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		<b>Review Date</b>	N/A		

## 1. Scope of Work


The complete supply of a weather station unit, listed with required items and specifications in the table below, must be delivered to the stipulated address.

Item Name	Specification	Quantity
1. Data logger and control module	A rugged measuring, control and processing device designed for research which delivers accurate data processing and analysis routines for all weather sensors given in this document.  The data logger must be able to measure and record all sensor timestamped data within 10-minute intervals.	x1
2. Weatherproof enclosure	A weather resistant enclosure must be used to contain the data logger and control module.	x1
3. Data- logging and analysis software packages	Relevant support software and packages needed to log all weather sensor data and conduct analysis. A cross correlation comparison of data function will help to improve data analysis time needed.	N/A
4. Rain – Precipitation with bird wire	A tipping bucket rain gauge with bird wire must meet the specifications of the World Meteorological Organization to measure precipitation. The unit must be manufactured from thermoplastic compounds to ensure maximum performance and must be corrosion resistant. The following minimum parameters must be met: <ul style="list-style-type: none"> <li>Catchment Area: 200cm<sup>2</sup></li> <li>Resolution: 0.1 mm per tip</li> <li>Accuracy: 2% up to 25 mm/h</li> <li>Operating Temperature: -20°C to 50°C</li> </ul>	x1
5. Wind – Velocity and Direction	A high-resolution wind sensor with a lightweight corrosion resistant construction and fast response must be used. The instrument body must be manufactured from a UV stabilised plastic with stainless steel and anodized aluminium fittings. Wind speed must be sensed from a lightweight, carbon fibre thermoplastic helicoid propeller. Long-wearing, oversize ceramic bearings must be used to increase service life compared to standard stainless-steel bearings. The following parameters must be met: <ul style="list-style-type: none"> <li>Wind Speed: 0 to 100 m/s</li> <li>Wind Speed Accuracy: ±0.3 m/s</li> <li>Wind Direction: 0° to 360°</li> <li>Wind Direction Accuracy: ±3°</li> <li>Operating Temperature: -40°C to 60°C</li> </ul>	x1
6. Solar radiation	A solar radiation sensor which require minimal maintenance under normal conditions must be present. The following minimum parameters must be met: <ul style="list-style-type: none"> <li>Measurement Range: 400 nm to 1100 nm</li> </ul>	x1

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	<ul style="list-style-type: none"> <li>• Sensitivity: <math>\approx 80 \mu\text{A per } 1000 \text{ W m}^2</math></li> <li>• Operating Temperature: <math>-20^{\circ}\text{C}</math> to <math>65^{\circ}\text{C}</math></li> <li>• Shielded coaxial cable</li> </ul>	
7. Relative humidity and temperature Sensor	<p>A high accuracy, temperature- and relative humidity sensor combined in one probe.</p> <ul style="list-style-type: none"> <li>• Temperature Sensor <ul style="list-style-type: none"> <li>- Measuring Range: <math>-50^{\circ}\text{C}</math> to <math>50^{\circ}\text{C}</math></li> <li>- Measuring Accuracy at <math>0^{\circ}\text{C}</math>: <math>-50^{\circ}\text{C}</math> to <math>50^{\circ}\text{C}</math></li> <li>- Sensor Type: Platinum RTD</li> </ul> </li> <li>• Relative Humidity Sensor <ul style="list-style-type: none"> <li>- Measuring Range: 0 to 100 %RH</li> <li>- Measuring Accuracy at <math>20^{\circ}\text{C}</math>: <math>\pm 2</math> %RH</li> <li>- Sensor Type: Capacitance Type</li> </ul> </li> </ul>	x1
8. Barometric pressure with enclosure	<p>A barometric pressure sensor must be housed in a protective case which can be easily mounted in a standard instrument enclosure. A pressure port must be present to improve outdoor performance. The following minimum parameters must be met:</p> <ul style="list-style-type: none"> <li>• Pressure Range: 500 to 1100 hPa</li> <li>• Accuracy: <math>\pm 0.2</math> hPa at <math>25^{\circ}\text{C}</math></li> <li>• Operating Temperature: <math>-50^{\circ}\text{C}</math> to <math>60^{\circ}\text{C}</math></li> </ul>	x1
9. Atmospheric visibility	<p>The following minimum parameters must be met:</p> <ul style="list-style-type: none"> <li>• Range: <math>&gt;1000</math> m</li> <li>• Accuracy: <math>\pm 10</math> % RMSE</li> <li>• Time Constant: 60 sec</li> <li>• Operating Temperature: <math>-40^{\circ}\text{C}</math> to <math>60^{\circ}\text{C}</math></li> <li>• Humidity: 0 to 100%</li> <li>• Protection Rating: IP66 (NEMA-4X)</li> </ul>	x1
10. Mounting frame/kit/crossarm/tripod for the weather sensors	<p>A mounting structure/crossarm must be included which can be fitted on a container roof. All specified weather sensors and necessary equipment must be attached to this mounting structure/crossarm which can resist high winds.</p>	N/A
11. All necessary cables/wiring for the sensors, data loggers and battery charging unit	<p>Cabling/wiring for all sensors communication, control, power etc. must be connected between the weather station and the control room over a total distance of 10 m.</p>	N/A
12. A rechargeable battery and charger pack	<p>The entire weather station and control unit must be able to operate for at least 5 hours if a power outage occurs. The unit must consist of a rechargeable battery pack and a charging unit (12 V, 12 Ah).</p>	N/A
13. Transport and delivery	<p>The transport and delivery (insurance included) of the entire weather station unit to:</p> <p>Eskom Holdings SOC Ltd Distribution Solutions Brackenfell Complex</p>	N/A

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	Eskom Road Brackenfell South 7560	
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## 2. Specification of Product or Goods

- 2.1 All weather station sensor's materials must be carefully selected to endure corrosion resistance and maximum durability in a harsh marine environment.
- 2.2 Materials and products are preferred to be from reputable brands.
- 2.3 All of the equipment must preferably be locally purchased in the South African region.
- 2.4 Calibration certificates for each measuring device must be provided when delivered.
- 2.5 Details of warranty must be provided from the supplier.

In addition to the above if applicable,

**You are requested to provide the technical criteria with weightings in percentage for your goods or services** as this is a requirement in terms of regulation 5 of the Preferential Procurement Regulations pertaining to the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000).

**Note: The criteria for evaluation, the weightings of each criterion and applicable sub-criteria must be stated clearly and without ambiguity**

Tenders or offers above R30 000, will be evaluated strictly according to the 80/20 or 90/10 principle depending on the value of the order or contract

Tender Evaluation Process will be followed based on the PPPFA requirement, i.e.

Stage 1 – Functionality (Tender, Commercial, SHE and Quality)

Stage 2 – Price and BBBEE

## 3. Materials and/or facilities

Eskom the Employer will provide access to facilities as and when required.

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