Guidelines for Application of RFP

Relating to Communication System for Smart Meters

November 2012

Tokyo Electric Power Company, Incorporated

1 Background

Tokyo Electric Power Company, Incorporated (Hereinafter “TEPCO”) conducted RFC (March – April 2012) concerning the communication part of smart meters in order to decide the specification, and received more than 300 comments from domestic and foreign countries.

Table 1. Comparison between new and old specification of TEPCO smart meter

	Old	New
Basic concept	Narrow-defined smart meter function which was defined in the Study Group on the Smart Meter Scheme by the government	Securing 3 basis; external interconnectivity (comply with international standard), technical expandability, cost reduction
Meter	Discrete-type of meter and communication	Either discrete-type or integrated-type
Communication (WAN)	Decide the communication system by mainly using it’s optical fiber network	Decide the communication system through RFP including other carriers’ infrastructure
Communication (route A)	Decide the communication system by mainly adopting wireless mesh network	Decide the communication system through RFP among 3 method (wireless star, RF mesh, PLC)
Communication (route B)	Comply with the interim results from “the Smart House Standardization Study Group”	Reflect the requirement based on the study in “Smart House/Building Standardization and Business Promotion Study Group” to RFP
Communication Protocol	IP implementation is not necessary (curb the amount of data)	IP implementation (consider future expandability)
Data Format	Proprietary specification	Adoption of international standard (IEC)
New services	Study in the next step	Reflect the request concerning the expandability for new services to RFP
Correspondence based on Reform of Electric Power Systems	Not assumed	Consider equal footing with other power companies based on Reform of Electric Power Systems

Also we presented three viewpoints revising the specification (①Achieving the intensive cost reduction, ②Securing the external interconnectivity, ③Securing the technical expandability) in “Basic Concept for Smart Meter Specification based on RFC”(*1) which was published on July 12. Based on this concept, we announced that we would conduct RFP in order to decide the communication system after October this year.

As indicated above, we are now publishing this “Guidelines for Application of RFP Relating to Communication System for Smart Meters.”

(*1) http://www.tepco.co.jp/en/press/corp-com/release/betu12_e/images/120712e0101.pdf

2 Purpose

This guideline defines the procedures for the participant (Hereinafter “Participant”) that are necessary to publicly invite and select the specifications and the supplier of the communication method and the communication equipment/system to be adopted for smart meters, which TEPCO plans to introduce through the request for proposals (RFP).

3 Subject of the public offering

3.1 Scope of RFP

The intended system shall be the whole communication system for smart meters, consisting of smart meters (communication part)(*2), FAN (including a concentrator), WAN, and Head end system (see Fig. 1).

Smart meters concerning route B communication functions will be explained at the RFP Information Session to be held in December.

(*2)Smart meters (communication part) : communication unit incorporated in meter (discrete-type), communication substrate (integrated-type), etc.

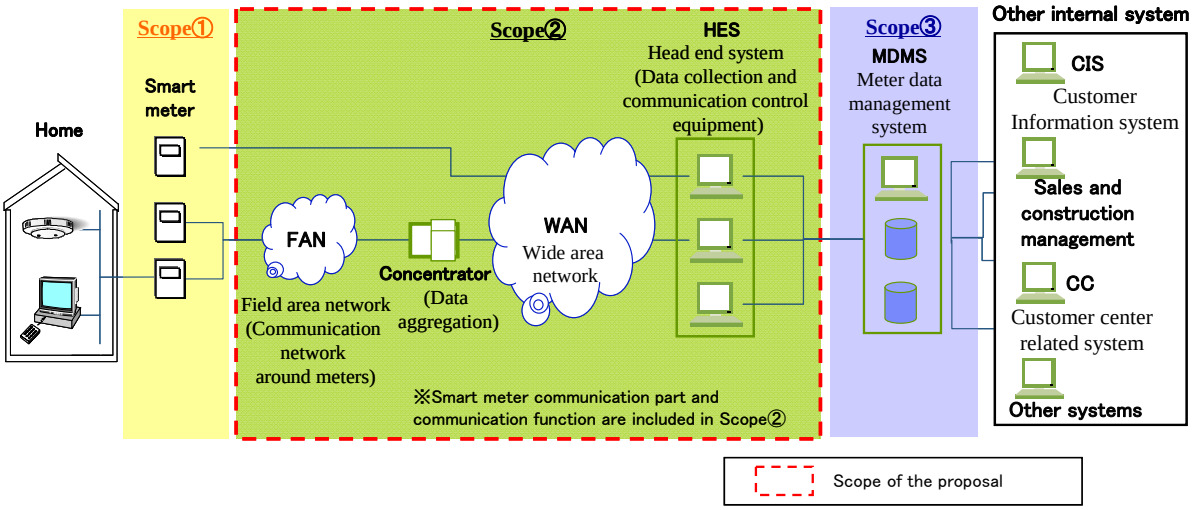

Fig. 1 Scope of the request for proposals

3.2 Basic policy for the public offering

We have set the following basic policies for this public offering.

