Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Terms of reference (ToR) for the procurement of services below the EU threshold

CONFIDENTIAL

Bankable Wind Resource Assessment	Project number/ cost centre: 18.2010.9-580.00

0. List of abbreviations

AG	Commissioning party
AN	Contractor
AVB	General Terms and Conditions of Contract for supplying services and work
FK	Expert
FKT	Expert days
KZFK	Short-term expert
ToRs	Terms of reference
BMZ	Bundesministerium für Zusammenarbeit
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
WRA	Wind Resource Assessment
AEP	Annual Energy Production
WTG	Wint turbine generator
LiDAR	Light Detection and Ranging
SODAR	Sonic/Sound Detection and Ranging

1. Context

On behalf of the European Union Delegation of Lesotho and the Federal Ministry of Economic Cooperation and Development (BMZ), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) implements the GET.invest programme activities to mobilise the private sector and build a pipeline of decentralised renewable energy projects for investment.

GIZ ("**GIZ**") is thus seeking a qualified contractor ("**the Contractor**") to design, execute, and provide a bankable wind resource assessment ("**WRA**") for a new wind farm in the Mohale's Hoek district of Lesotho.

The anticipated wind farm is to have around 60MW of installed capacity. The project site is located approximately 5km east of the town of Mohale's Hoek, on a mountain ridge, oriented NE to SW. The Mohale's Hoek wind farm will consist of 12 wind turbines located on this mountain ridge.

The turbines are expected to fall within the following ranges (Specifications):

- Rated Power: 3MW to 6MW
- Hub Height: 120m to 150m
- Rotor Diameter: 150m to 170m
- Currently, the project is expected to have 60MW of installed capacity.

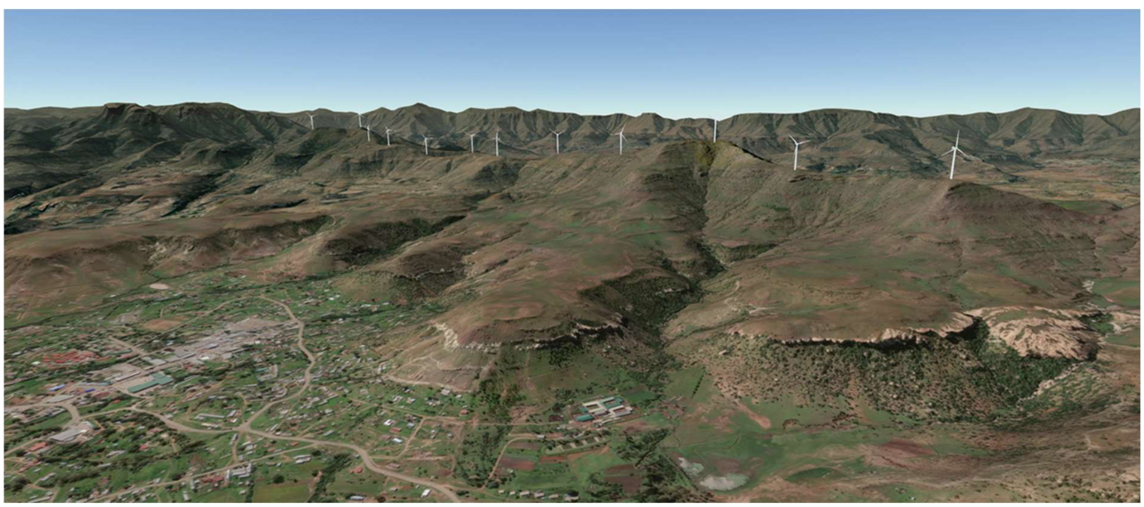

Figure 1: Impression of the Mohale's Hoek windfarm

The coordinates of the wind turbines are as follows:

Name	UTM-zone	UTM-X	UTM-Y	Latitude	Longitude
WT01	35 J	550711,49	6665389,50	-30.141760°	27.526539°
WT02	35 J	550650,56	6664956,00	-30.145673°	27.525921°
WT03	35 J	550201,06	6664766,00	-30.147406°	27.521268°
WT04	35 J	549772,44	6664494,00	-30.149878°	27.516827°
WT05	35 J	549559,19	6664152,50	-30.152973°	27.514631°
WT06	35 J	549244,25	6663754,00	-30.156577°	27.511379°
WT07	35 J	548878,79	6663544,00	-30.158490°	27.507596°
WT08	35 J	548643,81	6663124,00	-30.162287°	27.505167°
WT09	35 J	548166,88	6662758,50	-30.165608°	27.500230°
WT10	35 J	547947,81	6662253,50	-30.170174°	27.497978°
WT11	35 J	547387,81	6661998,00	-30.172497°	27.492174°
WT12	35 J	546841,56	6661564,50	-30.176435°	27.486522°

Table 1: Mohale's Hoek windfarm coordinates

2. Tasks to be performed by the contractor

Scope of Work

To provide a bankable wind resource assessment, the Contractor is expected to implement a wind measurement campaign with two met masts conforming to international standards, especially IEC61400-50-1 and MEASNET – evaluation of site-specific wind conditions v3 (MEASNET) for the site with the setup specified in this RfQ.

Period of assignment: from as soon as possible latest 01/01/2026 until 30/06/2027.

Preparation Phase

- Perform geotechnical surveys for foundations
- Finalize the detailed design of the measurement campaign, including anchoring design, and installation methodologies.
- Develop and submit installation & operational plans covering installation, monitoring, maintenance, and reporting procedures for GIZ review, compliant with the requirements below.
- Identify and comply with all relevant legislation governing the erection of tall meteorological masts in Lesotho.
    - The principal licences, permits and clearances needed for the installation of the 120 m meteorological mast have already been secured by the developer Hirundo. The contractor shall obtain copies of these authorisations and ensure that all work complies with their conditions.
    - The contractor is not responsible for obtaining title to the land. The contractor shall, however, liaise with GIZ to ensure that its design and construction plans are consistent with the agreed land parcel.
    - The building permit remains conditional on submission of detailed technical drawings and supporting documentation. The contractor shall provide GIZ with all information needed to secure this permit, including: foundation design and mast structural drawings, calculations and geotechnical notes; site layout plan; and construction method statements.
    - The contractor shall prepare and submit the following pre-construction documents for approval by GIZ:
        - an Occupational Health and Safety (OHS) plan for mast erection, operation and dismantling;
        - a traffic management plan covering equipment deliveries and construction traffic;
        - a water-use and discharge plan if water will be needed for construction;
        - environmental and heritage protection measures, including a chance-find procedure; and
        - a decommissioning and site-reinstatement plan describing removal of the mast and restoration of the site
    - Attach bird flight diverters to meteorological mast guy wires
    - Any additional regulatory topics identified in the below framework list as being the contractor’s responsibility shall also be addressed in these submissions. All completed documents shall be provided to GIZ before on-site work begins.

