of ITPO.
- 7.3.3. Further, obtain approval of the necessary plans/drawings and other relevant documents from Expo Authorities/ local bodies as required.
- 7.3.4. Carryout survey or any other investigation required to design the Pavilion at his cost.
- 7.3.5. The Agency shall prepare preliminary drawings and specifications of the building structure based on the approved concept design of ITPO and Expo Authorities including all internal and external utility services like internal electrification, ventilation and air-conditioning, fire detection, fire-fighting system, acoustic treatment, telephonic conduits, compound lighting, external lighting, interior design setup, theme contents and signage etc. or any other service/utilities forming part of Pavilion indicating scope, specifications and costs separately for each of the aforesaid components. All the provisions have to be as per standard and codes in practice applicable in Astana, Kazakhstan at the site.
- 7.3.6. The Agency shall prepare preliminary drawings of all the interior works, commercial and non-commercial areas e.g. light weight partition works, lighting arrangement and power points, laying of carpet in stalls and passages, provision Audio Visual and Public Address system, facia, furniture, provision of store room, office accommodation for the Director India Pavilion, plan of thematic areas and reception areas, setting up of display of exhibits/items, provision of signage, posters, banners, artwork, telephone (including wiring), computers, (including wiring), LED TV, furniture, display aids, vertical blinds on windows/ventilators, provide furniture, furnishing works etc. as indicated in other stages and general arrangement of facilities etc. including specifications. All the interior works will be as per samples approved by ITPO. A list of the interior items to be provided as per approved design of Pavilion shall be supplied by the agency.
- 7.3.7. Obtain necessary approvals/sanctions etc. from ITPO, Expo authorities and local bodies of Astana, as applicable.
- 7.3.8. Stage inside the building may be required for performing the cultural programmes, will also be taken into consideration while submitting the financial bid.

7.4 RUNNING, MAINTENANCE AND OPERATION STAGE

The Agency shall ensure that the India Pavilion remains properly activated, manned and uninterrupted operational throughout the duration of the Expo 2017 without any break or hindrance. The day-to-day maintenance and the periodical maintenance of the Pavilion and equipments wherever required, will be undertaken by the agency.

- 7.4.1** Supervising, monitoring and coordination for proper functioning and maintenance of India Pavilion including theme pavilion as per the approved design, utilities services and other misc. work related with proper functioning of the Pavilion, during the exhibition period.
- 7.4.2** The Agency shall ensure that the damaged / de-shaped / faded signages, posters, banners, carpet, etc. during Expo duration will be replaced immediately by the agency. The decision of ITPO in this regard will be final and binding.
- 7.4.3** Agency shall supervise, monitor and coordinate all works related with construction/maintenance/operation for proper functioning of the India Pavilion including all applications of audio-visual system/shows during the Expo period and inauguration to the closing ceremony, National Day celebration.
- 7.4.4** The Agency shall supervise, monitor and coordinate with the agencies who involved for Running/maintenance and operation of the Pavilion including maintenance of pavilion structure, interior works and setting up of exhibits/interior items and services etc. which will be the part of contract of the building works, till it is dismantled. The maintenance includes daily cleaning, housekeeping, conservancy, replacement of damaged/ defective fittings and fixtures, flowers and plants in India Pavilion and maintenance of the same etc.

7.5 DISMANTLING STAGE

- 7.5.1** The agency will dismantle the pavilion structure, interior items and services provided by the agency and disposal of building rubbish/melbas etc. Complete of the Pavilion and restoration of the site in original condition (as it was at the time of taken over the possession of the Pavilion) and handing over the same to Expo Authority/local body..
- 7.5.2** The Agency shall Obtain No Dues Clearance Certificate from the Expo Authority/local body after handing over the land to Expo and handover the same to ITPO.

8 TIME / SCHEDULE

The work has to be completed as per schedule mentioned below. As per schedule of Expo Authorities, the Pavilion is to be ready in all respect by **02/04/2017** for opening ceremony on **10/06/2017**.

S. No.	Description of work	Scheduled Date
8.1	Submission of conceptual drawings/plans	31/08/2016
8.2	Start of construction of building work/Structure of pavilion	01/01/2017
8.3	Completion of construction and other pavilion structural work	28/02/2017
8.4	Completion of interiors, decoration, Furniture, AV Units, CCTV, PA System etc, complete for Operation	31/03/2017
8.5	Finalization and handing over the completed Pavilion in all respects to ITPO including the implementation of observation of Expo Authorities, if any	15/05/2017
8.6	Pavilion to be taken over by the agency for demolition	15/09/2017
8.7	The premises allotted to India Pavilion to be vacated after demolishing of the pavilion and interior structures, display aids etc., restoration of site in original condition and handing over the site to Expo Authorities.	15/10/2017

9. **COMPENSATION FOR DELAY**

9.1. The time allowed for carrying out the work, as specified in Para 8 shall be strictly observed and deemed to be the essence of the contract on the part of the agency. The work shall, throughout the stipulated period of the contract, be progressed with due diligence and in the event of failure of the Agency to complete the work within time schedule as specified above or subsequently notified to them, the agency shall pay as compensation amount not exceeding 1% (one percent) as decided by Executive Director, ITPO for every day that the work remains unfinished after the specified dates as per Time Schedule mentioned in clause 9 subject to a maximum of 10% of the tendered value.

9.2. Also, the agency will make up the time in case of delay of any intermediate milestone but work will be completed as per schedule, and vacant site also handed over as per the schedule.

9.3. Failure to adhere to intermediate milestone of approval/permits of the aforesaid schedule, if any, due to any delay in formal approval from Expo authorities, will not entitle the agency any extension of time or any compensation on account of expediting the construction activity. No claim on this account shall be entertained.

10. **SECURITY DEPOSIT AND PERFORMANCE GUARANTEE**

10.1. Performance Guarantee

10.1.1 The agency shall submit Performance Guarantee @ 5% (five percent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement (notwithstanding and without prejudice to any other provisions in the contract) within 7 days from the date of issue of letter of acceptance.

10.1.2. This guarantee shall be in the form of Bank Guarantee/bankers cheque of any scheduled bank/demand draft of any scheduled bank/pay order of any scheduled bank. The performance guarantee shall be valid up to 31.03.2018. In case the time for demolishing of the structure gets enlarged the consultant shall get the validity extended to cover such enlarged time. After full satisfaction of the work, the performance guarantee shall be returned to the consultant without any interest.

10.1.3. In the event of the contract being determined or rescinded under provision of any of the clauses of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of ITPO.

10.2. Recovery of Security Deposit

10.2.1. A sum @5% of the gross amount of each running bill till the sum along with the sum already deposited as earnest money, will amount to security deposit of 5% of the tendered value of the work. Such deductions will be made and held by ITPO by way of Security Deposit unless they have deposited the amount of security at the rate mentioned above in the form of Banker's cheque/Demand Draft in favour of ITPO.

10.2.2. All compensation or other sums of money payable by the agency under the terms of this contract may be deducted from the security deposit.

10.2.3. Security deposit shall not be refunded till the consultant produces no dues clearance certificates from the Expo Authorities, and not before one month of the completion of the demolition of the building, interior structures, interior display aids, vacation of the site, restoration of the site in original conditions and handing over the site to Expo Authorities.

10.2.4. In case any recovery made by Expo Authorities on account of restoration of the site in original conditions, delay in vacating the site, any levy of penalty during the Expo or before handing over the site etc., such recoveries shall be made from the security deposit.

11. GUARANTEE

11.1. The agency shall guarantee to redesign and reconstruct at their cost any portion of their engineering design, work, which due to their failure to use a reasonable degree of design skill, shall become defective during execution or regular use of the portion of the work affected.

11.2. The employer makes good the loss by recovery from the dues of the consultant in case of failure to comply with the above.

11 (A) FORCE-MAJEURE

If at any time, during the continuance of this contract, the performance in whole or in part, by either party, of any obligation under this is prevented or delayed, by reason of war, or hostility, acts of the public enemy, civic commotion, sabotage, Act of State or direction from Statutory Authority, explosion, epidemic, quarantine restriction, strikes and lockouts (as are not limited to the establishments and facilities of the contractor), fire, floods, natural calamities for any act of GOD (hereinafter referred to as EVENT), provided notice of happenings of any such EVENT is given by the affected party to the other, within 15 Calendar days from the date of occurrence thereof, neither party shall, by reason of such event, be entitled to terminate this contract, nor shall either party have any such claims for damages against the other, in respect of such non-performance or delay in performance provided the contract shall be resumed as soon as practicable, after such EVENT comes to an end or ceases to exist. The decision of the CMD, ITPO as to whether the service may be so resumed (and the time frame within which the service may be resumed) or not, shall be final and conclusive, provided further that if the performance in whole or part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 30 days either party may, at his option terminate the contract.

12. TAXES

- 12.1. Sale Tax/VAT/local Taxes, Contract works Tax, Labour Welfare Tax, Consumption Tax payable in India or Astana, except Service tax if any, on the day of receipt of tenders in respect of this contract shall be payable by the agency and ITPO shall not entertain any claim whatsoever in this connection.
- 12.2. The agency shall keep a record of taxes paid in Kazakhstan in respect of the works undertaken and submit documents to ITPO/ Govt Authorities in Kazakhstan. The security deposit will be released after receipt of the documents of refundable taxes. Refund of taxes, if any, will be transferable to ITPO and the agency will have no claim on the same.
- 12.3. Only the invoices raise in the name of **India Trade Promotion Organization, India Pavilion, Expo 2017, Astana, Kazakhstan** shall be applicable for consumption tax refund claim.
- 12.4. In pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by the Govt. of India and does not any time becomes payable by the agency, then in such cases, it shall be lawful to the Govt. of India and it will have the right and be entitled to recover the amount paid in the circumstances as above said from dues of the agency.
- 12.5. All tendered rates shall be inclusive of all taxes and levies payable under respective statute. However, pursuant to the constitution if any further tax are levied, if imposed by the statute, after the last stipulated date for the receipt for the tender including extension, if any and the agency thereupon necessarily and properly pays such taxes/levies, the agency shall be reimbursed the amount so paid, provided such payment, if any, is not, in the opinion of the Executive Director, ITPO (whose decision shall be final and binding on the agency), attributable to delay in execution of work within the control of the agency.
- 12.6. The agency shall, within a period of 30 days of the imposition of any such further Tax or levy, pursuant to the constitution give a written notice thereof to ITPO that the same is given pursuant to this condition together with all necessary information relating thereto.
- 12.7. **Payment of VAT:** The Official participants can *refund VAT* charged on the cost of goods, works and services required for the construction, installation, setting, operation, and dismantling of its pavilions. VAT refund procedure is similar to the one established for diplomatic representative offices of foreign states and is set out in the Tax Code of the Republic of Kazakhstan. Therefore, ITPO shall pay VAT component to the contractors/ sub-contractors on the bills raised by the contractors against the services rendered. Similarly, in the case of payments made by the contractor for services availed by them, the contractors will make payment of VAT and submit a monthly statement of original invoices and other supporting documents indicating the VAT paid by them. The employer will prepare a consolidated statement of VAT paid by them/and by the contractors and claim refund of VAT. The amount of refund received in respect of payments made by the contractor will be arranged to be refunded by ITPO to the contractor on realization of the refund. Only the invoices raised in the name of India Trade Promotion Organisation (ITPO, India Pavilion, Expo 2017, Astana, Kazakhstan account Design C shall be considered for VAT refund claim.

