PUBLIC POWER CORPORATION SA

NETWORK DEPARTMENT

NOTICE OF CALL FOR TENDERS No .....

PROVISION OF COMMUNICATION SERVICES COVERING THE NEEDS OF THE TELEMETERING CENTER TO BE IMPLEMENTED THROUGH THE PROJECT "INSTALLATION OF REMOTE METER READING SYSTEM FOR MAJOR L.V. CUSTOMERS"

REMARK: In case of discrepancy between the Greek and the English text, the Greek text shall prevail.

OVERVIEW

PPC intends to install a telemetering system for major low voltage Customers (Connections 5, 6 & 7). To that end a Telemetering Center (Main and Backup System) shall be installed in the Athens area, in premises owned by PPC S.A., for the purpose of acquiring and processing data on a daily basis from approximately 60,000 meters installed at major low voltage Customers (Connections 5, 6 & 7) dispersed throughout the Greek territory.

The said meters shall be equipped with cellular telephony modems (GSM and GPRS).

PPC S.A. may purchase at its discretion approximately 5% of the total number of SIM cards (60,000) from other (apart from the lowest bidder) Mobile Telephony Service Provider/s activated in the Greek territory.

The Telecommunication Provider shall provide a cubicle for installation of terminal telecommunications equipment inside the facilities of the Telemetering Center.

Moreover, the Provider shall also install similar equipment in the backup telemetering system, which shall operate in a different location from the main telemetering system, in order to enable communication with the meters from the backup system as well.

SPECIAL TERMS - TECHNICAL REQUIREMENTS

1) Type of Communication:

   Communication of the 60,000 metering device modems with the Telemetering Center shall be performed mainly via GPRS and as an exception via GSM. The Provider is required to provide 100% network coverage for the 60,000 modems whose geographic locations are dispersed all over Greece.

   The desired signal level for proper operation shall refer to ground level. The Provider shall ensure the minimum desired signal level (-85dbm) for GPRS communication.

2) Communication between the Telemetering Center and the Provider:

   The Provider is required to ensure seamless communication between the Meters and the Telemetering Center, with the data volume and transmission rates provided for in the Tender Notice.

3) GPRS communication:

   The Provider shall provide communication from the Meter to the router device of the Main System (and Backup System respectively) of the Telemetering Center, shall install the router device, and shall be responsible for the support and maintenance of the communication and the router 24 hours a day, seven days a week.

   Data transmission via the Internet shall not be accepted.

4) GSM communication:

   The Provider shall be connected to the Telemetering Center at the communication

servers of the Main System (and Backup System respectively) via communication cards provided by the Contractor of the Telemetering Center project.

The Provider shall provide the means for connection with the communication servers of the Main System (and Backup System respectively) of the Telemetering Center and shall be responsible for the support and maintenance thereof 24 hours a day, seven days a week.

5) SIM cards:

The Provider shall supply to PPC S.A. the required number of SIM cards which shall support 2G and 3G networks and have common APN. The SIM cards to be provided shall:

- Meet the requirements of high reliability standards for operation in highly adverse environments. [Broad variations of temperature (-20°C to +60°C), humidity, dust, etc.].
- Have designed lifetime of at least 10 years.
- Have data retention for at least 10 years.

The SIM cards shall operate with the GPRS service using static IP address, and they shall also be able to fall back to GSM communication. The SIM cards shall have outgoing call barring and their PIN1 code shall not be activated in order to avoid the need to re-activate the said code in case of power failure.

It is required to initially program both features (GSM and GPRS with static IP address) in each SIM card as well as to initially allocate available bandwidth that corresponds to 100,000 static IP addresses.

6) Data Volume and Transmission Rate:

(i) For the GPRS communication, the transmitted data volume for each modem/meter is estimated to be approximately 500 Kbytes /month (~17 Kbytes/day); it is possible for the said volume to fluctuate by 100%.

(ii) For the GSM communication, the Provider shall ensure a minimum transmission rate of 9600 bps in all coverage points for acquisition of the transmitted data from each modem/meter, whose volume is estimated to be approximately 500 Kbytes /month (~17 Kbytes/day) (with possibility of 100% increase); therefore, the duration (net transmitted data without handshake) of each call/meter is estimated to be approximately 30 seconds, and this value may fluctuate by 100%. At least one successful call shall be made every day to each meter for the purpose of data acquisition.

7) Transmitted Data Security:

The Provider shall ensure secure data transmission between the metering points and the Telemetering Center in order to avoid interception, leak or corruption of the data transmitted from the Meter to the Telemetering Center and of the commands issued by the Telemetering Center to the Meters.

It shall also be ensured that data packets shall follow specific routes in order to avoid accidental and long-term delays (round trip time not longer than 4 sec).