	Requirement	Responsible
1	Land/tenure permission for temporary mast (lease/sublease)	GIZ
2	Land/tenure permission for temporary mast & footpath	GIZ
3	Planning permission for mast & footpath – Urban Council area	GIZ
4	Planning permission for mast & footpath – Mashaleng Council area	GIZ
5	Planning permission for mast & footpath – Thaba-Mokhele Council area	GIZ
6	Building permit for mast foundations/anchors & temporary structures	GIZ
7	Environmental authorisation for met masts & access	GIZ
8	Civil Aviation clearance & obstacle marking/lighting	GIZ
9	Telecom interference (informational)	GIZ
10	Roads reserve / tie-in approvals	GIZ
11	OHS plan & appointments (SHE Officer; incident registers)	Contractor
12	Traffic Management Plan (hauling & works)	Contractor
13	Cultural heritage chance-find procedure	Contractor
14	Water abstraction/discharge consent	Contractor
15	Structural design package for foundations/anchors	Contractor
16	Contractor insurances & method statements (rigging/lifting)	Contractor
17	As-built/commissioning notices (DCA, DoE, Planning)	Contractor
18	Decommissioning & reinstatement method	Contractor

- The Contractor shall carry out an appropriate ground investigation to determine soil conditions and foundation depth before designing the mast foundations. Foundations, mast installation and fastening shall be designed and executed in accordance with applicable Lesotho construction standards and the mast manufacturer's specifications.
    - Although the current regulatory framework does not expressly require verification of the design and construction by an independent control expert, the Contractor acknowledges that this may be requested by the relevant authorities or by GIZ. If such approval becomes necessary, the Contractor shall arrange for review and certification by a qualified local control expert
    - In all cases the Contractor remains responsible for ensuring that the mast design and installation meet safety requirements and that documentation of compliance is provided to GIZ.

Installation Phase

- Install and commission two meteorological masts of 120m height, equipped with calibrated anemometers, wind vanes, temperature, humidity, and pressure sensors as specified further in this RfQ.
- Ensure Occupational Health and Safety (OHS) standards are strictly applied during all on-site works.
- Conduct verification checks on all sensors and data acquisition systems upon commissioning.
- Submit an installation and commissioning report including sensor setup documentation, photographs, and initial baseline data checks.
- The Contractor is responsible for the installation of the masts and for any damage that may be caused by the installation works and the masts themselves. In the event that a claim is made against GIZ for damages caused by the installation, the Contractor shall indemnify GIZ against any liability.

- The Contractor shall be liable for all services performed by his subcontractors in the same manner as for his own services.
- Without limiting his obligations and responsibilities under this Contract, the Contractor shall insure himself at his own expense against his liability for any material or physical damage, loss or injury which may occur to any person or property arising out of or in consequence of the performance of this Contract. The insurance sum shall be as customary in the country where the works are to be executed.

Equipment warranty and guarantees

- All equipment and materials supplied under this contract shall be new, unused and free from defects in design, materials and workmanship.
- The Contractor shall provide a warranty for each item supplied. The warranty period shall be at least twelve (12) months from the date of commissioning or the manufacturer's standard warranty period, whichever is longer.
- During the warranty period, the Contractor shall repair or replace any defective equipment or materials at no additional cost to GIZ.

Related payment milestones/partial works:

Milestones/partial works	**Deadline/place/person responsible**	**Criteria for acceptance**
i) Delivery of Equipment to Site.	2-3 months after contract signing	Equipment is on site and verified, 2 met mast equipment must be delivered, inspected, and verified against the bill of materials. Components should be damage-free, stored properly, and supported by complete documentation. A signed verification report must confirm readiness for installation
ii) Installation & Commissioning Completion	3-4 months after contract signing	acceptance is based on the successful on-site installation of the met mast and all associated components, including sensors, data loggers, and power systems. Functionality must be verified through commissioning and performance testing by a qualified technician or engineer. This includes confirmation that the structure is securely erected, equipment is aligned and calibrated according to specifications, and that data transmission and logging are functioning correctly. A commissioning report, including sensor configuration, test readings, and verification of data collection and transmission, must be submitted. Final acceptance requires documented sign-off by both the supplier and GIZ or supervising authority, confirming that the system is fully operational and provides wind data.

i)	Draft WRA report after 6 months including an uncertainty assessment according to MEASNET requirements	After 6 months	GIZ approves the Draft WRA Report . The report must include a MEASNET-compliant uncertainty assessment and meet technical and contractual standards. It should be submitted in both editable and PDF formats with all relevant annexes and data. All GIZ's review comments must be fully addressed in the revised version. Formal written approval from GIZ is required to trigger milestone payment
ii)	Final WRA report after 1 year according to requirements of MEASNET	Delivered 6 months from the end of the measurement campaign.	The milestone is accepted once GIZ approves the Final Wind Resource Assessment (WRA) Report based on one year of met mast data. The report must fully comply with MEASNET requirements, including a comprehensive and transparent uncertainty analysis, energy yield estimates, and data validation. It must be submitted in both editable and PDF formats, accompanied by all relevant annexes, datasets, and supporting documentation. Any feedback from GIZ LS on earlier drafts must be fully addressed. Formal written approval from GIZ LS is required to confirm milestone completion and trigger the associated payment
iii)	Complete equipment inventory, installation and maintenance reports, calibration certificates, and warranty documents	On quarterly basis	The documentation must be accurate, up to date, and aligned with the technical specifications of the met mast installation. Each submission should be clearly organized and include records of any maintenance activities, equipment replacements, and calibration verifications. All documents must be provided in editable and/or scan format as applicable. Acceptance is confirmed through written approval by GIZ.
iv)	Raw and cleaned measurement data shall be made available, upon request and at most on a quarterly basis.	On quarterly basis	The data must be complete, quality-checked, and formatted according to agreed standards, including appropriate documentation of filtering, correction, and validation procedures. Each data submission must include both raw and cleaned datasets, with timestamps and metadata, and be delivered in editable format. GIZ LS must confirm that all quarterly data deliveries meet expectations. Final acceptance is based on written approval from GIZ.
v)	Wind resource maps for the site	Available during the data validation phase, approximately 6 months after the end of the campaign	The maps must be based on validated 12-month met mast data and clearly illustrate wind speed distribution, directionality, and other relevant resource characteristics across the site. They must meet technical quality standards (needed to prove economic feasibility of the location) to be

		submitted in high-resolution format, and be accompanied by supporting metadata and methodologies used. Final acceptance is subject to review and written approval by GIZ, which confirms milestone completion and enables payment.