(1) Ensure functionality and quality of the communication system for smart meters by means of the Participant's total proposals with their responsibilities, from smart meter communication part to Head end.

(2) Realize continuous and intensive cost reduction by adopting open specification and utilizing other carriers' infrastructure.

3.3 Guidelines for procurement and request for proposals

Participant shall submit total proposals (from smart meter communication part to head end) including the selection of communication system in right communication system in the right place for the whole service area of TEPCO considering geographies, technical characteristics and prices. (see Fig.2)

In this RFP, the integrator and the communication method for full-scale deployment (about 10 years) will be selected, and procurement of the equipments and the services procurement designated by the integrator for the initial development and deployment term for 3 years will be conducted.

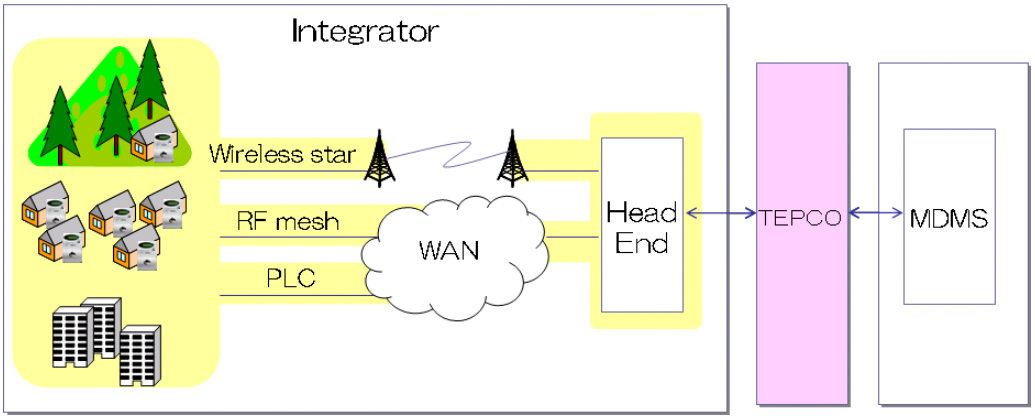

Fig.2 Policy of request for proposal

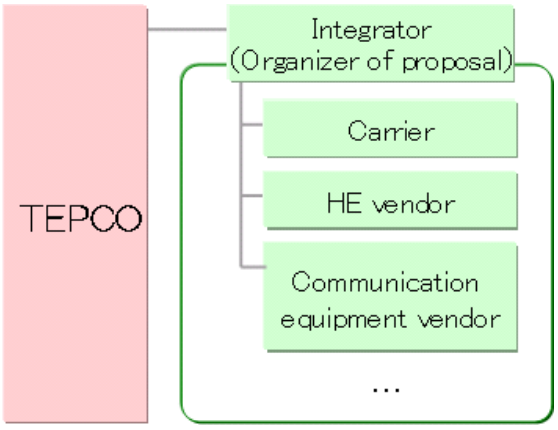

Fig.3 Procurement policy in the initial development and deployment term for 3 years

3.4 Basic requirements of the system

The communication system for smart meters must be capable of accurately and reliably performing the collection, setting and confirmation of meter data for all the installed smart meters, which are totally expected to approximately 27 million at a maximum. In addition, since the system would handle information on privacy of customers such as their electricity consumptions, it is necessary to provide a reliable security measure against threats such as unauthorized access from the outside, information leakage, and alteration, as well as to guarantee interconnectivity.

Furthermore, it is required to achieve thoroughgoing cost reduction through open specifications and secure flexible scalability of the system from the viewpoint of use of meter data by customers and other utilities intending to provide various energy-related services, and from the viewpoint of cost reduction.

Based on above, the basic requirements for the communication system for smart meters are as follows.

- Capable of accurately and reliably collecting, setting and confirming smart meter data.
  (Examples of specific requirement)
  - Collect 30 minute meter readings according to designated interval, and have the technical expandability to change the interval which is basically 30 minutes.
  - Recollect the missing 30 minute meter readings after confirming the connection recovery.
- Provide high-level security measures against the threats of illegal access, leaks or alteration of information and so on nevertheless before or after.
- Adopt international standards and technologies in principle.
- Deploy the right communication system in the right place, depending on the characteristics of each communication media.
- Capable of easily responding to addition or change of future communication system.
- Capable of flexibly responding to functional addition focusing on services expected to be introduced in the future.
- Capable of at operating full time continuously, and of monitoring the operation status of the whole system.
- Capable of easily recovering from disaster or failure.
- Capable of reducing the total cost for building, maintaining and operating the system.