13. SERVICE TAX

Service Tax payable if any, payable in India or Kazakhstan shall be borne by ITPO. This will be indicated separately by the Agency during submission of the bid along with supporting documents.

14. INSURANCE

- 14.1. The agency shall get the necessary insurance done for their personnel employed, company insurance, third party insurance, marine insurance, agencies all risk insurance, erection all risk insurance or any other insurance and also indicated by Expo Authorities.

15. ABANDONMENT OF WORK

That if the agency abandons the work for any reason whatsoever or become incapacitated from action as aforesaid, the employer may make full use of all or any of the drawings/details prepared by the agency and that the agency shall be liable to refund any excess fees paid to them up to that date plus such damages as may be assessed by the ITPO subject to a maximum of the sum of performance guarantee and security deposit which will stand forfeited.

16. TERMINATION

- 16.1. ITPO without any prejudice to the right against the agency in respect of any delay or otherwise or to any claims or damage in respect of any breaches of the contract and without prejudice to any rights or remedies under any other provisions of this contract, may terminate the contract by giving one week's notice in writing to the agency and in the event of such termination, the contractor shall be liable to refund the excess payment, if any, made to them over and above what is due in terms of this agreement on the date of termination and the ITPO may make full use of all or any of the drawings prepared by the agency.
- 16.2. The agency shall undertake the work with due diligence so as to complete the work by the scheduled date in all respect. If during the currency of the project, the ITPO or authorized representative finds any slackness on the part of agency and come to the conclusion that the agency will not be able to complete the work by the target date, the ITPO or the authorized representative may, without prejudice to other rights or remedies, decide:
- 16.3. To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the agency under the hand of the authorized representative shall be conclusive evidence). Upon such determination or rescission, full Performance Guarantee and security deposit recoverable under the contract shall be liable to be forfeited absolutely. If any portion of the security deposit has not been paid or received it would be called for and forfeited.
- 16.4. In case, To employ workforce paid by ITPO and to supply materials to carry out the work, or any part of the work debiting the agency with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the authorized representative shall be final and conclusive) against the agency and crediting him with the value of the work done in all respects. The certificate of the authorized representative to the value of the work done shall be final and conclusive against the agency provided always that action under the sub-clause shall only be taken after giving notice in writing to the agency.
- 16.5. After measuring up the work of the agency and giving notice to the agency to take such whole or the balance or part thereof as shall be un-executed out of his hands and to give it to another agency to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original agency if the whole work had been executed by them (of the amount of which excess the certificate in writing of the authorized representative shall be final and conclusive) shall be borne and paid by the original agency and may be deducted from any money due to him by ITPO under this contract or on any other

account whatsoever or from their performance guarantee and security deposit or the proceeds of sales thereof or a sufficient part thereof as the case may be.

- 16.6. In the event of anyone or more of the above courses being adopted by the authorized representative, the agency shall have no claim to compensation for any loss sustained by him by reasons of their hiring purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid, the agency shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the authorized representative has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

17. ARBITRATION

- 17.1. That if any dispute, difference or question shall at any time arise between the parties in respect of the meaning or construction of this agreement, or covering anything herein contained or the validity of the enforcement thereof which cannot be settled mutually, shall within 30 days (or such longer period as may be mutually agreed upon) from the date, one party informs the other in writing that such dispute or disputes or disagreement exists will be referred to sole arbitrator appointed by the Chairman and Managing Director, ITPO.
- 17.2. The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, CMD at the time of such transfer, vacation of office or inability to act, shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such persons shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.
- 17.3. The arbitration proceedings will be conducted in accordance with and be subject to the Arbitration & Conciliation Act, 1996 as amended from time to time or any statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings.
- 17.4. The arbitrator will have its seat at New Delhi.
- 17.5. It is also a term of this contract that the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases where the total amount of the claims by any party exceeds Rs.1,00,000/-. The arbitrator shall give reasons for the award.
- 17.6. It is also a term of the contract that the fees payable to the arbitrator shall be paid equally by both the parties.
- 17.7. The agency shall continue to perform their duties with diligence notwithstanding the fact that a dispute has been referred to arbitration or any dispute or difference has arisen. It is also the term of the agreement that if the contractor does not make demand for arbitration in respect of any item in writing within 90 days of receiving intimation from the ITPO that the final bill is ready for payment, the claim of the contractor will be deemed to have been waived and absolutely barred and the ITPO shall be discharged and released of all liabilities under the agreement in respect of these claims.

18. MODE OF PAYMENT

- 18.1. The agency shall submit interim / running account bills along with the measurements to ITPO as per the schedule for release of payments given in schedule of payment. ITPO will verify the bill and measurements. The Agency shall provide technical and other support to verify the measurement and bills. All interim/ running account bills shall be regarded as payments by way of advances against final payment only and shall not preclude the requiring of bad,

unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected.

- 18.2. The agency shall submit the final bill to ITPO, for release of payment, within one month of the physical completion of work (satisfactory handing over vacant site of the work to the Expo Authorities and obtain No Objection Certificate from them).

19. MOBILIZATION ADVANCE

- 19.1. Interest free mobilization advance not exceeding 10% of the tendered value, if requested by the contractor within one month of award of the work. In such a case, the agency consultant shall execute a Bank Guarantee Bond from a Scheduled Bank as specified by ITPO for the full amount of mobilization advance before such advance is released. The Bond will be released after full recovery of the mobilization advance.
- 19.2. The mobilization advance shall be recovered from the first running account bills of the agency at the rate of 2.5% of contract amount from each running bill till the recovery is completed.

20. SCHEDULE OF PAYMENT

- | | |
|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| 20.1. Mobilization advance against Bank Guarantee adjustable in the running account Bills | : 10% of contract amount in INR. |
| 20.2. On approval of conceptual design and drawings by ITPO / Expo Authorities | : 10% of contract amount in INR |
| 20.3. On approval of working design / drawing | : 10% of contract amount in INR |
| 20.4. During execution of Pavilion | : 25% of contract amount in three interim payments in INR. |
| 20.5. During execution of interior works and handing over the interim payments in INR. Pavilion to ITPO | : 25% of contract amount in two |
| 20.6. On maintenance of the pavilion | |
| 20.6.1. After 10/07/2017 | : 5% of contract amount in INR |
| 20.6.2. After 10/08/2017 | : 5% of contract amount in INR |
| 20.6.3. After 10/09/2017 | : 5% of contract amount in INR |
| 20.7. Final Bill payment | : 5% of contract amount in INR |
| 20.8. Running account payment shall be made by ITPO within 20 days after submission of the bills by the agency. | |

21. GENERAL CONDITIONS

21.1. The agency shall be deemed to have satisfied himself as to the nature of the site, local facilities, the cost of access to the site and all other matters affecting the execution and completion of the work. No extra charges consequent of misunderstanding or otherwise will be allowed. The charges on account of levies if any, imposed by the Expo Authorities or the Government of Kazakhstan subsequent to award of work, shall be reimbursed on actual basis on production of verifiable documents.

21.2. The agency shall be deemed to have thoroughly understood the general regulations, special regulations, supplementary regulations and instruction manuals set out by the organizers of Expo 2017, Astana, Kazakhstan and shall comply with the stipulation set out therein.

21.3. The agency shall ensure that the India Pavilion remains properly activated, manned and operational throughout the duration of the Expo 2017 without any break. The day-to-day maintenance and the periodical maintenance of the Pavilion structure, thematic areas presentation, utilities/services) and equipments wherever required, will be undertaken by the agency.

21.4. The agency shall indemnify ITPO against any damage, claim arising out of the non-compliance of the aforesaid laws and regulations, or any other claim of 3rd party against ITPO.

21.5. The scope of work does not include the cost of Hostesses, security guards, live cultural performance inside or outside the Pavilion.

21.6. The scope of work does not include restoration of damage due to vandalism, natural calamities like earthquakes, floods, storm, fire and any other acts of nature beyond the control of the agency but includes damages due to operation, running, and maintenance of assets provided/executed.

21.7. Payment for supply order released against foreign exchange will be made through irrevocable Letter of Credit, all banking charges outside charges will have to be borne by the Agency. The performance guarantee of the 5% of contract value for full warranty period will have to be provided by the Agency.

21.8. The agency shall comply with the laws and regulations pertaining to the labour, employed either at India or at Astana for the project. Any dues, if payable by the ITPO due to non-compliance to any of the provision shall be borne by the agency. Director India Pavilion or the authorized representative of the employer shall be at liberty to deduct such amounts from agency's bills or recover from the security deposit available with the ITPO.

21.9. No material will be taken over by ITPO after the Expo. The Agency will take into account the depreciated value of useable materials and disposal charges into account while quoting the rates, if any.

21.10. The Agency has to make the provision in the contract document for construction of Pavilion, considering the following items also:

21.10.1. All the materials provided will be new and approved by ITPO.

21.10.2. The cost of water, electricity and conservancy charges during the construction stage and dismantling/disposal.

21.10.3. Cost of access of men and material to site of construction, if any.

21.10.4. The cost of permit/ approvals required from the Expo authorities/local bodies/City authorities of Astana, Kazakhstan.

21.11. The cost does not include the following:

21.11.1. The consumption charges of electricity and water during the period of the Expo i.e. from 10th June 2017 to 10th September 2017.

21.11.2. The connection charges for external electricity and water, if any payable to the Expo Authorities.

21.12. The Agency shall ensure the proper functioning/cooperation of Audio visual, PA system, touch screen and video films etc during the Expo period. Also, all approvals and permissions will be taken by the Agency to play movies, CDs/ DVDø etc from all concerned. Royalty, if any to be paid, will be paid by the Agency.

21.13. The copyrights of the concept and design relating to theme of Expo 2017 will be of exclusively with ITPO. The Agency shall return all the audio and video film etc to ITPO after conclusion of the Expo.

21.14. In case Agency requires Kazakhø currency, the same shall be as per prevailing rates of RBI guidelines.

21.15. The agency shall obtain all the approvals required as per Local Bye-Laws/ requirement from the Local Bodies/ Expo Authorities. Fee thereof, if any, will be reimbursed by ITPO on production of necessary vouchers and documents.

21.16. Electric connection/water/gas and any other service connections/permits shall be arranged by the Agency.

21.17. Prices quoted will be including of all taxes.

21.18. Only online tenders received as per bid documents will be considered. Tenders received through other modes like Fax and email/scan copy shall not be eligible for consideration. The tenders received after due time and date shall not be considered and shall not be opened. These will be returned unopened.

21.19. In the event that more than one bidder submits equal bids, ITPOø decision will be final and binding.

21.20 The competent authority on behalf of CMD reserves the authority to reject any or all the tenders received without assigning any reason. All tenders in which any of the prescribed

condition is not fulfilled or any condition, including that of conditional rebate, is put forth by the bidder shall be summarily rejected.