Post-Construction Capacity Building and Knowledge Transfer

The contractor shall facilitate the two one-day workshops organised by GIZ.

Measurement Campaign Phase

- Collect at least twelve (12) consecutive months of validated, high-quality wind and meteorological data.
- Monitor the operational condition of the masts, sensors, data loggers, power supply and communication systems remotely on a working-daily basis.
- Maintain data availability above 95% throughout the campaign. If this threshold is not met, propose an appropriate extension or compensation mechanism for GIZ approval.
- Perform routine preventive maintenance and corrective maintenance actions promptly when faults are detected.
- Maintain rapid response capability to address major equipment faults or incidents within 48 hours.
- Submit quarterly reports summarizing:
    - Data quality status and data availability rates,
    - Preventive and corrective maintenance activities,
    - Any incidents or exceptional events affecting the campaign.
- Immediately notify GIZ in writing of any major incidents (e.g., mast collapse, theft, serious safety incidents), and submit a formal incident report within 5 working days.

Reporting and Handover Phase

- Prepare and deliver the following outputs:
    - Draft (after 6 months after signing contract) and final (after 1 year after signing contract) Wind Resource Assessment reports according to MEASNET requirements.
    - Complete equipment inventory, installation and maintenance drawings & reports, calibration certificates, maintenance records, and warranty documents.
    - Raw and cleaned measurement data files, configuration files (including passwords), data logger settings, and metadata on a quarterly basis
- Hand over the meteorological masts and equipment in operational condition to GIZ, along with all technical documentation, user manuals, and troubleshooting procedures.
- Provide limited post-handover technical support for a period of three (3) months to address any questions or technical clarifications arising after the official handover.

Related payment milestones/partial works

The contractor is also responsible for the following;

- The Contractor is responsible for complying with Environmental Regulations and with environmental & social mitigation measures proposed in the Environmental and Social Impact assessment and agreed with the Department of Environment. The Contractor should flag any unforeseen environmental or social impacts encountered during the course of the works, and should respond appropriately in coordination with GIZ Lesotho and local stakeholders

- The contractor is expected to supervise the local transport from intermediate storage to the installation site.

- The Contractor is expected to supervise all civil works, this includes overseeing site preparation, foundation construction, anchoring systems, access roads (if applicable), and any associated structural works to ensure they meet the required technical standards and safety regulations. The contractor shall ensure that all civil works are executed in accordance with the approved designs, project specifications, and within the agreed timeline, while also coordinating and managing on-site teams

- The Contractor is expected to provide and implement an anchoring solution which is suitable for rocky soil, e.g. glue-in anchors or foundation plates. Concrete foundations should be avoided when possible

- The contractor should always enforce safe and healthy access to the site. The contractor is expected to observe the highest occupational health and safety standards and measures at all times and at their own liability throughout the duration of the WRA

- The Contractor is responsible for Geotechnical surveys preparing met mast foundation works.
- All equipment used towards the WRA will be handed over to GIZ when the assessment has been completed
- The contractor acknowledges that all wind measurement data collected during the course of this project is of a confidential nature and agrees to maintain the confidentiality of this data
- The Contractor agrees to engage in discussions with GIZ regarding the potential installation of third-party devices on the met mast (indicative weights around 3kg, exclusive of cabling), such as a bat detector system. These discussions will cover technical, safety, and operational considerations to ensure compatibility and non-interference with the Contractor's equipment and data collection activities.
- In addition to the reports required by GIZ in accordance with the AVB, the contractor submits the following reports:

  - Inception report
  - Contributions to reports to GIZ's commissioning party
  - Brief quarterly reports on the implementation status of the project *(5-7 pages)*

3. Concept

In the tender, the tenderer is required to show *how* the objectives defined in Chapter 2 (Tasks to be performed) are to be achieved, if applicable under consideration of further method-related requirements (technical-methodological concept). In addition, the tenderer must describe the project management system for service provision.

Note: The numbers in parentheses correspond to the lines of the technical assessment grid.

Measurement concept

After checking several combinations of measurement locations, only one combination of measurement locations can be considered optimal in terms of number of measurements, representativeness and site accessibility. The proposed measurement concept consists of two measurement locations for met masts of which S-1 is located at a higher location and N-1 at a lower location, in order to represent the height range of the planned WTG locations (Figure 2). The combination of the two sites meets the formal requirements of MEASNET.

