

Proposed Glenard Wind Farm Development Environmental Impact Assessment Report EIAR – 2022.01.18 – 190114 – F

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APPENDIX 11-2

CALIBRATION CERTIFICATES





Date of Issue: 20 April 2018 Certificate Number: UCRT18/1436 Issued by: ANV Measurement Systems Page of Pages Beaufort Court Approved Signatory 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mail: info@noise-and-vibration.co.uk Web: www.noise-and-vibration.co.uk K. Mistry Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems Customer **AWN** Consulting Limited The Tecpro Building Clonshaugh Business and Technology Park Dublin 17 Ireland D17 NX50 Order No. Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator Identification Manufacturer Instrument Type Serial No. / Version NL-52 00186668 Rion Sound Level Meter Rion Firmware 1.9 Rion Pre Amplifier NH-25 76701 Microphone UC-59 12813 Rion Rion Calibrator NC-74 34536109 Calibrator adaptor type if applicable NC-74-002 Performance Class 1 TP 2.SLM 61672-3 TPS-49 **Test Procedure** Procedures from IEC 61672-3:2006 were used to perform the periodic tests. Type Approved to IEC 61672-1:2002 YES 21.21 / 13.02 Approval Number If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003 Date Received 20 April 2018 ANV Job No. UKAS18/04261 Date Calibrated 20 April 2018 The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC

61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate		Dated Initial Calibration			Certificate No.		Laboratory				
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Certificate Number: UCRT18/1839

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Date of Issue: 16 August 2018 Issued by: ANV Measurement Systems Beaufort Court 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mail: info@noise-and-vibration.co.uk Web: www.noise-and-vibration.co.uk

Customer

AWN Consulting Limited The Tecpro Building IDA Business and Technology Park Dublin 17 Ireland

Order No.	1869			
Description	Sound Level Me	eter / Pre-amp / Micropi	hone / Associa	ated Calibrator
Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00586944
	Rion	Firmware		1.9
	Rion	Pre Amplifier	NH-25	87063
	Rion	Microphone	UC-59	13407
	Rion	Calibrator	NC-74	34536109
		Calibrator adaptor ty	pe if applicabl	e NC-74-002
Performance Class	1			
Test Procedure	TP 2.SLM 6167	2-3 TPS-49		
	Procedures from	IEC 61672-3:2006 were	used to perform	the periodic tests.
Type Approved to IEC	61672-1:2002	YES Approva	Number	21.21 / 13.02
		re is public evidence that in evaluation tests of IEC 6		ccessfully completed the
Date Received	15 August 2018	AN	IV Job No.	UKAS18/08525
Date Calibrated	16 August 2018			

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate Dated Certificate No. Laboratory
Initial Calibration
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realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not
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Date of Issue: 20 April 2018 Certificate Number: UCRT18/1432 Issued by: ANV Measurement Systems Page of Pages Beaufort Court Approved Signatory 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mail: info@noise-and-vibration.co.uk Web: www.noise-and-vibration.co.uk K. Mistry Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems **AWN Consulting Limited** Customer The Tecpro Building Clonshaugh Business and Technology Park Dublin 17 Ireland D17 NX50 Order No. Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator Identification Serial No. / Version Manufacturer Instrument Туре Rion Sound Level Meter NL-52 00186667 Rion Firmware 1.9 NH-25 Rion Pre Amplifier 76817 Rion Microphone UC-59 12812 NC-74 Rion Calibrator 34536109 Calibrator adaptor type if applicable NC-74-002 Performance Class 1 **Test Procedure** TP 2.SLM 61672-3 TPS-49 Procedures from IEC 61672-3:2006 were used to perform the periodic tests. Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02

 Type Approved to IEC 61672-1:2002
 YES
 Approval Number
 21.21 / 13.02

 If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003
 Date Received
 20 April 2018
 ANV Job No.
 UKAS18/04261