- 21.21 Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be rejected.
- 21.22. The competent authority on behalf of CMD reserves to himself the right of accepting the whole or any part of the tender and the bidder shall be bound to perform the same at the rate quoted.
- 21.23. The tender shall remain open for acceptance for a period of 90 days from the date of opening of tenders. If any bidder withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the department, then ITPO shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the re-tendering process of the work.
- 21.24. This bid document Inviting bids shall form a part of the contract document, therefore, the bidder has to sign each page as acceptance.
- 21.25. On acceptance of the tender, the name of the authorized representative(s) of the contractor who would be responsible for taking instructions from the team leader shall be communicated in writing.
- 21.26. ITPO will not entertain any claim whatsoever in respect of the taxes, if paid by the selected agency.
- 21.27. The agency/contractor shall comply with various local laws in Astana as may be applicable. The contractor shall comply with the provisions of all applicable local labour laws, minimum wages act, or all other similar rules/bylaws. The submission of the bid means that the bidder indemnifies ITPO on any claim whatsoever in this regard.
- 21.28. 'Work' means work including execution of work, supply of materials, services and equipments, etc.
- 21.29. The approved bidder will work under the directions and guidance of the ITPO. It shall be the sole responsibility of the Agency to ensure all activities undertaken by them for ITPO are in accordance with the laws of land i.e. Astana.
- 21.30. Rates should be quoted in **RUPEES** only and inclusive of all taxes, etc. The payment will be made to the agency in INR only.
- 21.31. Interested eligible agency may submit their bids with supporting documents including earnest money (EMD) of Indian Rupees **15,00,000/-** (Rupees Fifteen Lakhs only) in the form of a demand draft drawn in favour of "**India Trade Promotion Organisation**" payable at New Delhi. The EMD will be refunded to the un-successful bidder(s) after the selection of the agency. The EMD will be refunded to the successful bidder only after completion of the project satisfactorily. Misrepresentation of facts/withdrawals of bids will lead to forfeiture of EMD.

21.32. The agency will submit the bills along with documentary proof in original for the job relating to the work as mentioned in the tender document for releasing the payment.

21.33. **The Agency is required to do numbering and sign each page of the bid document as well as other scanned documents by the authorized signatory. Authorization letter is to be enclosed.**

21.34. **Validity of the bid is for ONE YEAR of the last day of the submission of the bid.**

21.35. ITPO requires that bidders under this contract to observe the highest standards of ethics during the period of agreement. Submission of this bid implies that the bidder is free from any vigilance/departmental inquiry of any government. The bidders have to bear the cost associated with the preparation and submission of bid documents at ITPO, New Delhi.

21.36. ITPO will reject a proposal for award of work if it is determined that the Applicant recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

21.37. ITPO will declare an Applicant/Bidder ineligible, either indefinitely or for a stated period of time, to be awarded contract/contracts, if at any time, it determines that the Applicant/Bidder has engaged in corrupt or fraudulent practices in competing for, or in executing the contract.

21.38. Agency will indemnify ITPO against any claims, loss, suit, liability or judgment suffered or likely to be suffered on whatsoever account.

21.39. ITPO reserves the right to :

- Make changes in the Design/ Construction & Decoration plan/Scope of work.
- Extend the deadline for the submission of applications/bid documents at its discretion.
- Accept or reject any proposal at any time prior to award of contract/order, without assigning any reasons and without any liability on ITPO.
- Suspend the project; cancel the contract with the selected party in part or in the whole at any time if in the opinion of the ITPO it is necessary or expedient in the public interest. The decision of the ITPO shall be final and binding in this regard. ITPO shall also not be responsible for any damage or loss caused or arisen out of aforesaid action.
- ☐ Modify terms and conditions of the contract which shall be granted to the successful bidder after the bidding process, if in the opinion of the ITPO, it is necessary or expedient to do so in public interest or for proper implementation of the project. The decision of the ITPO shall be final and binding in this regard.

21.40. For interpretation of any clause of this document, the decision of ITPO would be final and binding on the bidder.

21.41. The Contract means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of the CMD and the Contactor, together with the documents referred to therein including the conditions, the specifications, designs, drawings and instructions issued from time to time by the concerned Fair Officer and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

21.42. The Contractor shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

21.43. The bidder shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his bid for the works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all the obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works as the case may be (Sufficiency of Tender).

21.44. All documents forming the Contract are to be taken as mutually explanatory of one another.

In case the bidder requires any clarifications or further information, may contact
Mr. S. K. Gupta, Manager (Civil), India Trade Promotion Organisation, Pragati Bhawan, Pragati Maidan, New Delhi – 110001.
Email: skgupta@itpo.gov.in during office hours. (10.00 AM to 6.00 PM)

21.45. a) The evaluation of bids will be made in two stages – (i) Earnest Money Deposit with Technical papers and (ii) Financial bids.

b) Financial bids of only those firms will be considered for opening who have fulfilled the technical requirement/evaluation. After opening of financial bids, financial evaluation will be made & financial ranking statement will be prepared and the selection of the vendor/agency will be done on the basis of L1 (lowest) criteria.

21.46. **Bids received after the deadline of submission of application will not be considered under any circumstances.**

21.47. **No conditional bids shall be considered. This is very important.**

21.48. The draft of Earnest Money Deposit (EMD) has to be physical and in cashable instrument. No guarantees or other bank authority letter shall be accepted. The EMD is interest free.

21.49. Bids received through email/fax shall not be considered

21.50. No modification or substitution of the submitted application/bid shall be allowed. An

applicant/bidder may withdraw his application after submission, provided that written notice of the withdrawal is received by ITPO before the due date. In case an applicant/bidder wants to resubmit his application/bid, he shall submit a fresh application/bid following all the applicable terms & conditions by the stipulated date.

21.51. Any document received after the closing date and time shall not be accepted.

21.52. Bidders are requested to refrain from any communication after submission of bid till the opening of the financial bid excepting at the time of opening of the technical bid by the ITPO committee.

22. ADDITIONAL CONDITIONS:

- 22.1. The Agency shall ascertain himself the requirements of the Expo 2017 for the design of India Pavilion based on Expo main theme and sub-themes and its Guidelines to evolve content of India Pavilion.
- 22.2. The Agency should have complete control on items and design elements of the national pavilions focusing more on the external and material usage.
- 22.3. The Agency should be more careful in selection of construction material or design materials of Expo theme and India Pavilion theme to meet the guidelines of Expo authorities/local bodies. The re-cycle able materials may be considered for construction of India Pavilion.
- 22.4. The Agency will need to co-opt some Kazakhstania Vendors/Sub-Contractor who understands the material and construction of which may be provided by the Organizers very well as per Expo guidelines.
- 22.5. Electrical fittings and interior items should be properly quantified and specified and should be provided in the detail drawings/plans.
- 22.6. The agency will take care all the supervision of the project, throughout the construction phase and during the currency of the Expo
- 22.7. Carrying out the dismantling of building structure including interior works, and disposal all dismantled materials/items from the India Pavilion site and handing over the site to the Expo Authorities in original condition.
- 22.8. The agency shall indicate the name of the associates such as interior designers, architects, structural designers, etc. of repute based in India and Astana, if any, who will be associated with the work. The Agency shall also associate and indicate/ state the name of the Project Management Agency from Kazakhstan enlisted by Expo Authorities for the project management in Astana, Kazakhstan.
- 22.9. The agency shall be fully responsible for the soundness and accuracy of the structural and services designs and the responsibility for safety of the structure shall be entirely that of the agency notwithstanding the approval of the designs by the ITPO or Expo authorities or the authorities of Kazakhstan Government. The agency and the concerned associate, if any, shall certify in writing that the structural designs are in accordance with the updated and relevant code of practice in force at the place of construction.
- 22.10. The agency shall comply with the prevailing laws and regulations in Kazakhstan. The agency shall indemnify and keep indemnified ITPO against any such claims and against all costs and expenses which become payable by ITPO due to non-compliance of laws and regulations

and/or non-adherence to the laws of land by the agency or any of its employees at any point of time viz. construction, maintenance, dismantling and services during exposition or thereafter.

- 22.11. ITPO without assigning any reasons, reserves the right to exclude any of the above services at any stage from the scope of work with suitable adjustment in the fee payable to the Agency.
- 22.12. The inspection and quality of work /activities will also be checked by ITPO Authorities.
- 22.13. Any information/details required for planning shall either be obtained by the Agency through Expo website or collected themselves at their own expenses.
- 22.14. The Agency shall make site inspection, if required, at his own cost to prepare or assess any details including in conceptual stage.
- 22.15. Agency shall design all work in conformity with overall rules & regulations of the Expo Authority. Deviation from norms would not be accepted and any cost incurred on account of violation/deviation to be borne by the consultant.
- 22.16. No material will be taken over by ITPO after the Expo. The Agency will take into account the depreciated value of useable materials and disposal charges into account while quoting the rates, if any.
- 22.17. Preparing architectural, structural and interior design/drawing, obtaining approvals from Expo Authorities/Local Bodies.
- 22.18. The Agency should be more careful in selection of construction material or design materials of Expo theme and India Pavilion theme to meet the guidelines of Expo authorities/local bodies. The re-cycle able materials may be considered for construction of India Pavilion.
- 22.19. The requirement of video wall, AV instruments, CCTV, LED, TV, CCTV/Plasma Projectors should be properly specified/quantified in the tender.
- 22.20. CCTV shall be provided in the theme areas, commercial areas (in each proposed commercial/shops areas), Restaurant, Entry, Exist and Emergency Gates, and other important areas etc for surveillance to avoid untoward incidence in the Pavilion. The CCTV display monitor should be available in the Office area of Pavilion Director for proper monitoring of the visitors.
- 22.21. Exhibition area and AV area to be totally segregated to facilitate easy flow of visitors.
- 22.22. Intercom facilities may be provided in each Office/Shops/ Restaurant/Protocol, etc.
- 22.23. The Agency will need to co-opt an Kazakhstan Vendors/Sub-Contractor who understands the material and construction of which may be provided by the Organizers very well as per Expo guidelines.