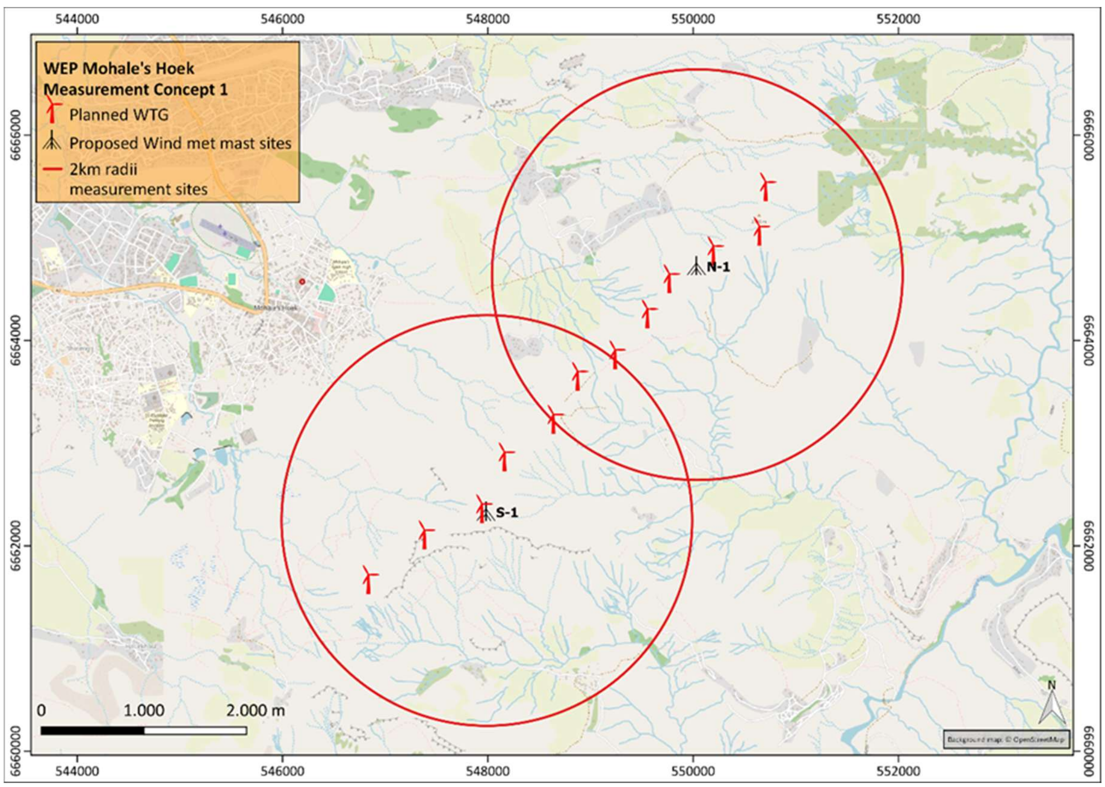

Figure 2 Combination of two measurement position S-1 and N-1 showing 2 km distance circles

None of the locations on the ridge are suitable for a LiDAR or SODAR device, because the steep terrain slopes create turbulence and an inhomogeneous flow through the measurement cone and in co3edsxnsequence inducing a significant terrain error, which is according to an internal assessment considered too high for the available correction algorithms.

For both proposed met mast sites additional buffer zones are shown in which the installation of measurements would still cover the wind farm area to a sufficient degree and meet formal requirements of MEASNET (Figure 3 and Figure 5). Additionally, guy wire alignment taking the main wind direction into account is given to visualize change in elevation along the guy wires (Figure 4 and Figure 6).

Proposed Measurement position S-1

Location	547990 E, 6662247 S / UTM South - Zone 35 J, WGS84
Elevation	2150 m
Remarks	Detailed topographical data, measured in situ, can be provided upon request to confirm technical feasibility

Table 2 Mohale's Hoek measurement site proposal S-1

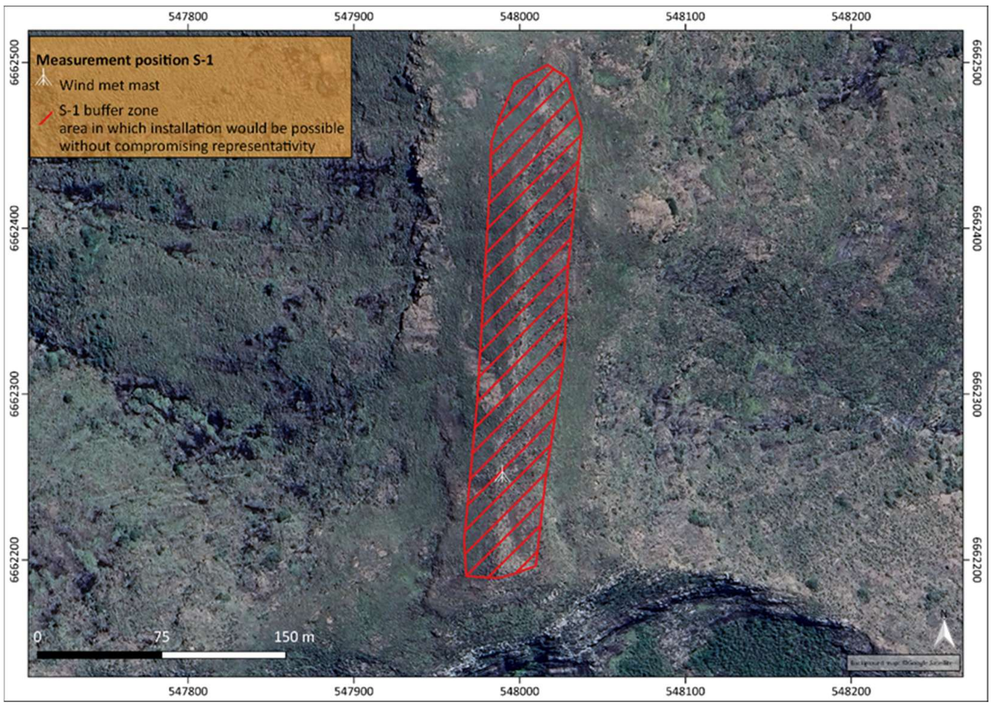

Figure 3 Proposed measurement position S-1 and buffer zone

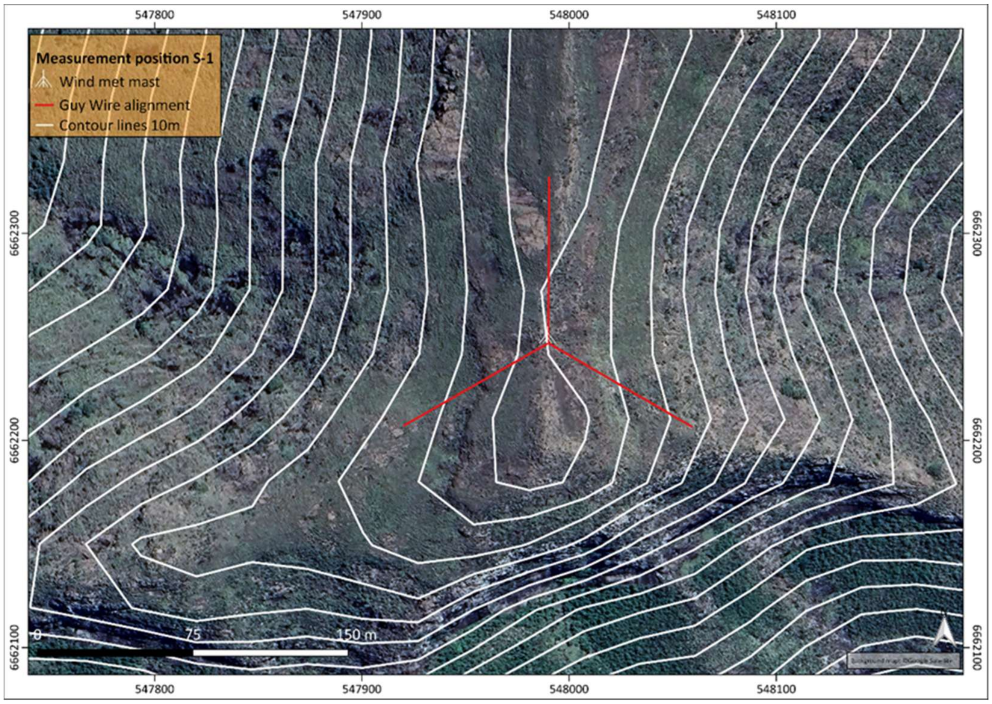

Figure 4   Possible scenario of guy wire alignment for measurement position S-1

Proposed Measurement position N-1

Location	550040 E, 6664641 S / UTM South - Zone 35 J, WGS84
Elevation	2056 m
Remarks	Detailed topographical data, measured in situ, can be provided upon request to confirm technical feasibility

