

NTPC Limited

(A Government of India Enterprise)



Invites

Expression of Interest

(Eoi)

From

Any Indian/Global Company/their Consortium/Affiliates/Representatives

For Setting Up

- **Standalone Fuel-Cell based Backup power system with hydrogen production using electrolyser in NTPC premises at Noida**
- **Standalone Fuel-Cell based Micro-grid with hydrogen production using electrolyser in NTPC Guest House at Simhadri (near Visakhapatnam)**

DOCUMENTS OF EoI

This EOI document comprises of the following sections:

- (i) Section I : EoI Information
- (ii) Section II : Introduction
- (iii) Section III : Instructions to the Applicants
- (iv) Section IV : Consideration of Response
- (v) Section V : Application Form and Annexures

Section - I

Eol Information

(GLOBAL INVITATION FOR EXPRESSION OF INTEREST)

DETAILED NOTICE INVITING EXPRESSION OF INTEREST (EoI)

EoI No. NTPC/BD/EoI-04/2021-22

Date: 10.06.2021

NTPC/NTPC affiliates are Inviting Expression of Interest from Indian/Global Company/their Consortium/Affiliates/Representatives for setting up

- (a) Standalone Fuel-cell based Backup power system with hydrogen production using electrolyser in NTPC premises at Noida, Uttar Pradesh (herein after referred to as 'Pilot Project-1').**
- (b) Standalone Fuel-cell based Micro-grid with hydrogen production using electrolyser in NTPC Guest House at Simhadri (near Visakhapatnam) (herein after referred to as 'Pilot Project-2')**

1. NTPC Ltd. (A Government of India Enterprise), with its objective to become a key player in India's adoption of Hydrogen Economy, is currently exploring the possibility of creating a green alternative for Diesel Generators in backup power and microgrid applications and setting up fuel cell-based systems with in-house hydrogen production using electrolyser at NTPC premises on a pilot basis to analyse Fuel-cell based technology's technical and commercial feasibility as an alternative to Diesel Generators.

Accordingly, the Company, either directly or through any of its affiliate Company, intends to set up a Standalone Fuel-cell based Backup power system with hydrogen production using electrolyser at the NTPC premises in Noida, Uttar Pradesh, and a Standalone Fuel-cell based Micro-grid with hydrogen production using electrolyser at NTPC Guest House in Simhadri (near Visakhapatnam), as two separate pilot projects.

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2. In this regard, the Company Invites Expression of Interest (Eoi) from any Indian/Global Company/their Consortium/Affiliates/Representatives (**hereinafter called APPLICANT**). The participation in Eoi may also be done through consortium; however, the consortium shall have a lead partner. The Applicants have the flexibility to submit their Eoi for Pilot Project-1 or Pilot Project-2 or both as the case may be.

3. DOWNLOAD INFORMATION AND TIMELINES FOR SUBMISSION OF Eoi

a. Interested APPLICANTs may download the documents of Eoi free of cost from www.ntpctender.com & <https://eprocurementpc.nic.in>

b. **Last date for submission of Eoi** : **10.07.2021**

c. **Last date for queries/ seeking clarifications** : **05.07.2021**

d. **Date of opening of Eoi response** : **12.07.2021**

e. **Response Validity** : **10.07.2022**

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4. For consideration of EoI, APPLICANTS are required to email softcopy of EoI (separate EoI for each Pilot as applicable), completed in all respect, through email till the last date of submission of EOI to the following address: -

To: amittal@ntpc.co.in

CC to: manaji@ntpc.co.in;

prahul@ntpc.co.in

Additional General Manager (Business Development)

NTPC Limited

Room No. - 305

EoC Noida sector - 24, Noida

5. NTPC reserves the right to accept or reject any or all applications, cancel/withdraw the EoI process without assigning any reason whatsoever and in such case, APPLICANT shall not have any claim against NTPC arising out of such action. NTPC bears no responsibility or liability of any kind in reference to the EoI.