- 22.24. The restaurant should be located near the VIP room and have an easy approach to the VIP lounge.
- 22.25. As there are strict guidelines about storage of raw material, fresh fruits & vegetables/meat/fish, etc., it is important that a proper storage space for raw materials/ingredients be designated for the restaurant to ensure compliance with the Food Storage Bye-laws of the host country.
- 22.26. The restaurant should be designed in such a way so that maximum visitors could use the facility of food outlet without any hindrance.
- 22.27. The agency has to abide by the legal provisions/clauses made in the contract documents for construction/ maintaining/ functioning of Indian Pavilion.
- 22.28. Electrical fittings and interior items should be properly quantified and specified and should be provided the detail drawings/plans.
- 22.29. Agency must ensure that the construction of Pavilion be got completed in time as per the bid document and should be fully operational with interiors, shops/restaurants at the time of soft opening.
- 22.30. Agency has to take the possession of the land allotted by Expo. Authority to ITPO for India Pavilion, on behalf of CMD, ITPO at their own expenses and hand over the same to the construction agency to take up the construction work of India Pavilion.
- 22.31. The agency shall ensure that the dismantling of India Pavilion and disposal of all unserviceable material and building rubbish/ melba etc. should be get it done in all respect and make the site in original condition for handing over the same to Expo. Authorities with in time frame. The agency has to hand over the cleared site to Expo. Authorities on behalf of CMD, ITPO.
- 22.32. The conservancy and sanitation work of India Pavilion including disposal of waste from the date of taking over of site, during the exhibition period and to the handing over of the site after restoration to the Expo Authorities, shall be undertaken by the agency. The cost of cleaning of India Pavilion (inside and outside areas) including display, shops etc. (the cleaning of the restaurant is not included) is included in conservancy work. The provision of dust bins and waste disposal inside the India Pavilion premise shall be provided by the agency. .

(On Rs.50/- Stamp Paper)

MEMORANDUM OF AGREEMENT FORM

Memorandum of Agreement made this _____ between Chairman and Managing Director, ITPO(hereinafter referred to as employer) which expression shall, unless excluded repugnant to the context be deemed to include his successors in office, representatives and assigns of the one part and _____ (hereinafter referred to as the Agency which expression shall, unless excluded by or repugnant to the context, be deemed to include their successors in interest and permitted assignees of the other part.

Whereas the Employer is desirous of undertaking the setting up of INDIA PAVILION AT EXPO 2017, ASTANA, KAZAKHSTAN in accordance with the general requirements as set out in the letter seeking offers issued by ITPO on dated _____, which will form part of the Agreement, and whereas the Agency have agreed to perform the services, as set out in their offer submitted vide letter dated _____ supplemented by another letter of same date and letter dated _____ enclosed conditions subject to the terms and conditions set forth in the said conditions.

Now the present witnesses and it is hereby agreed by between the parties hereto as follows:

The Employer appoints the Agency and the Agency accepts the appointment on the terms and conditions mentioned in the conditions of the Agreement annexed hereto. The conditions of agreement annexed hereto shall form part and parcel of this present Agreement. Agency letters dated _____ and _____ will form part of the Agreement.

The Letter of Intent dated _____ issued by Employer shall form part of the Agreement.

Terms of Reference issued with Tender Document will form part of the Agreement.

This agreement shall be subject to exclusive Jurisdiction of Courts at Delhi/New Delhi.

In witness whereof, the Employer through his duly authorized representatives has set his hand and seal and the Agency through their duly authorized representatives have affixed their common seal hereunto the day and year first above written.

For and on behalf of the Agency

For and on behalf of ITPO

Common Seal of the Agency

Authorised Signatory

India Trade Promotion Organisation

(On company's letterhead)

INDIA TRADE PROMOTION ORGANISATION

“Conceptualization, planning, designing of India Pavilion on the basis on Main Theme & Sub-theme of Expo’2017 including utility services, dismantling after the expo, maintenance during Expo period etc of India Pavilion at Expo’2017, Astana – Kazakhstan (June 10 to Sep 10, 2017)”.

Technical Bids

Sl. No.	Title	Details		
Eligibility Criteria				
1.	Registration no., license No./authority no. and other documents of registration as applicable and copy of certificate/proof etc. must be attached. (Photocopies of TAN/Direct tax/Income tax/Trade Tax/VAT/GST/PAN, etc., as applicable, may be attached)			
2.	Annual Turnover (last three financial years) (Please attach certificate from Chartered Accountant and other documentary evidences to establish the turnover)	Year I (2013-14)	Year II (2014-15)	Year III (2015-16)
3	Details of Past Experience of Designing/ Construction and Decoration of exhibition /Expo			
Technical Criteria				
Company Profile				
5.	Name of the Company			
6.	Address			
7.	Telephone			
8.	Fax			
9.	E-mail			
10.	Name of CEO & Title			
11.	Name of the nodal contact person with designation, e-mail id and telephone No.			
	Local contact in India			
12.	Bankers details with A/c No.			
13	Year of Establishment			
14.	No. of employees			
15.	List of enclosures attached			
16.	Any other additional information, which you like to give			

It is certified that all the above information is correct and valid on the date of submission of tender. We have numbered all the pages in this envelope. The total number of pages including those of enclosures are.....

DATE : SIGNATURE OF AUTHORISED REPRESENTATIVE

Place : NAME
COMPANY SEAL

(Please attach Authorization letter, if required)

Note: 1) Please number and sign each page of this tender document and enclose it in this envelope of Annexure II.

(2) Each document as shall be enclosed has to be signed/ stamped.

(On company's letterhead)

INDIA TRADE PROMOTION ORGANISATION

“Conceptualization, planning, designing of India Pavilion on the basis on Main Theme & Sub-theme of Expo’2017 including utility services, dismantling after the expo, maintenance during Expo period etc of India Pavilion at Expo’2017, Astana – Kazakhstan (June 10 to Sep 10, 2017)”.

Sl. No.	Title	Details
1.	Name and address of the company	
EMD		
2.	<p>Details of interest free Earnest Money Deposit (EMD) & cost of tender. The draft of Earnest Money Deposit (EMD) & cost of tender has to be Physical and en-cashable. No guarantees or other bank authority letter shall be accepted.</p>	<p>Amount :</p> <p>Demand Draft No. :</p> <p>Date :</p> <p>Bank Name :</p>

DATE :

SIGNATURE OF AUTHORISED REPRESENTATIVE

Place :

NAME

COMPANY SEAL

(Please attach Authorization letter for signatory)

PROFORMA FOR PERFORMANCE BANK GUARANTEE

(To be given only if the agency wants to avail of advance of 10% amount of the bid. This can be given subsequently after the award of work/contract)

To

The Fair in Charge,
Expo'2017, Astana
India Trade Promotion Organisation,
New Delhi - 110001

India Trade Promotion Organisation (hereinafter referred to as 'the ITPO') having agreed to grant a licence to M/s.....of(hereinafter called the "LICENSEE") for carrying out the work of **“Conceptualization, planning, designing of India Pavilion on the basis on Main Theme & Sub-theme of Expo'2017 including utility services, dismantling after the expo, maintenance during Expo period etc of India Pavilion at Expo'2017, Astana – Kazakhstan (June 10 to Sep 10, 2017)”** on the terms and conditions contained in the said Bid Document, which interalia provides for production of a Bank Guarantee to the extent of `..... (`..... in words) for the service by way of security for the due observance and performance of the terms and conditions of the said license we.....(indicate the name and address and other particulars of the bank) (hereinafter referred to as 'the Bank') at the request of the LICENSEE hereby irrevocably and unconditionally guarantee to the ITPO that the Licensee shall render all necessary and efficient services which may be require to be rendered by the LICENSEE in connection with and /or for performance of the said LICENSEE and further guarantees that the service which shall be provided by the LICENSEE under the said Bid Document, shall be actually performed in accordance with terms and conditions of the Bid Document to the satisfaction of the ITPO.

2. We, the bank hereby undertake to pay to the ITPO an amount not exceeding Rupees..... (Rupees.....only) against any loss or damage caused to or suffered or would be caused to or suffered by the Authority by reason of any breach by the said LICENSEE of any of the terms and conditions contained in the said license.

3. We, the bank hereby, in pursuance of the terms of the said license, absolutely, irrevocably and unconditionally guarantee as primary oblige and not merely as surety the payment of an amount of Rupees..... (Rupees.....only) to the Authority to secure due and faithful performance by the LICENSEE of all his/their obligations under the said License.

4. We, the bank hereby also undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the ITPO stating that the amount claimed is due by way of loss or damage caused or would be caused to or suffered by the ITPO by reason of breach by the said LICENSEE of any of the terms or conditions contained in the said Bid Document or by reason of the LICENCEE's failure to perform any of its obligations under the said License.

5. We, the bank, do hereby agree that the decision of the ITPO as to whether the licensee has failed to or neglected to perform or discharge his duties and obligations as aforesaid and/or whether the service is free from deficiencies and defects and is in accordance with or not of the terms & conditions of the said License and as to the amount payable to the Authority by the Bank hereunder

shall be final and binding on the Bank.

6. WE, THE BANK, DO HEREBY DECLARE AND AGREE that :

(a) the Guarantee herein contained shall remain in full force and effect for a period of three years from the date hereof and that if shall continue to be enforceable till all the dues of the Authority/ITPO and by virtue of the said License have been fully paid and its claims satisfied or discharged or till ITPO satisfies that the terms and conditions of the said license have been fully and properly carried out by the said LICENSEE and accordingly discharged this guarantee.

(b) the ITPO shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the term and conditions of the said License or to extend time of performance of any obligations by the said LICENSEE from time to time or to postpone for any time or from time to time any of the powers exercisable by the ITPO against the said LICENSEE and to forbear or to enforce any of the terms and conditions relating to the said License and we shall not be relieved from our liability by reason of any variation or extension being granted to the said LICENSEE or forbearance act or omission on the part of the ITPO or any indulgence by the ITPO to the said LICENSEE or to give such matter or thing whatsoever which under the law relating to sureties would but for this provision, have effect of so relieving us.

(c) any claim which we have against the LICENSEE shall be subject and subordinate to the prior payment and performance in full of all the obligations of us hereunder we will not without prior written consent of the ITPO exercise any legal right or remedy of any kind in respect of any such payment or performance so long as the obligations of us hereunder remains owing and outstanding.

(d) This guarantee shall be irrevocable and the obligations of us herein shall not be conditional of any prior notice by us or by the LICENSEE.

7. We the BANK undertake not to revoke this Guarantee during its currency except with the previous consent of the Authority in writing.

Date.....day..... for _____
(name of the bank)

Witness:

1..... 2.....

(On company's letterhead)

Dated.....

The Fair In charge,
Expo'2017, Astana
India Trade Promotion Organisation,
New Delhi-110001

Sub: **Certificate of Authenticity/Genuineness**

(To be given along with the final report/bill while submitting hard evidences of deliverables)

Dear Sir,

We are pleased to enclose herewith our bill/invoice No. dated.... For an amount of Rs..... as per the job order received vide letter/e-mail dated..... from ITPO on the acceptance of our offer vide tender bid dated.....

This is to certify that all the enclosures being given herewith as documentary evidence in the hard copy version/soft version are correct to the best of our knowledge/belief. We have provided the English translation wherever necessary so as to facilitate appreciation of the work undertaken. All the information provided in the CD/Pen drive is also correct and reflects the legitimate work performed by us.

We hereby also undertake that we have deleted the data so collected at the Registration Desk after handing over all the hard and soft copies to ITPO team. Further, the information as gathered has not been passed on to any body other than ITPO officials.

The manpower engaged for carrying out the work under this contract/arrangement has been paid their necessary remunerations as per our arrangement with them. Their particulars, names, addresses, telephone numbers etc. along with their attendance record and details of the work performed, are also enclosed. We indemnify ITPO for any claim whatsoever from any of the person engaged by us for executing the contract/work order.