Table 3   Mohale's Hoek measurement site proposal N-1

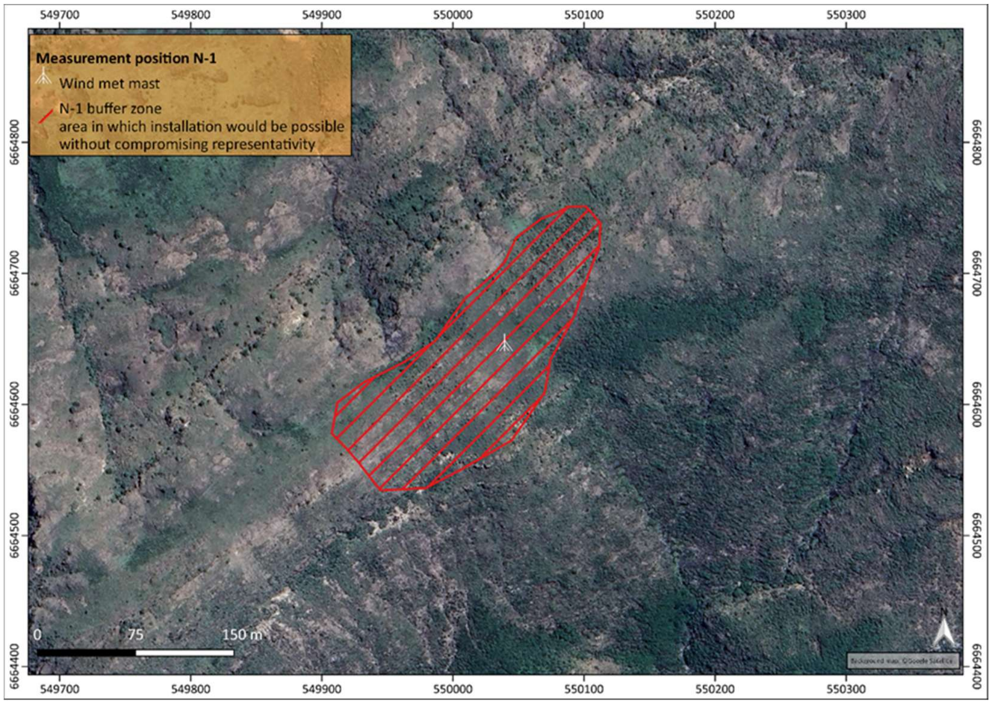

Figure 5 Measurement position N-1 and buffer zone

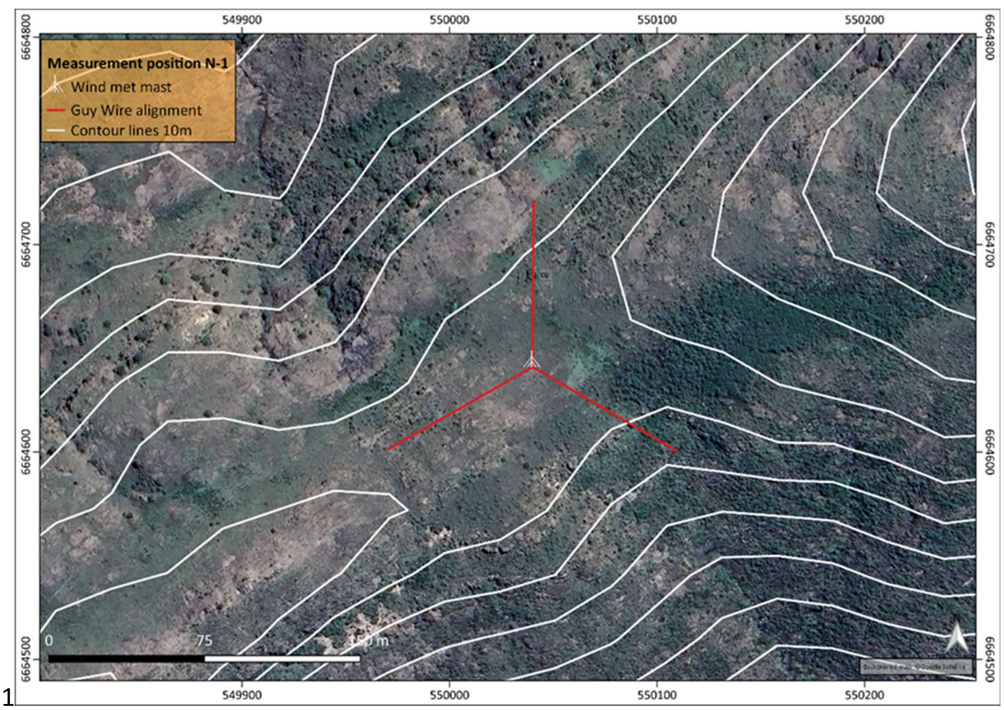

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Figure 6 Possible scenario of guy wire alignment for measurement position N-1

Sources for the wind direction that have been checked are Vortex and Global Wind Atlas. These sources show that the main wind direction is North, depending on the site within the project area and the source, the second most frequent direction is either north--east or north-west but north remains the direction with the highest frequency (Figure 7). The booms of met masts should be aligned to 90° and 270° at a lattice mast.