Section - II

Introduction

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1. INTRODUCTION

- i. NTPC Limited (www.ntpc.co.in) is a leading power generation company of India. It has been ranked No#2 Independent Power Producer (IPP) worldwide as per Platts (2019). The Company is listed on the Indian stock exchange with a market capitalisation of INR 833.12 billion.
- ii. NTPC Limited produces around 300 Billion units of electricity annually through its cluster of gas, coal, hydro and RE based power stations of more than 66 GW capacity spanning across the country. Further, NTPC plans a target capacity of 130 GW by 2032.
- iii. NTPC Limited has revenues from operations INR 977 billion (12.97 billion USD) through its paid-up equity of INR 98.94 billion (1.3 billion USD). NTPC group achieved a net profit of INR 101.12 billion (1.4 billion USD) in the financial year 2020 and has been consistently paying dividends to its shareholders for the last 26 years.
- iv. NTPC Limited, being the largest power generator in India, wants to play a key role in India's adoption of the hydrogen economy. Since backup power and microgrid are considered as use cases for early adoption of Hydrogen based technologies, NTPC wants to explore the feasibility of replacing Diesel Generators with Hydrogen based Fuel Cell- Electrolyser Systems in these applications and subsequently create products/solutions which are an alternative to Diesel Generators.

2. INTENT OF THE EXPRESSION OF INTEREST (EoI)

- i. **Pilot Project-1:** NTPC Limited intends to replace approximately 500 kW – 1000 kW of Diesel Generators for backup power at its offices in Noida with an Electrolyser- Fuel-cell based system. The system should act as a backup power supply source during power outages. The Hydrogen required should be generated using a suitable sized electrolyser placed at the same NTPC Premises. The indicative scheme is attached as **Annexure-IV**
- ii. **Pilot Project-2:** In a separate project, NTPC intends to set up a 50kW - Electrolyser- Fuel-cell based Microgrid system at one of its Guest Houses in NTPC Simhadri, Visakhapatnam as Pilot Project-2. The electrolyser will run in the day, produce enough Hydrogen and then provide electricity through the Fuel Cell in the night. The indicative scheme is attached as **Annexure-V**.

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- iii. The initiative intends to analyse the techno-commercial feasibility and test the solution at NTPC premises to prove the reliability, validate performance and subsequently develop product/solutions which is a green alternative to polluting diesel generators in backup power and microgrid applications.
- iv. There are multiple possible fuel cell and electrolyser technologies to create backup power and microgrid solution. The responses shall be evaluated with regards various factors with the key being expertise of the applicant, technology, capital cost, efficiency, reliability, maintenance challenges and contribution to capital investment.
- v. The interested applicants will specify the technical specification, the total estimated project cost and shall propose the financial contribution to be shared by themselves and by NTPC.
- vi. Based on the commercial feasibility of responses in the EOI, the Fuel-cell based backup power system may be implemented in NTPC office at Noida and Fuel-cell based microgrid at one of NTPC guest houses in NTPC Simhadri, Visakhapatnam. NTPC reserves the right to implement the project either on nomination basis or through Request for Proposal (RFP) process amongst the shortlisted parties identified through this Eoi Process.
- vii. The intellectual property generated from the pilot projects (a first of its kind in India) will be co-owned by NTPC and the applicant. The same may be monetised separately during the commercialisation of the technologies.
- viii. The applicant may submit an expression of interest for setting up either Project-1 or Project-2 or both of them.
- ix. The key roles and responsibilities of the stakeholders under the projects shall include but not limited to the following:

NTPC's Role:

- a. Agreed capital contribution for the procuring, installation and commissioning the system (NTPC shall provide milestone funding based on mutually agreed milestones)
- b. Facilitate the installation and commissioning of the system.
- c. Routine operation of the system
- d. Support in Data collection and analysing the performance of the system during testing and subsequent operation.
- e. Getting the required statutory clearances for installing the system.

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Applicant's Role:

- a. Agreed capital contribution for the procuring, installation and commissioning the system.
- b. Selection of the technology for fuel cell and electrolyser and design of the system which best fits the intended use cases.
- c. Engineering, supply of all parts of the systems, erection, testing and commissioning of the system, and integration to existing electrical system.
- d. Routine maintenance of the systems for a period of 3 years from the date of commissioning.
- e. Data collection and analysing the performance of the system during testing and subsequent operation.

The Applicants may express their interest in respect of their offerings along with other inputs as indicated in relevant Annexures/formats.

The response(s) received in the EoI will be utilised by NTPC for:

- a. Shortlisting of parties for jointly executing the pilot projects.

