



## TERMS OF REFERENCE

### Supply and Delivery of Various Meteorological Equipment

#### 1.0 Overview

In PAGASA as official weather bureau, we have various weather stations all over the Philippines that takes daily weather observation and gives weather report. Different kind of Meteorological instruments are used to do the tasks. It measures temperature, humidity, atmospheric pressure, wind and rain.

In connection with the establishment of new PAGASA synoptic stations, it is necessary to purchase accurate and reliable weather instruments that meet the prescribed standard specifications and accuracy set by the WMO for meteorological instruments.

#### 2.0 Approved Budget for the Contract (ABC)

The approved Budget for the Contract is **One Million Sixty Five Thousand Pesos Php1,065,000**) inclusive of VAT and all applicable government taxes.

#### 3.0 Qualifications of Manufacturer and Bidder

- 3.1 Bidder should at least have a minimum experience of three (3) years in the supply of meteorological instruments/equipment in the Philippines. They should submit proof of acceptance of similar completed projects.
- 3.2 Manufacturer should be ISO 9001:2015 Certified and should submit ISO Certificate as proof.

#### 4.0 Bid Proposal Contents

Bidder shall respond paragraph by paragraph to all the specifications and shall clearly indicate compliance. The bidder should include in this proposal descriptive literature of the meteorological instruments/equipment to be supplied in original format. They should include brochures of the instrument, manual and others. These details shall permit PAGASA to fully evaluate the various meteorological instruments/equipment.

#### 5.0 Bid Validity

The bid shall remain valid for a period of 120 days from the date of bid.



## 6.0 Place and Date of Delivery

### 6.1 Delivery Schedule

The winning bidder shall supply and deliver various meteorological equipment to the PAGASA Central Office within ninety (90) calendar days upon receipt of the notice to proceed.

### 6.2 System Documentation

The successful bidder must supply manuals on installation, operation, maintenance of meteorological instruments/equipment. These manuals shall include factory test and calibration data results. All documentation shall be written in English.

### 6.3 Acceptance Test

- All sets/units of instrument/equipment shall be tested and calibrated at the Calibration Unit of PAGASA. Instruments/equipment found with accuracy not within what is set forth in the specification shall be replaced.
- The winning bidder shall provide documentary proof of calibration from the PAGASA Instrument Calibration Laboratory on the delivered sensors.

## 7.0 Warranty

All workmanship, materials and meteorological instruments/equipment shall be warranted by the winning bidder for two (2) years upon acceptance. The whole set of units that fail to provide satisfactory performance during this warranty period shall be replaced within 15 calendar days at the winning bidder's expense.

## 8.0 Technical Specifications

Instrument	Specification	Quantity
Thermograph, Quartz Type	Clock: Quartz type, Two "C" size batteries Battery life: about 1-year in continuous use Drum rotation: 7-day (option: 1-day, 32-day) changed by a cylinder speed switch Sensor: Aged bimetal strip Measuring range: -10 to 50°C Accuracy: $\pm 1^\circ\text{C}$ at 10 to 30°C, $\pm 2^\circ\text{C}$ other than above Chart min. Graduation: $1^\circ\text{C}$ Recording pen: Cartridge pen (violet) Dimensions: (W)336x(H)295x(D)148mm  Weight: min: 2.8 kg, max. 3.0 kg	5 units



	Accessories: 7-day chart for 1-year use (55 sheets/box), chart holder, "C" size battery x 2 Suitable for calibration	
<b>Minimum Thermometer Alcohol filled mounted on wood</b>	Range: - 25°C to 50°C Scale Graduation: 0.5°C Capillary tube yellow back Capillary tube in an outer glass sheath Overall length 315 to 345 mm Suitable for calibration	<b>5 units</b>
<b>Assmann Aspiration Psychrometer</b>	Measuring range: 0 to 50°C Dual-tube alcohol filled thermometer Accuracy of thermometer: $\pm 0.2^\circ\text{C}$ , scale graduation: 0.2°C Speed of air flow: 3 m/s to 5 m/s Power requirements: 3VDC ("D" size manganese battery x 2) or AC adapter (in 100 to 240VAC use, 50/60Hz) Dimensions: (W)80 x (H)452 x (D)110mm Weight: min: 0.70 kg, max. 0.75 kg (w/o batteries) Accessories: Test result for thermometers, water supply bottle, dustproof cover, humidity conversion rule, humidity conversion table, 20 wicks, 2 "D" size manganese batteries, AC adapter (in 100 to 240VAC use), carrying case (possible to accommodate all accessories and a compact stand) Suitable for calibration	<b>5 sets</b>
<b>Barograph Quartz Type</b>	Measuring range: 940 to 1045 hPa Accuracy: $\pm 1$ hPa Chart scale: 1 Drum rotation: 7-day Recording pen: cartridge pen (violet ink) Power: C zinc-carbon battery x2 Accessories: 55 sheets of 7-day chart, cartridge pen, C zinc-carbon battery x2 for 1-year use, chart holder, instruction manual, suitable for calibration	<b>5 units</b>