

# **Fanellan Hub 400 kV Substation and Converter Station**

## **Environmental Impact Assessment Report**

### **Volume 4 | Technical Appendices**





#### **Appendix 14.6 – Calibration Certificate NL52 01265413**

**February 2025**



## TECHNICAL APPENDIX 14.6: NOISE IMPACT ASSESSMENT

### 14.6 Calibration Certificate NL52 01265413

	<b>CERTIFICATE OF CALIBRATION</b>		 0653																												
<b>Date of Issue: 25 May 2022</b> Calibrated at & Certificate issued by: ANV Measurement Systems Beaufort Court 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mail: <a href="mailto:info@noise-and-vibration.co.uk">info@noise-and-vibration.co.uk</a> Web: <a href="http://www.noise-and-vibration.co.uk">www.noise-and-vibration.co.uk</a> <small>Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems</small>		<b>Certificate Number: UCRT22/1693</b>																													
		Page 1 of 2 Pages Approved Signatory  K. Mistry																													
Customer	Wood Group St. Vincent Plaza (Floor 2) 319 St. Vincent Street Glasgow G2 5LP																														
Order No.	26010406																														
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator																														
Identification	<table border="0"> <thead> <tr> <th>Manufacturer</th> <th>Instrument</th> <th>Type</th> <th>Serial No. / Version</th> </tr> </thead> <tbody> <tr> <td>Rion</td> <td>Sound Level Meter</td> <td>NL-52</td> <td>01265413</td> </tr> <tr> <td>Rion</td> <td>Firmware</td> <td></td> <td>2.0</td> </tr> <tr> <td>Rion</td> <td>Pre Amplifier</td> <td>NH-25</td> <td>65414</td> </tr> <tr> <td>Rion</td> <td>Microphone</td> <td>UC-59</td> <td>10633</td> </tr> <tr> <td>Rion</td> <td>Calibrator</td> <td>NC-74</td> <td>34178103</td> </tr> <tr> <td></td> <td>Calibrator adaptor type if applicable</td> <td></td> <td>NC-74-002</td> </tr> </tbody> </table>	Manufacturer	Instrument	Type	Serial No. / Version	Rion	Sound Level Meter	NL-52	01265413	Rion	Firmware		2.0	Rion	Pre Amplifier	NH-25	65414	Rion	Microphone	UC-59	10633	Rion	Calibrator	NC-74	34178103		Calibrator adaptor type if applicable		NC-74-002		
Manufacturer	Instrument	Type	Serial No. / Version																												
Rion	Sound Level Meter	NL-52	01265413																												
Rion	Firmware		2.0																												
Rion	Pre Amplifier	NH-25	65414																												
Rion	Microphone	UC-59	10633																												
Rion	Calibrator	NC-74	34178103																												
	Calibrator adaptor type if applicable		NC-74-002																												
Performance Class	1																														
Test Procedure	TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i>																														
Type Approved to IEC 61672-1:2013	Yes <i>If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013</i>																														
Date Received	23 May 2022	ANV Job No.	UKAS22/05346																												
Date Calibrated	25 May 2022																														
The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.																															
Previous Certificate	Dated	Certificate No.	Laboratory																												
	22 May 2020	UCRT20/1448	0653																												
This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.																															

<b>CERTIFICATE OF CALIBRATION</b>	<b>Certificate Number</b>
	UCRT22/1693
UKAS Accredited Calibration Laboratory No. 0653	Page 2 of 2 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title NL-52/NL-42 Description for IEC 61672-1			
SLM instruction manual ref / issue No. 56034 21-03		Source Rion	
Date provided or internet download date 19 March 2021			
	Case Corrections	Wind Shield Corrections	Mic Pressure to Free Field Corrections
Uncertainties provided	Yes	Yes	Yes
Total expanded uncertainties within the requirements of IEC 61672-1:2013			YES
Specified or equivalent Calibrator Specified			
Customer or Lab Calibrator Customers Calibrator			
Calibrator adaptor type if applicable NC-74-002			
Calibrator cal. date 24 May 2022			
Calibrator cert. number UCRT22/1682			
Calibrator cal cert issued by Lab 0653			
Calibrator SPL @ STP		94.02 dB	Calibration reference sound pressure level
Calibrator frequency		1001.97 Hz	Calibration check frequency
Reference level range		Single dB	
Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15			
Note - The Extension Cable was used between the SLM and the pre-amp for this calibration.			

Environmental conditions during tests		Start	End	
Temperature		24.15	24.31	± 0.30 °C
Humidity		48.3	48.3	± 3.00 %RH
Ambient Pressure		100.06	100.05	± 0.03 kPa

Indication at the Calibration Check Frequency			
Initial indicated level	94.0 dB	Adjusted indicated level	94.0 dB
Uncertainty of calibrator used for Indication at the Calibration Check Frequency ±		0.10 dB	
Self Generated Noise			
Microphone installed -	Less Than	18.8 dB	A Weighting
Microphone replaced with electrical input device -		UR = Under Range indicated	
Weighting	A	C	Z
	12.5 dB UR	16.9 dB UR	23.5 dB UR

Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Additional Comments The results on this certificate only relate to the items calibrated as identified above.

Prior to calibration the instrument was re-aligned.

..... END .....  
 Calibrated by: B. Bogdan R 2