AND/OR

- b. Formulation of specifications for various systems/stages required for execution of pilot project(s).

Section - III

Instructions to the Applicants

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1. The Applicants should note that:

- a. Language of the responses to EoI or any query/ clarifications/ correspondences shall be in English only.
- b. For expression of interest, Application Form and Annexures given in Section-V shall be duly filled and sent to NTPC by the APPLICANT in hard as well as soft copy.
- c. Applicants should go through Section-I and Section-II thoroughly before filling and submitting the application form and annexures in Section-V.
- d. Applicants shall mention the name and contact details of two persons, with complete address, phone number and email id.
- e. NTPC Ltd. may, at its sole discretion, ask for additional information/ documents and/or seek clarifications from the applicant (s) after the deadline for submission of response, inter alia, for the purpose of removal of inconsistencies or infirmities in their responses.

2. Enquiries and clarifications

Any clarifications on the EoI may be sought to the following via email:

Pilot Project – 1

To: amittal@ntpc.co.in

CC to: manaji@ntpc.co.in

Pilot Project – 2

To: ritwickghosh@ntpc.co.in

CC to: prahul@ntpc.co.in

3. Corrigendum

At any time before the last date of submission of EoIs, NTPC may, for any reason, whether at its own initiative or in response to a clarification requested by an Applicant, modify the EoI document. The amendment will be posted on the website and will be binding on the Applicants and the Applicant will give due consideration to the same, while they submit their EoIs, and would invariably enclose documents/ information, as required, on account of the amendment, as a part of the EoI. NTPC may, at its discretion, extend the deadline for the submission of EoIs.

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4. Preparation of the response to Eol

The application of Eol consists of the following:

- (a) Annexure 1, 2 & 3 of Section-V

5. Validity of the responses

The applicant shall submit the responses which shall remain valid up to twelve (12) months after the response Deadline ("Response Validity"). NTPC reserve the right to reject any response, which does not meet the aforementioned validity requirement.

NTPC may solicit the applicant's consent for an extension of the period of validity of the response. The request and the response in this regard shall be in writing. In the event any Applicant refuses to extend its response validity as requested by NTPC, NTPC shall terminate processing of such applicant's responses. An Applicant accepting NTPC request for validity extension shall not be permitted to modify its response.

6. Submission of the response to Eol

The responses to the Eol are to be submitted in soft copy via below email format To: amittal@ntpc.co.in

CC to: manaji@ntpc.co.in

prahul@ntpc.co.in

Ref. Eol No.

Dated

Envelope: Original / Copy #

Due date of Opening: _____

Submitted to:

Name, designation & address of the concerned officer of NTPC

Submitted by:

Name, address & contact no. of the applicant

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All the pages of the response should be digitally signed by the authorised signatory in whose favour the Power of Attorney is issued.

The responses to the EoI should be submitted within the deadline at the address provided in the Section-I of this EoI.

7. Opening of responses to the EoI

The responses to the EoI shall be opened as per the time schedule 1500 HRS at date as mentioned in Section-I and will be communicated to the Applicants via email.

In the event of any of above dates falling on a day which is not a working day or which is a public holiday, the responses shall be opened on the next working day at the same venue and time.

8. Costs and expenses towards response to EoI

The Applicants shall be responsible for all the costs associated with the preparation of the response and participation in discussions and finalisation & execution of the documents related with this EoI, NTPC shall not be responsible in any way for such costs, regardless of the conduct or outcome of this shortlisting/ selection process.

9. Confidentiality

The Applicants undertake to hold in confidence this EoI and any document related or pursuant to this EoI and not to disclose the terms and conditions of the transaction contemplated hereby to third parties, except:

- (a) To their professional advisors;
- (b) To their officers, contractors, employees, agents or representatives, financiers, who need to have access to such information for the proper performance of their activities;
- (c) Disclosures required under applicable Law, without the prior written consent of the other parties of the concerned agreements.

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Provided that the applicant (s) agrees and acknowledges that NTPC may at any time, disclose the terms and conditions of this Eol and any document related or pursuant to this Eol to any person, to the extent stipulated under the applicable Law.