8) Communication with the Meter via Modem:

The GSM/GPRS modem to be used shall be provided by the Contractor of the Project "Installation of Automated Meter Reading System for Major Low Voltage Customers". Acquisition of any data stored in the meter shall be carried out following a command issued by the Main Automated Meter Reading System.

9) Operating Hours and Data Transmission Reliability:

The Main System shall perform data acquisition from the metering points via the Contractor's Telecommunication Network between 00:01 a.m. and 08:00 a.m. (8 hours), seven days a week for 8 hours and, alternatively, for a limited number of connections where faults may have occurred or where it may be necessary to send-receive special data, seven days a week for 24 hours.

The Provider shall ensure a rate of successful data transmissions between the modems and the Main System equal to 97%, at least for the period between 00:01 a.m. and 08:00 a.m., while the remaining 3% shall be completed within 24hrs.

For each point that did not manage to communicate within the first 24 hours and in case the failure is not due to force majeure, the Provider shall accept a penalty imposed by PPC S.A. and shall specifically agree to pay PPC the amount of 10€ per working day for each SIM card, after the first 24 hours.

10) Term of the Contract:

The term of the Contract shall be five years, commencing upon signing of the contract, with the possibility of extension every three years, unless PPC S.A. provides a notification regarding the termination thereof.

The extension of the Contract term upon expiry of the five year period shall be carried out following an investigation, among all licensed Providers that may be participating at that time, in order to determine wherether it is still the most advantageous or not.

11) Contract Management

Responsible for management of the contract shall be the Contractor of the Project "Installation of Automated Meter reading System for Major Low Voltage Customers", therefore the Provider shall contact directly the Contractor in order to achieve optimum results as regards the communications.

12) Response time to problems:

The Provider shall ensure that any connection problem shall be resolved within maximum 24 hours following notification of the fault, if the said fault relates to Provider's systems.

In case of failure, the penalty of paragraph 9 shall be imposed.

13) Proper performance warranty for the SIM card:

The proper performance warranty for the Operator's SIM cards shall be valid for at least five (5) years following the date of installation and activation.

14) GRPS Availability in a Base Station:

In the Base Stations of the areas serving major low voltage Customers (Connections 5, 6, & 7) the Provider is required to provide channels for exclusive GPRS use.

15) System capabilities:

The Provider's system shall have at least the following features:

- Report of daily volume data and communication time per metering point.
- Report of successful login attempts per day and per metering point.
- Monthly report of the operation cost of SIM card.
- Possibility to control the operation status for each connection and supply with alerts for communication problems in almost real time.
- Alert through email for excess volume of the data (GPRS, GSM/data) for each measuring point, with possibility of data limit configuration.

16) Place and Time of Delivery

The telecommunication equipment shall be delivered and installed in Athens, in premises owned by PPC S.A., within 25 working days following the Contract signing date.

The SIM cards shall be provided in 6 bimonthly partial deliveries of 10.000 pieces each or earlier for the Lowest Bidder, in an area to be defined by PPC S.A.

17) Payment method

The payment shall be made via an aggregate monthly bill, starting from the date of activation of the SIM card; detailed information in electronic form shall be available for each connection.

18) Capabilities

(i) Operation in more than one mobile network.

SIM cards shall operate in more than one GSM/GPRS mobile network (roaming) of Providers that shall be licensed within the Greek territory. The SIM card, during its installation and activation at the point where the customer's measuring device is installed shall automatically search and tune with the mobile network that transmits the strongest signal in the specific area.

The Provider shall present a roaming agreement with the GSM Providers with whom he cooperates in Greece.

(ii) Different operation profiles of the SIM card

A suitable application shall be available for PPC S.A., having the possibility of setting the SIM card and of the respective communication connection in different operation profiles (stand-by, active inactive), on each connection separately or together on all connections (in groups of connections). The operation profiles shall be the following:

- "Stand by", under which the SIM card is in standby mode and is

activated automatically when requested by the network (During the standby mode the card is not charged).

- "Active", under which the SIM card is activated (The card is charged).
- "Inactive", under which the SIM card is deactivated (The card is not charged).

19) Table of Prices for GSM and GPRS communication

The Provider shall submit a draft contract and shall fill in the following Tables with prices.

PRICE OFFER FOR 60.000 SIM CARDS	
Cost for 60.000 connections / month	
Unit price / month	
Cost for excess volume 500Kbyte/month (*)	

PRICE OFFER FOR 3.000 SIM CARDS	
Cost for 3.000 connections / month	
Unit price / month	
Cost for excess volume 500Kbyte/month (*)	

Where (*), the price shall not be taken under consideration in determining the lowest bidder.

The cost of the card, the fixed costs, the equipment, etc. shall be included inn the quoted prices.

VAT and Mobile Subscribers Costs shall not be included in the aforementioned prices.