Thanking you,

Yours sincerely,

Date:

Place:

Authorized Signatory

Concept Paper

Astana (Kazakhstan)

Expo 2017

Theme "Future Energy"

Sub Theme

Living Energy Efficiency– Energy Efficiency and Urban Planning and Building

Submitted by

Government of India

1. Overview

India has recorded impressive rates of economic growth in recent years, which provide the basis for more ambitious achievements in the future. However, a healthy rate of economic growth equalling or exceeding the current rate of 8% per annum would require major provision of infrastructure and enhanced supply of input such as energy. The average annual energy consumption in India in 2011 was only 0.6 tonnes of oil equivalent (toe) per capita as compared to global average of 1.88 tone per capita. The per capita electricity consumption stands low at 917 kWh, which is barely one third of the world's average consumption.

The present high economic growth of the country would create much larger demand for energy and the commensurate supply as well from variety of sources with clean energy options. Technology would be an important element of future energy strategy for the country, because related to a range of future demand and supply scenario would be issues of technological choices both on the supply and demand sides, which need to be understood at this stage, if they are to become an important part of India's energy solutions in the future.

The per capita GDP in USD of 1408 in 2012 is projected to grow to USD of 4205 by 2030 and similarly the per capita electricity demand of 776 TWh in 2012 has a projection of 2499 TWh by 2030. Moreover, there is a challenge for keeping the pace of development and meet the demand without compromising with the environment. Understanding the future requirements, India has taken visionary steps to address these challenges by giving emphasis is on clean energy and taking suitable measures for energy efficiency, besides, adopting the clean technologies.

India has communicated its Intended Nationally Determined Contribution (INDC) in response to COP21 decisions particularly in terms of future energy and environment to the World community as follows:

- To reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 level.
- To achieve about 40 percent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030 with the help of transfer of technology and low cost international finance including from Green Climate Fund (GCF).
- To create an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030.

Enhancing Energy Efficiency

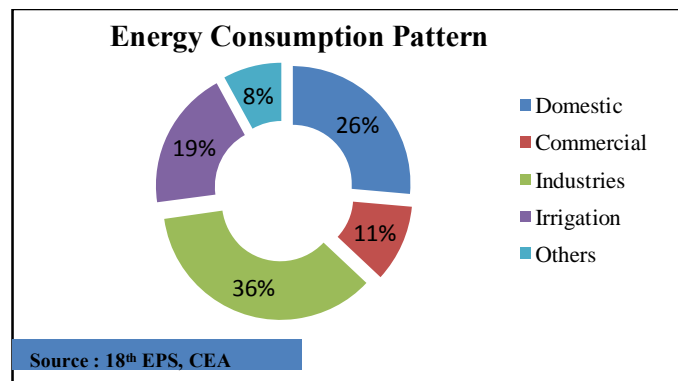
With the goal of reducing energy intensity of the Indian economy, Ministry of Power through Bureau of Energy Efficiency (BEE) has initiated a number of energy efficiency initiatives. The National Mission for Enhanced Energy Efficiency (NMEEE) aims to strengthen the market for energy efficiency by creating a conducive regulatory and policy regime. It seeks to upscale the efforts to unlock the market for energy efficiency and help achieve total avoided capacity addition of 19,598 MW and fuel savings of around 23 million tonnes per year at its full implementation stage. The programmes under this mission have resulted in an avoided generation capacity addition of about 10,000 MW between 2005 and 2012 with government targeting to save 10% of current energy consumption by the year 2018-19. Demand Side Management programmes have been launched to replace existing low-efficiency appliances

2.0 Background on Energy Efficiency

Urbanization is a cornerstone of sustainable development. Currently, more than half of all people live in an urban area. By 2050, the share of the world's urban population will increase to 64%, with 94% of that increase occurring in developing countries. India's urban population almost doubled from 222 million in 1990 to an estimated 410 million in 2014 and is expected to reach 800 million by 2050. Rapid urbanization, however, has led to massive demand for energy to power economic activity, expand basic infrastructure, and deliver municipal services. Buildings are the largest energy consuming sector in the world, and account for 42% of total final energy consumption (IEA 2004) and an equally important source of carbon dioxide (CO₂) emissions. Cities now consume about two-thirds of the world's energy, and are responsible for about 70% of the world's GHG emissions.

All India electricity consumption is expected to grow at 7% (CAGR) in the period up to 2020. India became the world's third largest producer of electricity in the year 2013 with 4.8% global share in electricity generation surpassing Japan and Russia. Demand side measures focusing on energy efficiency can play a crucial role of moderating the increase in demand without compromising on the quality of output. This increase is driven by a number of factors, the most important of which are population, urbanization, increasing incomes and economic growth which lead to greater demand for energy services such as lighting, cooking, space cooling, mobility, industrial production, office automation etc. The Government of India is carrying out a range of interventions to enhance energy supply, and to ensure that electricity is available to all households on a 24x7 basis by 2019.

The Energy consumption pattern shows the typical energy consumption by different sectors i.e. Domestic (26%), Commercial (11%), Industries (36%), Irrigation (19%), Others (8%).



ADB (2005) identified investment potential of 165 million USD and 325 million USD in commercial and municipal sectors in energy efficiency enhancement projects. ADB (2013) estimated a yearly investment of USD 4.5 billion through 2020 to realize the energy conservation targets.

3.0 Urban Life-Energy: *Scenario in India*

Controlling energy consumption related to the daily activities of people in cities is referred to as “Urban-Life Energy” use. It is integral to mitigating the threats posed by hydrocarbon scarcity and climate change to India’s development in the coming decades. While improvements in the performance of technical systems and supply side management are necessary components of this urban-life energy use goal, they alone will not be enough. Demand side management is equally, if not even more, critical, most notably through:

- Advocacy and adoption of energy and carbon efficient lifestyles;
- Development of cities with an urban morphology that limit needs for mobility;
- Discouraging energy intensive consumption patterns through appropriate energy pricing and taxation

Urban-Life Energy covers six municipal sectors: passenger transport, municipal buildings, water and waste water, public lighting, solid waste, and power and heat. While India consumes a relatively small amount of energy in both absolute and per capita terms compared with other major economies such as the OECD countries or China. But energy consumption is growing rapidly, at 4.6% per year in 2000–13, which represents a doubling in 15 years. Ministry of Power, through Bureau of Energy Efficiency (BEE), has initiated a number of energy efficiency initiatives in the areas of household lighting, commercial buildings, standards and labelling of appliances, demand side management in agriculture/municipalities. These initiatives have resulted in an avoided capacity generation of 20,200 MW as on March 2016.

Globally, Mayors and local authorities are increasingly recognizing the economic and other benefits of climate action, and many are not only demonstrating leadership by taking action in their own cities, but engaging their peers and working to raise ambition through groups such as the C40 Cities Climate Leadership Group, Local Governments for Sustainability (ICLEI) and United Cities and Local Governments (UCLG).

4.0 Way Forward: *Local governments, energy and climate change*

As local governments manage or oversee all city activities and city development, they should play a central role in determining the energy and carbon emissions picture of their cities. They also have direct access to their citizens and are best placed to know their needs and to influence their behaviour. Every city is different – it has different resources at its disposal, different needs, different development paths and different mandates and powers. A city’s energy plan must be built on its particular needs and the resources at its disposal.

Local governments can make significant energy savings in their own operations, thereby saving money, setting a good example and even testing new technologies. Cities can engage in sustainable energy planning in three primary ways regardless of size or governance structure:

1. Cities are often large consumers of energy in buildings and public facilities, in water systems and in other capital infrastructure such as streetlights. Efficient energy use within the public realm is directly tied to cost reductions and provides the most direct incentive for local action.
2. Cities can promote efficient energy use and alternative resources in the private sector through their dominant role in shaping the built environment. Potential areas for action include improving building efficiency in existing construction, promoting energy efficiency in new buildings (in both commercial and residential sectors) and incorporating energy-efficient site planning and urban design in new development.
3. Cities can help shape long-term development patterns in order to promote location efficiency and reduce the effects of urbanization on the energy system and the environment in general.

It is imperative for cities to draw on what already exists in the energy planning arena by using best practice examples and building on them where needed lessons need to be contextualized and scaled to suit the local environment. Each city needs to carve out its own Energy Action Plan and Energy Management Policies that can help cities quickly identify under-performing sectors, evaluate improvement and cost-saving potential, and prioritize sectors and actions for energy efficiency (EE) intervention.

Energy Efficiency creates opportunities to move towards new technologies which make products more energy efficient than existing one. Energy Efficiency will not only reduce the need to create new capacity requiring mobilisation of huge resources but will also result in substantial environmental benefits in terms of reduced greenhouse gas emissions. Energy Efficiency can hugely contribute in achieving the INDC (Intended Nationally Determined Contribution) commitment at COP 21, Paris where India commits to cut the intensity of carbon emission by 33-35% of 2005 level by 2030.

The main focus areas include buildings, LED lighting, appliances, energy-intensive industries, and agriculture. The key policies and schemes to achieve these goals in each of these areas, as provided in the next section.

5.0 Key Policies and Schemes of the Government of India – Governance

The Energy Conservation Act (EC Act) was enacted in 2001 with the goal of reducing energy intensity of Indian economy. Bureau of Energy Efficiency (BEE) was set up as the statutory body on 1st March 2002 at the central level to facilitate the implementation of the EC Act. The Act provides regulatory mandate for: standards & labelling of equipment and appliances; energy conservation building codes for commercial buildings; and energy consumption norms for energy intensive industries.

The regulatory framework includes provisions to:

- Mandate standards and labels for energy consuming equipment and appliance;
- Mandate energy consumption norms for energy intensive industries; and
- Prescribe an Energy Conservation Building Code for commercial buildings.

1. **Buildings:** Government of India launched Energy Conservation Building Code (ECBC) in 2007 to set the minimum energy performance for the commercial buildings in India. Bureau of Energy Efficiency (BEE) introduced the Energy Conservation Building Code (ECBC) in the year 2007. Presently it is a voluntary code for all new commercial buildings with a connected load of 100 kW and above. While the ECBC has been developed by BEE, its enforcement lies with the State governments and urban local bodies through notification within their states. Many states have gone ahead with ECBC amendment and adoption for their states.

Energy efficiency in existing buildings is also a key thrust area of the Government of India, and the voluntary scheme for star rating of commercial buildings was developed with an aim to create a market pull for energy efficient buildings. Currently the scheme is applicable to 4 categories of buildings i.e. Day use Office buildings, Shopping Malls, BPOs and Hospitals.

The electricity saving potential through the various interventions has been estimated as under:

<i>Commercial Buildings</i>	<i>Saving potential</i>	<i>Instruments</i>
<i>New</i>	25 - 35%	Mandatory implementation of Building Codes (ECBC)
<i>Existing</i>	10 - 15%	Energy efficiency upgrades through retrofits and star labeling
<i>Residential Buildings</i>	20%	Through appliance efficiency and passive design features.