 Date Calibrated
 20 April 2018
 ANV Job No.
 UKAS18/04261

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Prev	vious Certifica		Da: Init	^{ted} ial Calibratio	on		Certificate I	No.	Laboratory			
							21. 107	10.42		-	100	
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Certificate Number: UCRT18/1440 Date of Issue: 20 April 2018 Issued by: **ANV Measurement Systems** Page Pages of Beaufort Court Approved Signatory 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mail: info@noise-and-vibration.co.uk Web: www.noise-and-vibration.co.uk K. Mistry Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems Customer AWN Consulting Limited The Tecpro Building Clonshaugh Business and Technology Park Dublin 17 Ireland D17 NX50 Order No. Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator Identification Manufacturer Instrument Туре Serial No. / Version NL-52 Rion Sound Level Meter 00186669 Rion Firmware 1.9 Rion Pre Amplifier NH-25 76819 Microphone UC-59 12814 Rion NC-74 34536109 Rion Calibrator Calibrator adaptor type if applicable NC-74-002 Performance Class 1 TP 2.SLM 61672-3 TPS-49 Test Procedure Procedures from IEC 61672-3:2006 were used to perform the periodic tests. Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02 If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003 Date Received 20 April 2018 ANV Job No. UKAS18/04261 Date Calibrated 20 April 2018

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Prev	vious Certi	fica			<i>ted</i> tial Calibratio	on		Certificate	No.	Laboratory			
This	cortificato	ie	iccued	in	accordance	with	the	laboratory	accreditation	requiremente	of	the	Unite

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.





Certificate Number: UCRT19/1874

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J. Harrima	n					

Date of Issue: 06 August 2D19 Issued by: ANV Measurement Systems Beaufort Court 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mall: info@noise-and-vibration.co.uk Web: www.noise-and-vibration.co.uk Acoustics Noise and Vibration.lc tuding as ANV Measurement Sy

Customer

AWN Consulting The Tecpro Building IDA Business and Technology Park Clonshaugh Dublin 17

Order No.	1999			
Description	Sound Level Me	eter / Pre-amp / Microph	one / Associa	ated Calibrator
Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00575782
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	65810
	Rion	Microphone	UC-59	15093
	Brüel & Kjær	Calibrator	4231	2460007
		Calibrator adaptor typ	e if applicable	e UC 0210
Performance Class	1			
Test Procedure	TP 2.SLM 6167	2-3 TPS-49		
		IEC 61672-3:2006 were u	sed to perform	the periodic tests.
Type Approved to IEC	61672-1:2002	YES Approval	Number	21.21 / 13.02
		e is public evidence that the evaluation tests of IEC 61		ccessfully completed the
Date Received	30 July 2019	AN	/ Job No.	UKAS19/07502
Date Calibrated	06 August 2019			

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate	Dated	Certificate No.	Leboratory
	28 July 2017	UCRT17/1628	0653
This certificate is issue	d in accordance with the	e laboratory accreditation	requirements of the United Kingdom
Accreditation Service. It r	provides traceability of mea	surement to the SI system	of units and/or to units of measurement

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.





Date of Issue: 20 April 2018 Issued by: ANV Measurement Systems Page of Pages 1 2 **Beaufort Court** Approved Signatory 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mail: info@noise-and-vibration.co.uk Web: www.noise-and-vibration.co.uk K. Mistry Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems AWN Consulting Limited Customer The Tecpro Building Clonshaugh Business and Technology Park Dublin 17 Ireland D17 NX50 Order No. Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator Identification Serial No. / Version Manufacturer Instrument Type Rion Sound Level Meter NL-52 00186671 Rion Firmware 1.9 76004