10. Disclaimer

- (a) This Expression of Interest (Eol) has been prepared by NTPC Ltd. for response from Indian/Global Company/their Consortium/Affiliates/Representatives for setting up Fuel-cell based backup power system with in-house hydrogen production using electrolyser at NTPC premises in Noida and for setting up Fuel-cell based Micro-grid with in-house hydrogen production using electrolyser in NTPC Guest House at Simhadri (near Visakhapatnam)
- (b) In submitting an expressed Eol in response to the Eol, the Applicants certify that it understands, accepts and agrees to the disclaimers on this page. Nothing contained in any other provision of the Eol nor any statements made orally or in writing by any person or party shall have the effect of negating or superseding any of the disclaimers set forth herewith.

Section-IV

Consideration of Response

RESPONSIVENESS/EVALUATION METHODOLOGY

1. Responsiveness check

The responses submitted by Applicants shall be scrutinised to establish interest in setting up Fuel-cell based backup power system with in-house hydrogen production using electrolyser at NTPC premises in Noida and/or setting up Fuel-cell based Micro-grid with in-house hydrogen production using electrolyser in NTPC Guest House at Simhadri (near Visakhapatnam). Responses shall be deemed non-responsive for following reasons:

- a. Responses that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney, applicable undertakings, provided in more details at annexure in Section-V;
- b. Responses not signed by authorised signatory and / or stamped in the manner indicated in this EoI;
- c. Material inconsistencies in the information/ documents submitted by the applicant
- d. An Applicant submitting more than one response to this EoI either itself or through an affiliate or subsidiary company;
- e. Response validity being less than that required as per Clause 5 of section-III of this EoI;
- f. Response being conditional in nature;
- g. Response not received by the response Deadline;
- h. Response having Conflict of Interest;
- i. Applicant delaying in submission of additional information or clarifications sought by NTPC, as applicable;

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All bids that shall meet the responsive check requirements set out above in this section of the EoI document shall be considered as responsive. In case of non-submission of relevant details as above, the responses may be considered as "**Non-responsive**", at the sole discretion of NTPC and will not be considered further.

2. EVALUATION METHODOLOGY

- a. The proposals will be evaluated based on applicant's expertise/credentials, the technology, timelines, equipment cost, technology support etc. One of the key criteria shall be the cash equivalent support (funding/ equipment/ service) being provided upfront by the applicant.
- b. If the applicant proposes to bring financial support/grant from third party agencies/ government institutions, either in India or abroad, then arranging such funding support/grant shall be the responsibility of the Applicant. NTPC shall not be party to any agreement between the applicant and the funding agency and shall bear no obligations.

Section-V

Application Form & Annexures

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Annexure-1

FORMAT FOR COVERING LETTER CUM UNDERTAKING

(The covering letter should be on the Letter Head of the Applicant)

Date : _____

Place : _____

To,

.....

Sub.: (INVITATION FOR EXPRESSION OF INTEREST)

Ref.: Eol No. _____, dated _____ (the "Eol")

Dear Sir,

We, the undersigned [insert name of the "Applicant"] having read, examined and understood in detail the **(INVITATION FOR EXPRESSION OF INTEREST)**.

We confirm that neither we nor any of our Parent Company/ Affiliate/ Ultimate Parent Company has submitted response other than this response directly or indirectly in response to the aforesaid Eol.

1. We give our unconditional acceptance to the Eol, issued by NTPC, as amended. In token of our acceptance to the Eol, the same have been signed & stamped by us and enclosed to the response. We hereby confirm that the provisions of the Eol shall be binding on us.

2. We have submitted our response strictly as per provisions and formats of the Eol, without any deviations, conditions and without mentioning any assumptions or notes.

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3. We hereby unconditionally and irrevocably agree and accept that the decision made by NTPC in respect of any matter regarding or arising out of the EoI shall be binding on us. We hereby expressly waive any and all claims in respect of EoI process. We confirm that there are no litigations or disputes against us, which materially affect our ability to participate or function under the obligations with regard to EoI.
4. Details of the contact person are furnished as below:
Name :
Designation:
Address:

Contact numbers:

email id:
5. We are enclosing herewith the entire response containing duly signed formats in electronic format sent via email to: amittal@ntpc.co.in as per the EoI for consideration.
6. It is confirmed that our response is consistent with all the requirements of submission as stated in the EoI and subsequent communications from NTPC, if any
7. The information submitted in our response is complete, strictly as per the requirements stipulated in the EoI and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our response.
8. We confirm that all the terms and conditions of our response are valid for acceptance for a period of twelve (12) months from the response Deadline.
9. We confirm that we have not taken any deviation so as to be deemed "**Non-Responsive**" as stipulated in Section-IV of this EoI.
10. We understand that you are not bound to accept any response you receive.