3.5 System function

System function will be presented at the RFP Information Session to be held in December, 2012.

3.6 Schedule

The schedule before the development is shown in Fig. 4.

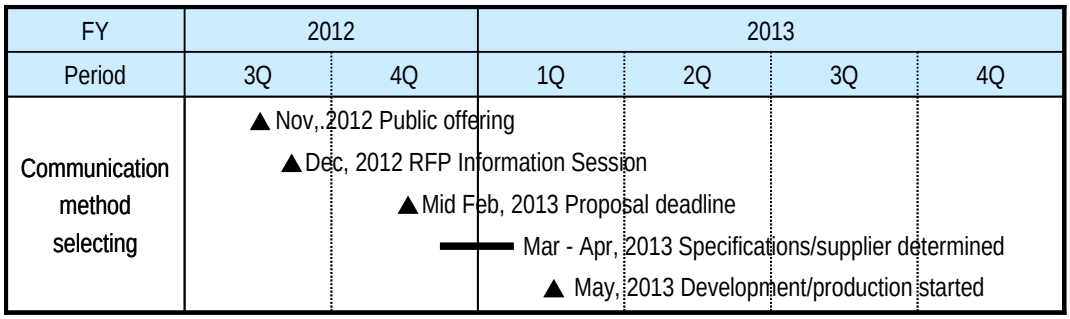

Fig.4 Schedule before development start

3.7 Eligibility

3.7.1 Technical requirements

The eligibility is to have the ability to propose/build a whole communication system for smart meters as a total solution, and the Participant shall meet the following terms.

- Have the ability to plan and conduct large scale project as indicated in section 3.4 (Decision to be made by past experiences etc.)
- Meet one of the following terms of ①～③
  - ① Acquired CMMI Level 3, and the certification is effective
  - ② Acquired ISO 9001 Certification and is still effective
  - ③ Have experience in building a large-scale communication system for smart meters in Japan or overseas
- Acquired ISO27001/ISMS certification or have established equivalent information security management system
- Set up a structure for responding inquiries within a day in Japanese from TEPCO's employees, etc. in case of failure or defect, and the structure has a sufficient technical level in order to support TEPCO's employees etc..

3.7.2 Other requirements

In addition to the above technical requirements, the Participant shall meet the following conditions.

- Financial strength is healthy and sufficient to conduct this public offering.

3.8 Other major conditions

3.8.1 Increase the number of suppliers

It is a pre-condition that communication equipment such as smart meters (communication part) and concentrators, and hardware of servers etc. can be procured from multiple manufacturers after the initial 3 year period of deployment, in order to achieve cost reduction and stable procurement.

In concrete terms, in the initial stage of the 3 year period of smart meter introduction, the Participant selects the manufacturer of each equipment, and after the initial stage, the Participant is required to increase the number of manufacturers of each equipment to 2～3 companies and arrange the

conditions so that TEPCO can directly introduce competitive procurement procedure.

3.8.2 Intellectual property rights, etc.

For procurement after the initial deployment period written in section 3.8.1, the Participant agree to the following conditions concerning intellectual property rights (patent, utility model right, design right and copyright) in advance. Other terms and conditions concerning intellectual property rights will be presented at the following RFP procedures.

- In case a the Participant holds the ownership (including co-ownership with a third party) of the intellectual property rights included in the final specification of the communication system for smart meters, the Participant grants a license to manufacturers who supply equipment consisting the communication system for smart meters on reasonable and non-discriminatory terms and conditions with respect to those rights.
- The terms and conditions of the above license are determined by negotiation between the Participant and the manufacturers directly.

3.8.3 Exclusion of antisocial forces

In case that the Participant is deemed to be an antisocial force (Gang, gangster, gang-related company/organization or its member, or other antisocial forces. The same shall apply hereinafter.), or has a relationship with any antisocial force, the Participant will be excluded from all the procedures concerning the RFP.

4 Selection method

Screening through eligibility review, evaluation of proposals and estimates, and evaluation of presentations will be conducted, and feasibility of the proposal will be checked through technical evaluation (POC: proof of concept), and then, adjustment of the contract with TEPCO will be made, and finally the supplier is selected. The selection will be fairly and strictly conducted in accordance with the evaluation criteria we have established in advance.

5 Public offering procedures

5.1 Process of RFP

The process from public offering to contract is as follows.

According to the RFP information from TEPCO, Participant make the proposal in cooperation with necessary companies. However, it is not necessary to identify the joint company at the time submitting the application of this public offering.

Information (facilities information etc.) from TEPCO that is necessary to prepare proposals will be provided at RFP Information Session. Inquiries and consultation of the provided information will be conducted during the Q&A process.