2. **Standards & Labelling Programme:** Government of India initiated the Standards and Labelling (S&L) programme for equipment and appliances was initiated by Government of India in 2006, and the key objective of this programme is to provide the consumer an informed choice about the energy consumption, and thereby the energy cost saving potential, of the product. Energy labels, or more explicitly star label or energy-efficiency labels, are informative labels affixed to manufactured products to indicate the product's energy performance. The energy parameters indicate quantitatively how much energy is consumed or the energy efficiency rating of that product, and other related product details. Currently labelling has been

introduced for 21 appliances and is mandatory for the following 5 appliances: room air-conditioners, tubular fluorescent lamp, Frost free refrigerator, distribution transformer and cassette type air conditioner; and is voluntary for the rest.

3. **Demand Side Management:** Government of India has promoted Demand Side Management (DSM) programmes municipal sector so as to enable existing equipment to be replaced by energy efficient equipment. Demand-side management has been traditionally seen as a means of reducing peak electricity demand. DSM has a major role to play in deferring high investments in generation, transmission and distribution networks. These DSM activities are being promoted through Energy Service Companies (ESCOs) who invest in the projects, and are paid over a multi-year period based on maintenance of the energy savings due to their investments.

6.0 Good practices in the area of energy efficiency

The impact of Energy Efficiency schemes and projects has significant in achieving energy saving.

1. Hon'ble Prime Minister of India launched the 100 cities National Programme on 5th January, 2015 to convert conventional street lights with smart and energy efficient LED street lights and the Domestic Efficient Lighting Programme (DELP) to provide LED lights to domestic households. About 770 million incandescent bulbs are targeted to be replaced during the next 3 years with LED bulbs. This is likely to result in a total reduction in connected load of 20 GW and energy savings of 100 BU annually. The total connected load of street lights across the country of around 3400 MW, can be reduced to 1400 MW by replacing them with LED based street lights during the next 3 years. More than 70,000 street lights have been replaced with LED lights in the city of Vizag, Andhra Pradesh.
2. UJALA (Unnat Jyoti by Affordable LEDs for All) scheme launched on 30th April, 2016 under the Domestic Efficient Lighting Programme (DELP) is set to distribute LED bulbs that will be available for purchase from all the electricity bill cash deposit counters maintained by DISCOMs and separate kiosks to distribute the LED bulbs. The government has target of distributing 3 crores LED bulbs during the first leg of its implementation. The scheme is expected to help in reducing the carbon emission by 1%.

3. Availability of adequate and credible data is extremely essential for developing an effective policy framework. Energy benchmarking of buildings can help in creating a whole building energy consumption profile of a group of buildings characterized by their primary use, construction, physical, geographic and operating characteristics. Bureau of Energy Efficiency project undertook an exercise for collection of data for upcoming and existing commercial buildings throughout India for its analysis and establishment of energy performance benchmarks for various categories of buildings keeping in mind the climate zone.

7.0 Products/Models for exhibition:

A. *Cutting Edge Technology*

- **Solar Light pipe Tubular day lighting System:** These are products which can capture sunlight and deliver light in buildings without converting solar energy into electricity. The light is in usable form without ultraviolet radiation, heat or glare. These products reduce the energy demand and improve the occupants' health in buildings. A working model of this type of lighting system is installed at Centre of Excellence for Training in Energy Efficiency, Chennai of National Productivity Council.
- **Bamboo corrugated sheet:** the bamboo mat corrugated sheet is an ideal substitute for asbestos and galvanized steel sheets for roofing purposes. The Indian Plywood Industries Research & Training Institute (IPIRTI) has developed this technique, which has proved to be a boon for the housing industries among North Eastern states. Sinusoidal wave platens have been designed for hot pressing phenol formaldehyde resin coated and preservative treated bamboo mats into corrugated sheets. These sheets are environment friendly, energy efficient and possess good fire resistance as well.
- **Rice Husk Ash Concrete:** Rice Husk Ash (RHA) produced after burning of rice husks can be used as an admixture for concrete. RHA has high reactivity and pozzolanic property, which improves the workability and solidity of the cement. RHA concrete also reduces heat evolution during slaking, increases strength, permeability and durability by strengthening transition zone, modifying the pore-structure and also plugs the voids in the hydrated cement paste through the pozzolanic reaction. RHA-concrete can prove to be boon for the cement and the concrete industry in several parts of the country because of large production of paddy in India.

- **Plastic Bricks:** Plastic bricks have been extensively used in highway and railway infrastructure. Plastic from the millions of the bottles and bags are melted and moulded in the form of bricks are used in the construction of the roads. This has considerably enhanced the elastic nature of the surface helping in more load-bearing capacity of highways. In India, this technology has been initiated on an experimental basis for railway sleepers, but was stopped since the danger to fire is a major concern.
- **Bagasse Particle Board:** Bagasse is the residual pulp from sugarcane after the juice has been extracted. A considerable amount of excess bagasse generated from sugar mills is left to rot or burnt as fuel for boilers. This by-product is now being used as a substitute for wood in particle boards that are light and low cost. Bagasse-based composites offer potential as the core material for laminated floors, replacing high-density and expensive wood fibre board. As such, bagasse does not have enough strength and water resistance to be used on its own. However, if it is made into a laminated particle board with resin as a bonding agent and wax as dimensional stabilizer, then it can be used for laminated floor and furniture applications.
- **Double Glazed Windows:** Double glazed windows help to stop heat ingress in the buildings and maintain the desired temperature. **NPC HQ building has all the windows in form of double glazed windows.**
- **Few other sustainable building construction materials may be found in industry.**

B. Governance

- Initiatives and current status on development of energy efficiency in urban development and buildings sector
- National Mission on Enhanced Energy Efficiency (NMEEE)
- Energy Conservation Act 2001
- Energy Conservation Building Codes
- Star Rating Scheme of BEE for Appliances

C. Innovative Business Model

- UJALA (Unnat Jyoti by Affordable LEDs for All) Scheme
- Demand Side Management for Energy Efficiency improvements

7.0 Energy Efficiency Institutions and their services offered

- National Productivity Council (NPC)
- Indian Green Building Council (IGBC)
- The Energy and Resource Institute (TERI)
- School of Planning and Architecture (SPA)
- Bureau of Energy Efficiency (BEE)
- Energy Efficiency Services Limited (EESL)

8.0 Mode of showcasing in Astana

- i. Display through translites, display boards/panels and cut-outs (about 30-40 nos.)
- ii. Table top models/ prototype/actual product demonstration (about 10 nos.)
- iii. Video films
- iv. Display of real time UJALA Dash Board
- v. Publications on standards and labelling, energy efficiency etc.
- vi. India Pavilion brochure and distribution material for individual items
- vii. Posters

Astana (Kazakhstan)

Expo 2017

Theme "Future Energy"

Sub Theme

Reducing CO₂ Emissions – Renewable Energy

Submitted by

Government of India

1.0 Overview

India has recorded impressive rates of economic growth in recent years, which provide the basis for more ambitious achievements in the future. However, a healthy rate of economic growth equalling or exceeding the current rate of 8% per annum would require major provision of infrastructure and enhanced supply of input such as energy. The average annual energy consumption in India in 2011 was only 0.6 tonnes of oil equivalent (toe) per capita as compared to global average of 1.88 toe per capita. The per capita electricity consumption stands low at 917 kWh, which is barely one third of the world's average consumption.

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The per capita GDP in USD of 1408 in 2012 is projected to grow to USD of 4205 by 2030 and similarly the per capita electricity demand of 776 TWh in 2012 has a projection of 2499 TWh by 2030. Moreover, there is a challenge for keeping the pace of development and meet the demand without compromising with the environment. Understanding the future requirements, India has taken visionary steps to address these challenges by giving emphasis on clean energy and taking suitable measures for energy efficiency, besides, adopting the clean technologies.

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- To create an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030.

Promotion of Clean Energy

India is running one of the largest renewable capacity expansion programs in the world. Between 2002 and 2015, the share of renewable grid capacity has increased over 6 times, from 2% (3.9 GW) to around 13% (36 GW). This momentum of a tenfold increase in the previous decade is to be significantly scaled up with the aim to achieve 175 GW renewable energy capacity in the next few years. Indian has taken a leadership role by creating the International Solar Alliance (ISA) with its interim headquarter in New Delhi and has also contributed INR 175 crore for ISA corpus fund and also for meeting expenditure from the initial five years.

ISA is a part of Prime Minister's vision to bring clean and affordable energy within the reach of all and create a sustainable world. It will be a new beginning for accelerating development and deployment of solar energy for achieving universal energy access and energy security of the present

and future generations. ISA will be dedicated to promotion of solar energy for making solar energy a valuable source of affordable and reliable green and clean energy in 121 member countries.

2.0 Background on Renewables

Over the years, renewable energy sector in India has emerged as a significant player in the grid connected power generation capacity. It supports the government agenda of sustainable growth, while, emerging as an integral part of the solution to meet the nation's energy needs and an essential player for energy access. It has been realized that renewable energy has to play a much deeper role in achieving energy security in the years ahead and be an integral part of the energy planning process.

The Ministry of New and Renewable Energy (MNRE) is the nodal Ministry at the federal level for all matters relating to new and renewable energy. The Ministry has been facilitating the implementation of broad spectrum programs including harnessing renewable power, renewable energy to rural areas for lighting, cooking and motive power, use of renewable energy in urban, industrial and commercial applications and development of alternate fuels and applications.

The Department of Science and Technology (DST) is promoting long term research in the area of solar cells based on earth abundant materials, novel device architecture which may eventually find applications in niche areas. Recognizing the inherent strengths of the country in thermal technologies, the research is being conducted to address the issues in solar thermal of achieving required temperature, developing high temperature coatings, addressing phase flows challenges as well as utilization of process heat for non-power applications. Innovative cogeneration configurations producing power, desalination, cooling etc. are also being attempted. Recognizing the country's need for distributed power generation, research on mechanical test loops specifically suited for these applications is promoted through national as well as international co-operation.

The initiative of the department in solar energy is positioned at the upstream end of the research to promote novel ideas. It is envisaged that the promising ideas and learnings would eventually be dovetailed in National missions being implemented by MNRE and Ministry of Power for wider applications.

3.0 Global Warming and Renewable Energy

Today global warming is a well-known phenomenon and the whole world is looking for appropriate solutions. Renewable energy obtained from natural resources is one of the option to provide green and clean energy without emission of green-house gases. India has assumed responsibility and is committed before the world to contribute in mitigation of global warming through application of renewable energy, energy efficiency measures, reducing fossil fuel based power generation and transport applications and also to reduce the effect of climate change.

4.0 Renewable Energy Potential

India has an estimated renewable energy potential of about 900 GW from commercially exploitable sources viz. Wind – 102 GW (at 80 meter mast height); Small Hydro – 20 GW; Bio-energy – 25 GW; and 750 GW solar power, assuming 3% wasteland is made available.

5.0 Renewable Energy Targets

Articulating the future of renewable as “moving from megawatt to gigawatt”, the Government of India quickly worked towards laying down actionable plans for the Renewable Energy sector to make a quantum jump.