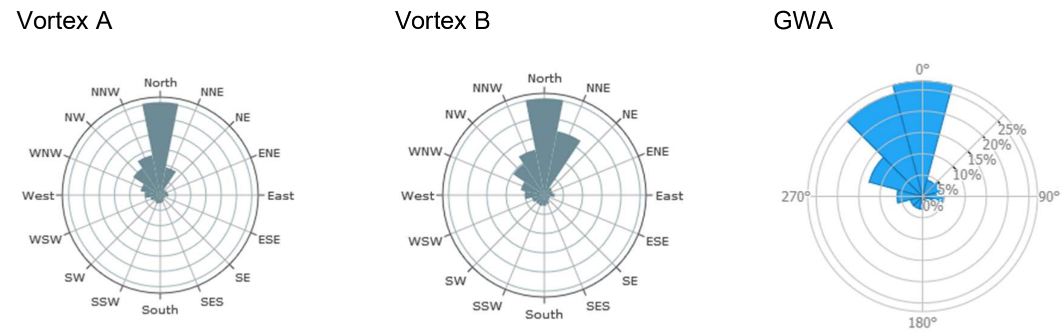

Figure 7 Approximate expected wind direction distribution at Mohale's Hoek based on Vortex and GWA

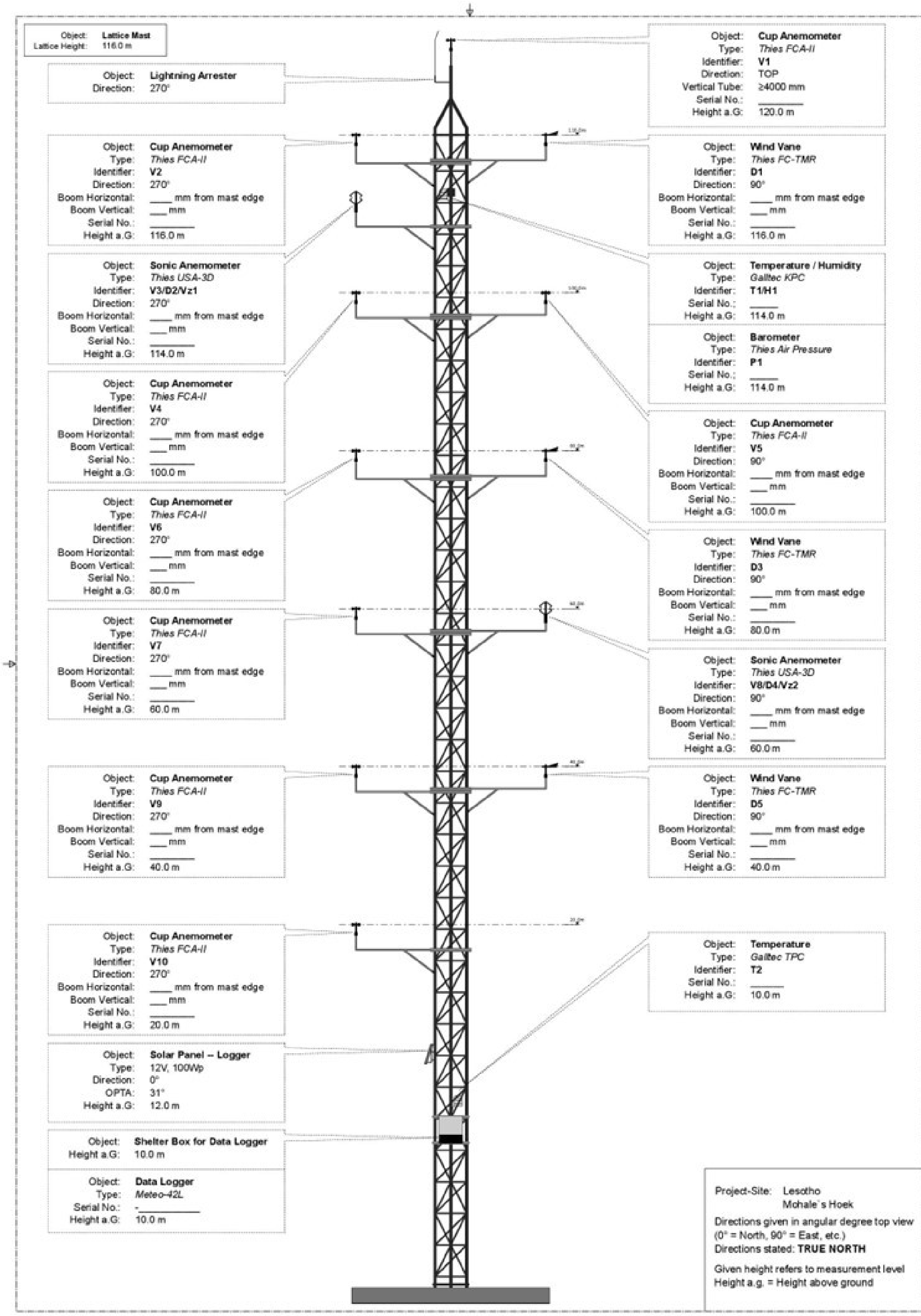

Figure 8 *Measurement mast instrumentation scheme for WMC Mohale's Hoek (120m)*

Met mast and recommended instrument specifications

The maximum hub height for the Mohale's Hoek wind farm is 150 m. According to MEASNET, measurement heights must be within 2/3 of the planned hub height. Especially in complex terrain, the measurement height should be as close as possible to the planned hub height. Therefore, a met **mast height of 120 m** is chosen, which is close to common hub heights.

For measurement of wind speed, anemometers shall be used which must be **calibrated according to** requirements of IEC61400-12-1:2017 and MEASNET by a MEASNET approved institute and must have a classification according to IEC61400-50-1. A type of anemometer which has a current classification is First Class Advanced II, 4.3352.00.000 or First Class Advanced X, 4.3352.00.401 from manufacturer Thies GmbH. Heating of several Anemometers including the primary and control anemometers is recommended on sites with expected temperatures below 5°C for a significant time of the measuring period to reduce uncertainty caused by bearing friction during low temperatures. **A power source** that can supply sufficient energy for heating must be available all the time, and the availability of the power source should be monitored along with the measurement data from the anemometer.

As the met masts will be measuring in complex terrain, it is recommended to use at least one **anemometer** capable of recording inclined wind flows. These sensors must also be calibrated according to requirements of IEC61400-12-1:2017 by a MEASNET approved institute and must have a classification according to IEC61400-50-1. A suitable sensor would be the 3-D Sonic Anemometer by Thies (4.3830.xx.xxx). It is recommended at this site to use two 3D Ultrasonic sensors as indicated in the met mast scheme shown in this report.