We remain,

Yours sincerely

(Name, Designation and Signature of Authorized Person in whose name Power of Attorney is issued)

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Annexure-2

INFORMATION TO BE SUBMITTED BY APPLICANT

(Note: Documents in support of meeting the respective requirement shall be submitted by the applicant.)

1. Name of the Company/Lead Partner of Consortium:
2. Legal status of the Company/Consortium:
3. Brief description of the Company/Consortium including details of its business groups/subsidiaries/ affiliates:
4. Existing Manufacturing facilities – Locations, Capacity
5. Date of Incorporation:
6. Date of Commencement of Business:
7. Full address including Telephone nos. / Fax nos.:
 - a. Registered Office:
 - b. Head Office:
 - c. Address for communication:
 - d. Contact Details:
 - e. Office Address in India, if any:

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8. Documents to be enclosed:

Technical Credentials – Relevant Product/System catalogues, Experience /Reference List, Copies of Customer Certificates, Engineering strengths, collaborations/tie-ups with manufacturer (if applicable), quality accreditations, etc.

Financial Credentials – Copies of Audited Financial statements (Annual Reports) for last 3 years, Credit Rating, Market share (Domestic/International), Segmental Revenue in the applied category (ies).

9. Any other documents considered relevant.

(Sign & Company Seal)

Authorized signatory

Annexure-3

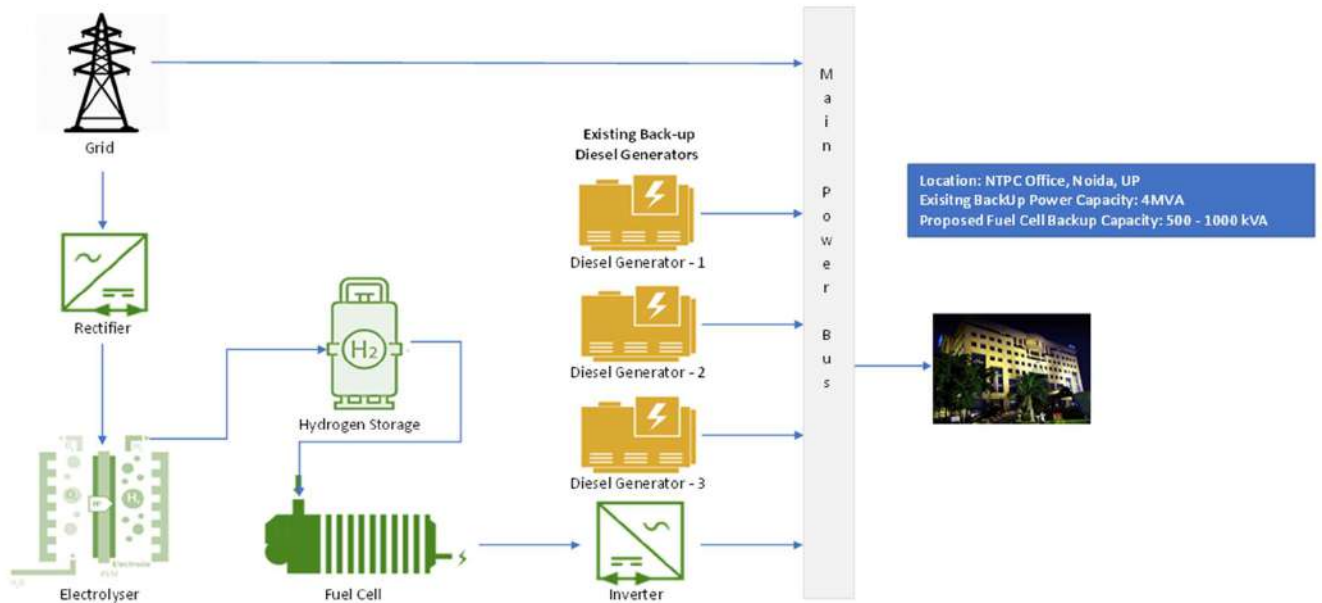
INFORMATION TO BE SUBMITTED BY APPLICANT