The Government has up-scaled the target of renewable energy capacity to 175 GW by the year 2022 which includes 100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro-power. The capacity target of 100 GW set under the National Solar Mission (JNNSM) will principally comprise of 40 GW Rooftop and 60 GW through Large and Medium Scale Grid Connected Solar Power Projects. With this ambitious target, India will become one of the largest Green Energy producers in the world, surpassing several developed countries. The total investment in setting up 100 GW will be around Rs.6,00,000 crore.

Many investors and stakeholders have committed their investments in the sector by taking up projects in different parts of the country. The Government has laid a strong foundation for the penetration of renewable energy in India in the coming years.

6.0 Achievements and Initiatives on Renewable Energy

- The Government has up-scaled the target for overall renewable energy capacity by more than 5 times to **175 GW by the year 2022** which includes 100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro-power.
- A total of **42755 MW of grid-connected power generation** capacity from renewable energy sources like solar (6763 MW) and wind (26770 MW), Small Hydro Power (4275 MW), Bio-Power (4832 MW) and Waste to Power (115 MW) stands installed in India as on 30th April, 2016. During current year a target of 16,660 MW has been set by the government from renewable power.
- A total of **7060 MW of grid-connected power generation** capacity from renewable energy sources like solar (3019 MW) and wind (3423 MW), Small Hydro Power (218 MW), Bio-Power (400 MW) has been added during 2015-16 in the country against target of 4,460 MW.
- **International Solar Alliance** was launched as a special platform for mutual cooperation among 121 solar resource rich countries lying fully or partially between Tropic of Cancer and Tropic of Capricorn at COP21 in Paris on 30th November, 2015 to develop and promote solar energy, with its headquarter in India. It is the initiative in which India is leading and can be showcased in the International Forum.
- **First Renewable Energy Global Investors Meet (Re-Invest)** held. Received total commitments of **266 GW by Power Producers** in the solar, wind, small hydro and bio energy sectors and **41 GW by Manufacturers** in the solar and wind energy sectors. India is organizing global investors meet on every alternate years.

- **The concept of solar park has received special attention in the country. So far, 33 Solar Parks have been sanctioned for total capacity of 19,900 MW in 21 states.**
- A massive Grid Connected Solar Rooftop Programme launched with 40 GW target. State Electricity Regulatory Commissions of **26 States/UTs notified regulations** for net-metering/feed-in-tariff mechanism. **Rs.5000 crore approved for solar rooftops.**
- **Rs.38,000 crore Green energy corridor** is being set up to ensure evacuation of renewable energy.
- **Clean Environment cess increased 8 times** from Rs.50 to Rs.400 per tonne on coal to finance Clean Energy Projects and Ganga Rejuvenation. This will make available around Rs.40,000 crore/year.
- **A special programme for 100,000 solar pumps launched of which 31,472 Solar Pumps installed in 2015-16**, higher than total number of pumps installed during last 24 years i.e. since beginning of the programme in 1991.
- Surya Mitra scheme launched for creating **50,000 trained personnel in 5 years. Over 2000 Surya Mitra's have been trained so far** and more than 2000 are undergoing training.

7.0 India Pavillion in Astana

The india pavillion will focus on development of renewable energy in India with focus on solar energy and the international solar alliance created by India. International Solar Alliance (ISA) is conceived as a coalition of 121 solar resource rich countries lying fully or partially between Tropic of Cancer and Tropic of Capricorn to address their special energy needs and will provide a platform to collaborate on addressing the identified gaps through a common, agreed approach. The overarching objective is to create a collaborative platform for increased deployment of solar energy technologies to enhance energy security & sustainable development; improve access to energy and opportunities for better livelihoods in rural and remote areas and to increase the standard of living.

8.0 Showcasing of Renewables in Astana

A. Scientific Research

- Micro Solar Dome (DST)
- Solar Inverters (DST and MNRE)
- Concentrated solar thermal power with storage (1 MW el. (3.5 MW) solar thermal power plant with 16 hours thermal storage for continuous operation) (MNRE)
- Hydrogen based vehicles (MNRE - NISE)

B. Cutting Edge Technologies

➤ Grid Connected Renewable Power

- Solar power plants/ solar parks,
- Wind power plants/ wind farms,
- Biomass power plants,
- Bagasse based cogeneration power plants,
- Small hydro power plants,
- Grid connected solar rooftops

➤ Off Grid Renewable Power

- Solar water heaters,
- Solar home lighting systems in rural areas,
- Concentrated solar technology based steam generating systems for cooking/process heat,
- Solar street lighting systems,
- Rural electrification through renewables,
- Biomass gasifiers,
- Solar cooking systems,
- Biogas plants for rural applications
- Wind-solar hybrid systems

➤ Other Technologies

- Solar-biomass hybrid power system (DST)
- Transparent conductive oxide coating unit suitable for thin film solar cells (DST)
- Solar sea water desalination & thermal storage unit (DST)
- Shallow emitter silicon solar cells (high efficiency > 18%) and modules process technology (DST)
- Improved two stage biomass gasifier system for thermal and power application (TERI)
- Solar radiation resource assessment (MNRE – NIWE)

➤ E- mobility

- Electric vehicles
- Blending of Bio diesel

C. Innovative Business Models

- Viability Gap Fundings for Solar Power
- Low cost fundings
- Direct Incentives
- Generation based incentives
- Renewable energy service companies model (RESCO)

D. Governance

- International Solar Alliance
- National Solar Mission for Solar Energy Promotion
- Fiscal incentives i.e., income tax exemptions, custom and excise duty concessions for renewables
- National Level Schemes on Solar, Wind, Biomass
- Green Energy Corridors
- National Level Institutions & center of excellence for providing technical supports for renewables
- Technology Business Incubator (DST)
- Mission Innovation for clean energy

E. Renewable energy institutions and their services offered:

- National Institute of Solar Energy
- National Wind Energy Institute
- National Institute of Bio-Energy
- Solar Energy Corporation of India
- Indian Renewable Energy Development Agency
- Center of excellence on green building and solar passive architecture at CEPT University

9.0 Mode of showcasing in Astana

- viii. Display through translites, display boards/panels and cutouts (about 30-40 nos.)
- ix. Table top models (about 10 nos.)
- x. Prototype/actual product demonstration (15-20 nos.)
- xi. Video films
- xii. Display of real time Solar Resource Assessment
- xiii. Publications on Renewables
- xiv. India Pavilion brochure and distribution material for individual items
- xv. Posters

The details of the technologies/models which will be displayed are given in Annexure

10.0 Support by MNRE and Department of Science and Technology

MNRE/DST will provide photographs, data and write-ups, models for display in expo on the topics given above. MNRE will interact with the designated agency and guide them for preparation of the display material. MNRE will share video films and video spots for display during the expo.

MNRE will request the concerned institutions/companies to display their products/models in the expo. The business development work may also take place at the expo through initiatives of these companies.

The officials of MNRE may be deputed for 1-2 weeks' period depending upon the approval of competent authority.

Scientific Team of DST will be deputed for the above expo for display of models / posters to highlights country's prowess in Clean Energy R&D as well as to coordinate and arrange experts talks / presentations. The composition of Scientific Team along with tentative dates and duration of the deputation for exhibition / expert talks will be conveyed based on specific request by ITPO, subject to necessary administrative and financial approvals from Government of India.

Showcasing of Renewables in Astana

A. Scientific Research

Product/Model – 1

Name of the product/Model: Micro Solar Dome

Type: Model

Description: Dome type day lighting device has a transparent semi-spherical upper dome made of acrylic material which captures the sunlight and the light passes through a sun tube having a thin layer of highly reflective coating on the inner wall of the passage. It contains a lower dome made of acrylic. The materials were selected after thorough research activities. High intensity of such day lighting device can be controlled by a filter fixed in the Lower part of the Dome.

Key Features:

- Suitable to install in any type of roof (Asbestos, GCI sheet, Mud tiles or concrete).
- Lighting solution for urban and rural poor, safe and hygenic
- Zero CO₂ emission lighting device.
- Low cost and long life. Easy to fix and maintain.
- Provides continuous 16 hours' light in a day/ night.
- Easy to fabricate.

High potential of employment generation.

Product/Model – 2

Name of the product/Model: Solar Inverter

Type: Model

Description: AC grid (415/440 V, 3-phase, 50/60 Hz) interface unit for solar /wind / hydro based renewable generation, rated at 55 kW/55 kVA, capable of full power output at extreme tropical ambient temperatures (55 °C). Modified design for cold climates. Efficiency at rated load in excess of 96%. MPPT feature incorporated for wind and solar (3 MPPT channels) generation. Paralleling algorithm for modular integration (IACS sharing scheme). Standard protection features incorporated.

Key Features:

- Capable of full power output till 55°C ambient temperature
- Unit can be easily paralleled in a modular manner in large solar farms
- Parallel operation software ensures sharing of transient currents
- Protection / alarms for grid UV/OV, Overload, islanding
- Ready for ancillary services: (in centrally coordinated mode, central controls not included in product package)

B. Cutting Edge Technologies

Product/Model – 3

Name of the product/Model: Solar-Biomass Hybrid Power System.

Type: Model

Description: Proof of concept at 200 kW scale using solar and biomass integrated in a seamless manner, power evacuation of the local grid to meet the requirement of agricultural pumping power. And develop models for rural energy generation plants.

Key Features:

- The test bed demonstrated in an actual village setting – a first of a kind of concept in this field using very innovative solar-biomass design
- capturing all the complexities to establishing a distributed plant using the natural topography that is available,
- manufacturing components in a manner that it can be scaled up by locally available skills,
- training the local manpower to operate the plant

Product/Model – 4

Name of the product/Model: Transparent Conductive Oxide Coating Unit suitable for thin film solar cells.

Type: Model

Description: A vacuum coating unit having a vertical in-line configuration for the deposition of Aluminum doped Zinc Oxide (AZO) coatings on glass sheets of size GEN 5.5 (1.1 m x 1.4 m). The system employs rotary magnetron sputter cathode for carrying out the deposition. The system consists of a loading/unloading station, and vacuum chambers comprising of load-lock chamber, and process chambers. All the required gadgetries for generation and measurement of vacuum are part of the system. The coating unit and the gadgetries are controlled via PLC based process automation. A conveyORIZED glass cleaning and etching machine. The machine is used for cleaning the glass substrates prior to coating, and for texturizing the films post sputtering to generate textures suitable for solar cells. The process technology for sputtering and etching to fabricate textured AZO based TCO substrates suitable for fabrication of single junction amorphous silicon solar cells.

As a proof of concept: fabrication of single junction solar cells and modules on the in-house developed AZO substrates and comparison with commercially available fluorine-doped tin oxide (FTO) substrates to demonstrate suitability of the AZO substrates for solar cells.

Key Features:

- Vertical design minimizing foot print and avoiding of debris from falling onto the substrate during coating.
- Frameless Glass Holding.
- Use of rotary Magnetron for sputtering ensuring higher target utilization and allowing higher power densities to be used which results in better properties and reduced operational cost.

Product/Model – 5

Name of the product/Model: Solar sea water desalination & thermal storage unit.