Measurement of **wind direction** shall be made using wind vanes in accordance to IEC 61400-50-1 using high quality devices that should be calibrated according to IEC61400-12-1:2017 by a calibration laboratory accredited according to ISO 17025. Wind vanes fulfilling these requirements are, including but not limited to, the Thies First Class TMR, 4.3151.00.901 from manufacturer Thies GmbH. Heating of at least one wind vane is recommended, for sites with expected temperature around freezing point for a significant time of the year (more than 5%).

Measurement of **air temperature and humidity** shall be performed according to IEC 61400-50-1 using high-quality sensors that should be calibrated by a calibration laboratory that is accredited according to ISO 17025 Temperature and Humidity sensors that fulfill these requirements are, including but not limited to, type Galltec+mela KPC1.S/6-ME or equivalent. The Sensors shall be installed in a weather and radiation shield, to protect temperature error due to radiation.

Barometric pressure (air pressure) shall be measured according to IEC61400-50-1, a recommended type is, including but not limited to Ammonit AB60, SETRA Model 278 or equivalent. The measurement range of the sensor must be capable of fitting the entire range of barometric pressure expected at the site. For elevated sites other sensors might be needed than for sites at sea level.

A data logger with a sampling rate of 1 Hz shall be used. The data shall be stored in 10-minutes periods (storage interval) and saved as average, maximum, minimum and standard deviation values for wind speed. For wind direction the average and standard deviation shall be stored. It is recommended to safe the number of valid samples per storage interval. The supply voltage shall be monitored and stored in the storage interval for troubleshooting. The data logger shall be able to transmit data daily via a remote connection and keep the data in the local storage for at least 12 months. The configuration and locally stored data shall be password protected and any change on the system shall be clearly traceable and documented.

According to MEASNET; the data acquisition chain, which includes the transmission, signal conditioning and data logging shall be verified before each measurement campaign by using a calibrated reference device. The process shall be carried out and documented by a member of the MEASNET body or an ISO/EN 17025 accredited institution.

Technical-methodological concept

Strategy (1.1): The tenderer is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1 Context) (1.1.1). Following this, the tenderer presents and justifies the explicit strategy with which it intends to provide the services for which it is responsible (see Chapter 2 Tasks to be performed) (1.1.2).

The tenderer is required to present the actors relevant for the services for which it is responsible and describe the **cooperation (1.2)** with them.

The tenderer is required to present and explain its approach to **steering** the measures with the project partners (1.3.1) and its contribution to the **results-based monitoring system** (1.3.2).

The tenderer is required to describe the key **processes** for the services for which it is responsible and create an **operational plan** or schedule (1.4.1) that describes how the services according to Chapter 2 (Tasks to be performed by the contractor) are to be provided. In particular, the tenderer is required to describe the necessary work steps and, if applicable, take account of the milestones and **contributions** of other actors (partner contributions) in accordance with Chapter 2 (Tasks to be performed) (1.4.2).

A detailed timeline and cost-breakdown should be provided by the contractor, which includes but is not limited to pre-construction works, measurement equipment commissioning, WRA final report, measurement equipment decommissioning.

The tenderer is required to describe its contribution to knowledge management for the partner (1.5.1) under **learning and innovation**.

Project management of the contractor (1.6)

The tenderer is required to explain its approach for coordination with the GIZ project. In particular, the project management requirements specified in Chapter 2 (Tasks to be performed by the contractor) must be explained in detail.

4. Personnel concept

The tenderer is required to provide personnel who are suited to filling the positions described, on the basis of their CVs (see Chapter 7), the range of tasks involved and the required qualifications.

The below specified qualifications represent the requirements to reach the maximum number of points in the technical assessment.

Team leader

Oversees the end-to-end execution of the project, ensuring coordination between technical, logistical, and reporting activities.

Tasks of the team leader

- Act as the main point of contact with GIZ and stakeholders.
- Supervise the construction, commissioning, and maintenance of met masts.
- Ensure adherence to timelines, budgets, and MEASNET/IEC standards.
- Manage risks and resolve issues related to site access, logistics, and unforeseen delays.
- Review and approve all deliverables, including interim and final reports.
- Coordinate subcontractors, suppliers, and in-house technical experts.

Qualifications of the team leader

- Education/training (2.1.1): University degree (German 'Diplom'/Master) in in engineering, Project Management, or Renewable Energy.
- Language (2.1.2): C1-level language proficiency in English
- General professional experience (2.1.3): 3 years professional experience in the renewable energy power generation sector
- Specific professional experience (2.1.4): 2 years professional experience with wind energy projects, specifically wind measurement campaigns and wind resource assessments.
- Leadership/management experience (2.1.5): 3 years of management/leadership experience as project team leader or manager in a company focussed on wind energy
- Regional experience (2.1.6): 2 years of experience with projects in Southern Africa (region).
- Development cooperation (DC) experience (2.1.7): 2 years of experience in DC projects
- Other (2.1.8): - not applicable -

Key expert 1

Tasks of key expert 1

- Oversee the design, procurement, and installation of met masts, ensuring compliance with IEC 61400-12-1.
- Perform regular preventive maintenance to ensure mast integrity and sensor functionality.

- Monitor data quality in real-time, identifying and troubleshooting issues (e.g., sensor drift, data gaps).
- Maintain detailed logs of maintenance activities and provide technical inputs for reporting.
- Collaborate with the Wind Resource Assessment Specialist (Key Expert 2) on data validation.

Qualifications of key expert 1

- Education/training (2.2.1): Post graduate Degree in Mechanical or Electrical Engineering, Renewable Energy. .
- Language (2.2.2): C1 -level language proficiency*)* in English
- General professional experience (2.2.3): 5 years of professional experience in renewable energy projects, particularly in wind energy
- Specific professional experience (2.2.4): 3 years of experience in met mast installation, commissioning, maintenance, and data monitoring, with a proven track record of handling meteorological sensors and data loggers (e.g., Meteo-40).
- Leadership/management experience (2.2.5): 2 years of experience supervising on-site installation teams or managing technical subcontractors during met mast or renewable energy installations.
- Regional experience (2.2.6): 1 year of specific experience in Lesotho or similar terrains.
- Development Cooperation (DC) experience (2.2.7): 1 year of experience in DC-funded projects, those focused on renewable energy or infrastructure
- Other (2.2.8): - not applicable -

Key expert 2

Specialist in wind data validation, resource analysis, and preparation of interim and final reports.