1. Suggested fuel cell and electrolyser technology with configuration which best fits the use cases
2. Technical details for the proposed system for pilot project and requirements to be made available at the locations of implementation.
3. Capital contribution by the applicant for the project (in percentage) of the total cost.
4. Estimated capital investment for the pilot projects with cost breakup of components.
 - a. Electrolyser
 - b. Fuel Cell
 - c. Compressor
 - d. Storage
 - e. Hydrogen purification system, if required
 - f. Transformer / Inverters/ control systems as required
 - g. Installation and commissioning
5. Estimated maintenance cost with spares and consumables for 3 years
6. Estimated operation cost for 3 years
7. An estimated timeline for implementing the pilot project
8. Previous experience of the applicant in implementing Hydrogen based fuel cell or electrolyser technologies
9. Previous collaboration with other organisations working in the fuel cell /electrolyser technologies
10. List of patents or other intellectual property owned by the applicant in fuel cell/electrolyser technologies

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Annexure-4

Pilot Project 1 - Standalone Fuel-Cell based Backup power system with hydrogen production using electrolyser in NTPC premises at Noida



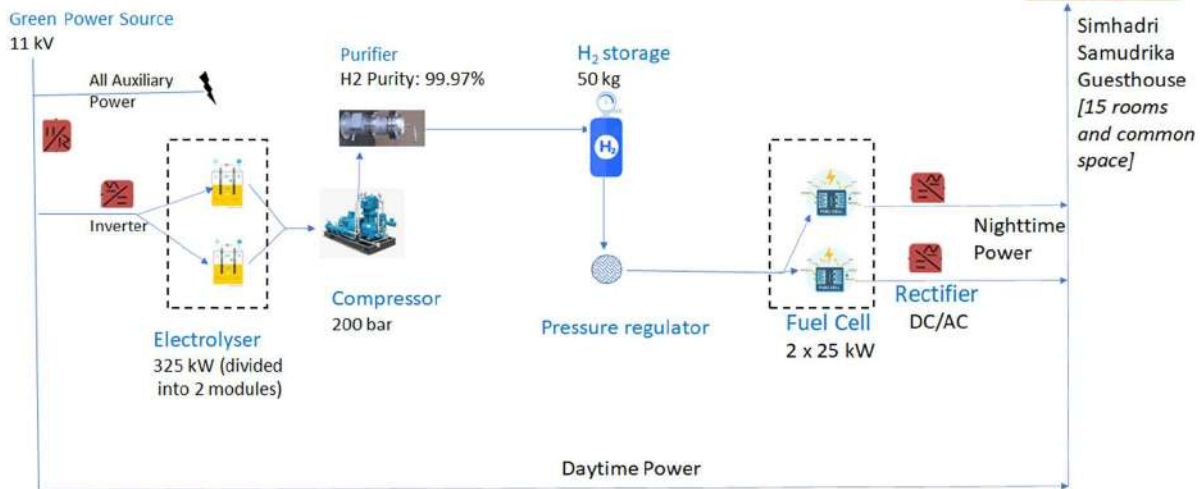
(GLOBAL INVITATION FOR EXPRESSION OF INTEREST)

Annexure-5

Pilot Project 2 - Standalone Fuel-Cell based Micro-grid with hydrogen production using electrolyser in NTPC Guest House at Simhadri (near Visakhapatnam)

Scheme: Simhadri Samudrika Guesthouse
Electricity supply
Fuel Cell running
Electrolyser Running

:Max load 50 kW
: 7am - 5 pm (10 hrs)
: 5pm - 7 am (14 hrs)
: 7am - 5 pm (10 hrs)



The system will have provision for automatic control for continuous cyclic operation of electrolyser operation in the daytime and fuel cell operation in the night-time. The change-over between the 2 equipment should be smooth such that the fuel cell stops and the electrolyser is in service at 7am while the electrolyser will stop at 5pm and the fuel cell should be in service and maintain load for the guesthouse as will be required from time to time. The system should also have provision for remote monitoring.