Type: Model

Description: Solar thermal desalination system at Narippaiyur owned by DST and bringing it to be at par with international standards. Various innovative features such as accurate focusing and tracking, high absorptivity and low emissivity characteristics in the absorbers to reduce the cost of solar energy production. Improved materials technology to resist corrosion of sea water inside the multiple effect distillator. Improved thermodynamic performance of thermo-vapor compressor and improved productivity in various effects of MED through analysis, instrumentation, data reduction and hardware modification. A test bed for the collection of scientific and technical data to develop an in-depth understanding of operating such a plant in coastline Indian conditions in the arid climatic zone. This data will be helpful to DST in its aspirations to develop indigenous sea water desalination technology. Produce high-purity desalinated water for specific industrial units and also by appropriate simple and inexpensive re-mineralization, produce desalinated potable water of the highest quality meeting requirements of the World Health Organization having low total dissolved solids. The project will comprise of the components operating at pre-pilot scale wherein the promising algal species will be grown in photo bioreactors (PBR) using hot hypersaline reject sea water from desalination plant. The PBRs will be designed with CO₂ mixing modules wherein CO₂ from agro-waste burning as well as algal biodigester will be captured to provide enriched CO₂ for algal growth. Optimized pre-treatment process will be developed to treat harvested biomass to ensure maximum conversion of biomass to biogas. The pre-pilot plant will also demonstrate efficient NPK recycle for algal growth.

Key Features:

- Employing integrated technologies by using renewable resources such as solar, agro-waste biomass, and sea water.
- Innovative technology for the combined production of power and high purity water.
- First-of-its-kind demonstration project which can be replicated along the coastal and arid coastal regions of India. These technologies can be replicated in various parts of the world where there is acute water shortage near the coast.
- Round-the-clock production of power and water that will exceed World Health organization (WHO) drinking water standards.
- Effective utilization of expanded steam from the turbine in greatly improves the economy of the system.

- The algae are processed to yield protein and other nutrients for human consumption, natural hormones for plant growth, and bio-methane as transportation fuel.
- Brine reject from the desalination system can be directly discharged into the sea without affecting the local system. No harmful chemicals are used. The system is maintenance-friendly.

Product/Model – 6

Name of the product/Model: Shallow emitter silicon solar cells (high efficiency > 18%) and modules process technology

Type: Product

Description: One of the biggest problems facing the world today is global warming caused by the emission of greenhouse gases (CO₂). The problem of Global Warming can be controlled by minimizing the emission of greenhouse gases by switching from oil, coal and gas to renewable energy. Govt. of India has also initiated several programmes including deployment of renewable energy solar photovoltaic power plants for reducing the CO₂ gas emission. Development of cost effective renewable PV power plants is key to reduce the cost of renewable solar PV power. R&D activities to increase efficiency of solar cells are one of the thrust areas of Govt. India, so as to reduce the cost of solar power. BHEL-ASSCP, Gurgaon (under BHEL Corp. R&D, Hyderabad) pursued a project for development of high efficiency >18% silicon solar cells with support from DST, Govt. of India under Solar Energy Research initiative (SERI) leading to cost effective solar cell modules. Developed process know how for Large area 156mm sq mono crystalline Si, high efficiency > 18.62% (avg.) solar cells.

Key Features: An industrial process for large area (156mm sq.), high efficiency (>18%) silicon solar cells have been established.

Product/Model – 7

Name of the product/Model: Improved two stage biomass gasifier system for Thermal and Power Application

Type: Model

Description:

The two-staged process is characterized by having pyrolysis and gasification in separate reactors with an intermediate high-temperature tar-cracking zone. This allows for a very fine control of the process temperatures, resulting in extremely low tar concentrations in the producer gas. The Energy and Resources Institute (TERI), under the support from Swiss Agency for Development and Cooperation (SDC), of Embassy of Switzerland, New Delhi, in collaboration with DTU and Sorena Sa, has evolved two stage biomass gasifier system based on DTU and TERI technologies which emits clean gas, thus minimizing the need for maintenance and other day-to-day operational problems.

Key Features:

- Multiple efficiency improvements in terms of energy efficiency, resource use efficiency and environmental benefits over the fixed-bed gasifier systems
- Overall efficiency improvements of about 50% due to reduction of parasitic loads as well as reduction in fuel consumption
- In two-stage gasifier, up to 30% moisture content biomass can be used which gives multi-fuel capability
- Lesser impurities such as tar in the raw gas results in production of clean gases in the exhaust
- Throat-less patented design
- Low initial investment
- Better conversion (solid gas) efficiency (>75%)
- Available in both, downdraft and updraft mode
- Can be customized for a variety of applications
 - Thermal application to meet the process heat requirement
 - Power application for rural electrification and captive use
 - Shaft power
- Substantial reduction in diesel/kerosene/furnace oil cost (since 3-4 kg of biomass can replace 1 litre of petroleum fuel)
- Use of castable insulation material in the fire box capable of withstanding high temperatures (upto 1860°C)

Product/Model – 8

Name of the product/Model: Wind-solar hybrid systems

Type: Model

Description: Wind and Solar PV systems will be configured to operate at the same point of grid connection. There can be different approaches towards integrating wind and solar depending upon the size of each of the source integrated and the technology type. On the technology front, in case of fixed speed wind turbines connected to grid using an induction generator, the integration can be on the HT side at the AC output bus. However, in case of variable speed wind turbines deploying inverters for connecting with the grid, the integration can even be on the LT side before the inverter i.e. at the intermediate D.C bus. The second important aspect would be related to the sizing – which would depend on the resource characteristics. In order to achieve the benefits of hybrid plant in terms of optimal and efficient utilization of transmission infrastructure and better grid stability by reducing the variability in renewable power generation, in the locations where the wind power density is quite good, the size of the solar PVs capacity to be added as the solar-hybrid component could be relatively smaller.

Product/Model – 9**Name of the product/Model:** Concentrated Solar Thermal**Type:** Model

Description: Solar thermal technologies convert solar energy to heat for use in heating water, domestic and commercial cooking, agricultural and industrial drying, water desalination, low and medium temperature industrial process heat, space conditioning (space heating, cooling), and refrigeration. Conversion of solar energy into thermal energy offers much better efficiency as compared to conversion to electricity using solar PV technology. Hence, the useful energy yield per unit of land area is higher for conversion to thermal energy than to electricity. Fifty-seven per cent (i.e., 240 Mtoe) of the final energy consumption in India is used for thermal applications. Industrial process heat, residential cooking, and water heating are the main thermal applications accounting for more than 90% of the thermal energy requirement.

Key Features:

- Cost effective / high output
- Relatively simple construction, modular design
- Innovative thermal storage concept
- Easy operation/ maintenance; all components available in India
- Inexpensive planar mirrors and MC-controlled tracking system
- Fixed receiver with no need for flexible high pressure joints
- No vacuum technology and no metal glass sealing
- Due to direct steam generation, no heat exchanger and low parasitic loads
- Efficient use of land; the dishes can be tightly placed
- Power on demand and high efficiency due to cogeneration

Product/Model – 10**Name of the product/Model:** Integrated Domestic Energy Systems**Type:** Model

Description: Integrated Domestic Energy Systems (IDES)is an integrated system that provides a clean cooking solution in addition to a solar panel, two light points and a mobile charging facility. Developed to address the other major concern of indoor air pollution in rural households, the system addresses basic lighting and cooking energy requirements and reduces emissions by 30%. The forced draft improved cook stove is improvised based on locally available materials and adapted to suit the region and usage behaviour and is designed to provide 4 hours of cooking time in a day.

Product/Model – 11

Name of the product/Model: Solar Water Heating

Type: Model

Description: Solar water heating systems use non-concentrating solar collectors (flat plate or evacuated tube), in combination with hot water tanks, as a sensible heat storage device. Solar water heating systems designed for buildings produce hot water up to 80 °C for bathing and other utilities. Solar water heating systems can operate either on the thermosiphon principle (natural circulation) or through pumped circulation (forced circulation). In India, thermosiphon systems are more prevalent in buildings. Domestic SWHs for individual houses are smaller systems with a collector area ranging from 1.5 m² to 10 m², and hot water storage capacity ranging from 100 to 500 litres. These systems have integrated backup heating systems in the form of an electrical resistance heating element in the water tank, to provide a complete hot water solution to the user.

Product/Model – 12

Name of the product/Model: Improved Biomass Cookstove

Type: Model

Description: Cooking practice is characterized by incomplete combustion of biomass fuels resulting in emission of toxic smoke. Women (and accompanying children) who get exposed to this smoke every day during cooking food in a mud stove, particularly in poorly ventilated kitchens, face increased risk of pneumonia, respiratory diseases, etc.

Product/Model – 13

Name of the product/Model: Floating solar water plants

Type: Model

Description: A floating mechanism is required for the Floating of Solar module .Here no cement, RCC structure is required, the output DC power which we get from the module is converted to AC by using an Inverter, Inverter is kept upon the floating structure. Then the output of the Inverter is fed to the local grid by using underground marine cable.

Product/Model – 14

Name of the product/Model: Off-Grid Solar Lightings

Type: Model

Description: Solar home lighting systems, solar lamps, solar lanterns, solar street lighting systems etc..

Product/Model – 15

Name of the product/Model: Solar Water Pumps

Type: Model

Description: Solar water pumping systems.

Product/Model – 16

Name of the product/Model: Solar Radiation Resource Assessment

Type: Model

Description: SRRA envisages assessment and quantification of solar radiation, data processing, quality of data, modeling and making of solar atlas of the country, besides the collection and analysis of solar and meteorological data. The project is implemented by National Institute of Wind Energy (NIWE), Chennai in two phases, in the first phase, 51 SRRA stations were set up by October, 2011, in 11 States 1 Union Territory and in the second phase, 60 SRRA stations (in 28 states and 3 UTs) and 4 Advanced Measurement Stations (AMS) by June, 2014. National Institute of Solar Energy (NISE) being primer institute in the field of solar energy research is playing major role in this SRRA program with its Calibration facility for calibrating the SRRA field radiation sensors as per international standards and well equipped Advanced Solar radiation resource measurement facility.

INDIA TRADE PROMOTION ORGANISATION

FINANCIAL BID

(On company's letterhead)
(To be submitted separately)

SUBJECT: "Conceptualization, planning, designing of India Pavilion on the basis on Main Theme & Sub-theme of Expo'2017 including utility services, dismantling after the expo, maintenance during Expo period etc of India Pavilion at Expo'2017, Astana – Kazakhstan (June 10 to Sep 10, 2017)".

NIT No. : 180/ITPO/Engg./Expo-2017/Astana/2016-17

Dated: _____

I hereby offer my rate for the above work a lump sum of Rs. _____ for the services mentioned in the Scope of Work at Clause 7 in the Bid Document plus prevailing Service Tax as applicable.

NOTE: Conditional offer will not be accepted by the competent authority.

DATE :

SIGNATURE OF AUTHORISED REPRESENTATIVE

Place :

NAME

COMPANY SEAL

(Please attach Authorization letter, if required)