

Expression of Interest (EOI)
For
Development of PT for tapping of power from
Isolated Earth wire of EHV Line for Telecom
Application

Power Grid Corporation Of India Ltd.

(Telecom Department)

B-9, Qutab Institutional Area

Katwarai Sari, New Delhi-10016

August-17

Background:

1. Power Grid Corporation of India Limited (hereinafter referred to as POWERGRID) is a Central Government Enterprise and a Company incorporated under the Companies Act, 1956, with registered office at B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016.
2. POWERGRID also holds Unified License for Telecom business and is providing Telecom services using Transmission line infrastructure.
3. Digital India Program of Govt. of India envisages universal mobile connectivity. India has a large no of villages without mobile connectivity and countless sparsely populated areas with poor connectivity. Major constraint for improving the mobile connectivity are:
 - a) Mobile operators need to incur high capital cost towards Land and Towers
 - b) Non-availability of reliable power supply source making it dependent on DG power resulting into high operational cost.
4. The above constraints can be overcome to a large extent if transmission towers are used for mounting the telecom antennas and also for mounting the Base Transceiver System (BTS) and associated auxiliary power supply equipment for mobile communication by constructing a platform on the transmission line tower itself. Further, reliable power supply can also be provided for operation of BTS equipment from transmission line itself by adopting suitable technologies.
5. POWERGRID has about 2.5 Lakhs EHV T/L towers located across the country and most of them are in remote and sparsely populated area. In last few years, POWERGRID explored the telecom market to use these towers for mobile telecom communication also. However, it emerged that Transmission Line Towers can be utilized more effectively for Telecom Mobile communication purpose, if reliable power and space can also be provided locally.
6. **Tapping power from Earth wire of EHV Line-**

For Telecom BTS application, small amount of Power (about 2-3kW per telecom operator) is required. EHV Transmission line towers can be used for mounting Telecom BTS to provide Mobile & broadband coverage in remote areas. Reliable power supply to BTS can be provided from EHV lines itself by way of tapping power from Earth wire of EHV Line using Power PT.

400KV and above transmission lines are provided with two Earth-wires which are continuously charged from live conductors due to capacitive coupling. Based upon simulation study and field trial a demo set-up has been made at Jhatikara substation of POWERGRID. In this set up approx. 6 Km earth wire is isolated/ insulated from towers using 132kV class polymer insulators & arching horns across insulators to take care of

intended lightning protection. Induced charging current of isolated E/W is tapped at one point using Power PT & LA arrangement. In this set up one of the telecom operator has also installed his BTS and associated panel, batteries, charger etc. on the tower platform itself. The antennas have been installed on tower and the mobile system installed on the above tower at Jhatikara sub-station is working satisfactorily.

7. OBJECTIVE OF THIS EXPRESSION OF INTEREST (EOI) :

Objective of this expression of interest is to invite the agencies who are interested in developing the Power PT of at least 8KVA for field trial of their product. This will facilitate the execution of said solution on large scale throughout EHV transmission network in the country. Other terms and conditions are as under-

- a) The proposed solution shall be purely for product Development purpose and shall not have any commercial implication whatsoever on POWERGRID in the form of any commercial commitment or commercial engagement in future.
- b) The Smart Power Solution shall be developed/implemented by the joint efforts of POWERGRID and Agency. Location for test setup will be finalized on mutually agreed basis.
- c) The agency shall develop, design, manufacture, supply the POWER PT and perform field testing at their cost to draw power from isolated earth-wire of EHV Transmission line.
- d) POWERGRID shall in no case be responsible or connect with infringement of any right, copy right, patent or violation of any law regulation, treaty, court order or any other order of competent authority.

Further details shall be finalized based upon mutual discussion and agreement shall be signed before taking up the development of product and field trial.

8. Interested agencies may contact at the following address-

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