Tasks of key expert 2

- Process and validate data collected from met masts, ensuring alignment with MEASNET standards.
- Analyse wind speed, direction, and other meteorological variables to create a clean, bankable dataset.
- Conduct long-term wind resource extrapolation using reanalysis datasets (e.g., ERA-5, MERRA).
- Generate wind resource maps, modelled energy production time series, and site suitability assessments.
- Lead the preparation of final deliverables, including the WRA report and energy yield calculations.

Qualifications of key expert 2

- Education/training (2.3.1): Masters degree in Renewable Energy, Atmospheric Science, or Engineering.

- Language (2.3.2): C1 -level language proficiency in English
- General professional experience (2.3.3): 3 years of professional experience in renewable energy in wind resource assessment and energy yield analysis.
- Specific professional experience (2.3.4): 2 years of experience in:
    - Wind data validation and analysis, including cleaning and processing datasets from met masts, LIDAR, or SODAR systems. (4 out of 10 points)
    - Wind resource mapping using tools like WAsP, WindPRO, or CFD models (e.g., Meteodyn). (2 out of 10 points)
    - Long-term extrapolation and uncertainty assessments in compliance with MEASNET standards. (2 out of 10 points)
    - Developing bankable energy production models for multiple turbine configurations. (2 out of 10 points)
- Leadership/management experience (2.3.5): 2 years of experience coordinating teams or collaborating with or in multidisciplinary groups for technical analysis and report preparation.
- Regional experience (2.3.6): 2 years of experience in projects in Southern Africa, with 1 year of experience in Lesotho or countries with similar topographic and climatic challenges.
- Development Cooperation (DC) experience (2.3.7): 1 year of experience in DC-funded projects, involving renewable energy or infrastructure development.
- Other (2.3.8): - not applicable -

5. Costing requirements

Assignment of personnel and travel expenses

The following basic calculations for the contract for works are a reference value based on the acceptance criteria for each partial work/milestone specified in Chapter 2 (Tasks to be performed by the contractor).

Since the contract to be concluded is a contract for works, we would ask you to offer your services at a lump sum price.

In addition, the assessment of the financial bid is also based on the underlying daily rate. Please also provide the underlying daily rate. A breakdown of days is not required.

Milestones/partial works	Estimated expert days for orientation	Deadline/place/person responsible
Delivery of Equipment to Site	3	2-3 months after contract signing
Installation & Commissioning Completion	10	3- 4 months after contract signing
draft WRA report after 6 months including an uncertainty assessment according to MEASNET requirements	20	6 months after contract signing
Final WRA report after 1 year according to requirements of MEASNET	20	18 months after contract signing
Complete equipment inventory, installation and maintenance reports, calibration certificates, and warranty documents	5	On quarterly basis
Raw and cleaned measurement data shall be made available, upon request and at most on a quarterly basis.	10	On quarterly basis
Wind resource maps for the site	10	18 months after the contract signing

Travel expenses	Quantity	Price	Total	Comments

Per-diem allowance in country of assignment	40	28		3 experts to get a total of 1120 euros in per-diems while in the place of delivery of work
Overnight allowance in country of assignment	40	104		
Transport				
National flights	6	500		Travel to the place of delivery of the work
Other costs	**Number**	**Price**	**Total**	**Comments**
Flexible remuneration The contractually agreed individual rates (e.g. amount of air travel expenses) and type of settlement (against evidence or flat rate) may not be changed.	1		R350,142.20	A budget of **R350,142.20** is foreseen for flexible remuneration. Please incorporate this budget into the price schedule. Use of the flexible remuneration item requires prior written approval from GIZ.
Workshops . Alternatively, tenderers can calculate workshop costs themselves.		n/a	n/a	Please calculate a budget for workshops taking the following cost items into account:expert days
Subcontracts If envisaged, please specify the fixed budget and break down descriptions (e.g. interpreting services)	n/A			The budget contains the following costs .
Procurement of materials and equipment **Please note**: The procurement of **medicines or chemicals** and **of materials and equipment** whose value exceeds **EUR 50,000** requires the **prior** approval of the person responsible for procurement of materials and equipment.	2			The budget contains the following costs: Metmast equipment and materials.

Local contributions Please give the description in accordance with Section 2.7 AVB and comply with P+R Rule 104; see also guidelines on local contributions	n/a			The contractor administers the following local *contributions* in accordance with Section 2.7 AVB: .
Other costs Please explain here in more detail which costs are to be reimbursed, assuming they do not fall under the budget item described above.	n/a			The budget contains the following costs.

- The Contractor may optionally offer asset coverage (including, but not limited to, met masts and measurement equipment) and third-party liability insurance for the Wind Resource Assessment campaign. If offered, the insurance costs must be specified separately in the financial proposal. GIZ reserves the right to accept or reject the proposed insurance coverage and associated costs. If these costs will be offered they will be not part of the price evaluation of the bid.

Workshops, events and trainings

- not applicable

6. Inputs of GIZ or other actors

- GIZ will provide a Workshop Venue, Catering Services during workshops and technical Equipment for workshop presentations and activities.
- GIZ will provide a shipping address close to the site
- GIZ may offer a project vehicle for transportation to and from the measurement site.
- GIZ will make available permits, licenses, and clearances that are not considered responsibility of the contractor (see table under 2. Tasks to be performed by contractor – Preparation phase)

7. Requirements on the format of the tender

The structure of the tender must correspond to the structure of the ToR. In particular, the detailed structure of the concept (Chapter 3) should be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). The tender must be legible (font size 11 or larger) and clearly formulated. It must be drawn up in English (language).

The complete tender must not exceed 20 pages (excluding CVs). If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment. External content (e.g. links to websites) will also not be considered.

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs shall not exceed 4 pages each. They must clearly show the position and job the proposed person held in the reference project and for how long. The CVs can also be submitted in English (language).

Please calculate your financial tender based exactly on the parameters specified in Chapter 5 Quantitative requirements. The contractor is not contractually entitled to use up the days, trips, workshops or budgets in full. The number of days, trips and workshops and the budgets will be contractually agreed as maximum limits. The specifications for pricing are defined in the price schedule.

As the contract to be concluded is a contract for works, please offer a fixed lump sum price that covers all relevant costs (fees, travel expenses etc.). The price bid will be evaluated on the basis of the specified lump sum price. In addition, please also provide the underlying daily rate. A breakdown of days is not required.

8. Outsourced processing of personal data

not applicable

9. Annexes

- KMZ files for:
  - Wind turbine coordinates
  - Met mast coordinates
  - Met mast buffer zones
- Detailed topographical data (measured in situ)