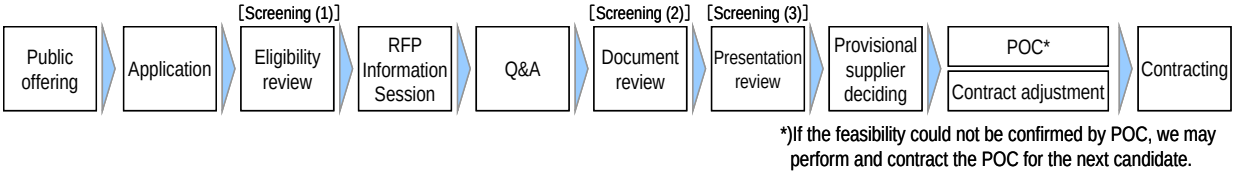

Fig. 5 Process of RFP

5.2 Application for public offering

In making your application, prepare and submit the following required documents.

Required documents:	(1) Application form (2) Application form for eligibility (technical requirements) (3) Latest company profile and statement of account (4) Written pledge (only who passed the eligibility review in section 5.3)
Submission method:	Postal mail Note: if not available before the closing time, please send the copy of the required documents (in PDF file) before the closing time by E-mail, and send the original documents by post without delay.
Delivery address:	Documents must be posted to: Distribution/Telecommunication Systems Procurement Group, Transmission & Distribution Procurement Center, Materials & Procurement Dept, Tokyo Electric Power Company, Incorporated 16th Floor, Toho Hibiya Building (HIBIYA Chanter), 1-2-2,Yuraku-cho, Chiyoda-ku, Tokyo, 100-8560 E-mail must be sent to: tepcosmartcom@tepco.co.jp
Submission closing time:	Must arrive before the following date and time: (1)～(3) November 27 (Tuesday), 2012, JST 24:00 (4) December 13 (Thursday), 2012, JST 24:00

5.3 Conduct of eligibility review

Based on required documents described in **section 5.2**, TEPCO will fairly and strictly conduct the eligibility review described in section 3.7. If the Participant is accepted to participate in the RFP Information Session after the review, we will notify by December 7 (Friday), 2012. If the Participant is refused to participate in the RFP Information Session as a result of eligibility review, we will notify so.

5.4 RFP Information Session

RFP Information Session will be held as follow. Time/Date and Place will also be noticed in

invitation of RFP Information Session.

Participation:	Applicant who passed the eligibility review in section 5.3
Time/Date:	December 14 (Friday), 2012 (Expected)
Content:	Provide RFP documents, and explain the requirements for the communication method, and the specifications of the communication equipment/system. Necessary information (meter location etc.) to propose communication method, and to estimate expense (construction fee, maintenance fee etc.) will also be provided.
Number of participants:	The number of participants allowed to attend the RFP Information Session is 2 people per company.

5.5 Schedule after the RFP Information Session

The supplier will be selected through screening, adjustment, etc. based on the schedule indicated in **section 3.6** and the process described in **section 5.1**. Details of the schedule will be provided at the RFP Information Session.

5.6 Handling of the materials provided by TEPCO

RFP Documents with attachment (*3), and partially including electronic data, will be provided from TEPCO at the RFP Information Session. Required document (4) written pledge in **section** 5**.2**, must be submitted in order to protect TEPCO's confidential information contained in the RFP.

Questions or inquiries on the materials provided from TEPCO will be responded during the RFP period. In addition, TEPCO may provide additional materials regarding the questions.

(*3) Necessary information to propose such as TEPCO's facilities

5.7 Handling of the materials provided by the Participant

We may disclose documents that the Participant has submitted to TEPCO (application form, proposal, estimation, presentation material etc.) to related organization which TEPCO decides necessary in this RFP procedures. Submitted materials will not be returned for whatever reasons.

5.8 Others

Participant is responsible for all costs it incurs in the public offering procedures.

- Cost for preparation and submission of the application documents
- Cost for participation in the RFP Information Session
- Cost for preparation and submission of the written proposal and conduct of the presentation
- Cost for conducting POC, etc.

If Participant declines the participation in the RFP Information Session or the submission of the written proposal after notice of the RFP Information Session, please notify us in written format.

The context of this public offering and condition of contract shall not be limited to this Guideline.

TEPCO reserves the rights to change the schedule in section 3.6 and procedure in section 5.1 if necessary.

[Attached documents]

- Application form
- Application form for eligibility (technical requirements)
- Written pledge

[Contact for inquiries on RFP]

Inquiries should be made by e-mail in principle.

E-mail address: tepcosmartcom@tepco.co.jp

* Please note that for inquiries made on weekends and holidays will be responded after the following business day.