Rion RionMicrophoneUC-5912817RionCalibratorNC-7434536109Calibrator adaptor type if applicableNC-74-002Performance Class Test Procedure1Test ProcedureTP 2.SLM 61672-3 TPS-49 Procedures from IEC 61672-3:2006 were used to perform the periodic tests.Type Approved to IEC61672-1:2002YESApproval Number21.21 / 13.02If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003Date Received20 April 2018ANV Job No.UKAS18/04261Date Calibrated20 April 2018		Rion	Pre Amplifier	NH-25	76821
Calibrator adaptor type if applicable NC-74-002 Performance Class 1 Test Procedure TP 2.SLM 61672-3 TPS-49 Procedures from IEC 61672-3:2006 were used to perform the periodic tests. Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02 If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003 Date Received 20 April 2018 ANV Job No. UKAS18/04261		Rion	Microphone	UC-59	12817
Performance Class 1 Test Procedure TP 2.SLM 61672-3 TPS-49 Procedures from IEC 61672-3:2006 were used to perform the periodic tests. Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02 If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003 Date Received 20 April 2018		Rion	Calibrator	NC-74	34536109
Test Procedure TP 2.SLM 61672-3 TPS-49 Procedures from IEC 61672-3:2006 were used to perform the periodic tests. Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02 If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003 UKAS18/04261			Calibrator adaptor type	if applicable	NC-74-002
Procedures from IEC 61672-3:2006 were used to perform the periodic tests. Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02 If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003 UKAS18/04261 Date Received 20 April 2018 ANV Job No. UKAS18/04261	Performance Class	1			
Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02 If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003 UKAS18/04261	Test Procedure	TP 2.SLM 61672	-3 TPS-49		
If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003Date Received20 April 2018ANV Job No.UKAS18/04261		Procedures from I	EC 61672-3:2006 were use	ed to perform t	the periodic tests.
applicable pattern evaluation tests of IEC 61672-2:2003Date Received20 April 2018ANV Job No.UKAS18/04261	Type Approved to IEC	61672-1:2002	YES Approval N	umber	21.21 / 13.02
					cessfully completed the
Date Calibrated 20 April 2018	Date Received	20 April 2018	ANV	Job No.	UKAS18/04261
	Date Calibrated	20 April 2018			

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

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Certificate Number: UCRT18/1437





Date of Issue: Issued by:	15 August 2018	Certifica	te Number: UC	CRT18/1831			
ANV Measurement	Systems		Page 1 c	of 2 Pages			
Beaufort Court 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mail: info@noise-and-vibration.co.uk Web: www.noise-and-vibration.co.uk Newsitice Noise and Vibration List trading as ANV Measurement Eystems Customer AWN Consulting Limited		314 J. Harrimai	Approved Signatory J. Harriman				
Customer	The Tecpro Bu	•					
Order No.	1869						
Description	Sound Level M	leter / Pre-amp / Microph	one / Associated	Calibrator			
Identification	Manufacturer	Instrument	Type	Serial No. / Version			
	Rion	Sound Level Meter	NL-52	00586940			
	Rion	Firmware		1.9			
	Rion	Pre Amplifier	NH-25	87059			
	Rion	Microphone	UC-59	13402			
	Rion	Calibrator	NC-74	34536109			
		Calibrator adaptor typ	e if applicable	NC-74-002			

Performance Class	1				
Test Procedure	TP 2.SLM 6167	2-3 TPS-49	9		
	Procedures from	IEC 61672-	3:2006 were used to perfor	m the periodic tests.	
Type Approved to IEC	61672-1:2002	YES	Approval Number	21.21 / 13.02	
			widence that the SLM has a tests of IEC 61672-2:2003	successfully completed th)e
Date Received	13 August 2018		ANV Job No.	UKAS18/08513	
Date Calibrated	15 August 2018				

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate	Dated	Certificate No.	Laboratory				
	Initial Calibration						
This certificate is issued	i 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 P	hysical Laboratory or other	recognised national metro	ology institutes. This certificate may not				

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Date of Issue: 31 July 2019 Certificate Number: UCRT19/1856 Issued by: ANV Measurement Systems Page of 2 Pages 1 **Beaufort Court** Approved Signatory 17 Roebuck Way Milton Keynes MK5 8HL Telephone 01908 642846 Fax 01908 642814 E-Mail: info@noise-and-vibration.co.uk Web: www.noise-and-vibration.co.uk K. Mistry Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems Customer AWN Consulting The Tecpro Building IDA Business and Technology Park Clonshaugh Dublin 17

Order No.	1999					
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator					
Identification	Manufacturer	Instrument	Type	Se	rial No. / Version	
	Rion	Sound Level Meter	NL-52	00	575785	
	Rion	Firmware		2.0)	
	Rion	Pre Amplifier	NH-25	65	812	
	Rion	Microphone	UC-59	11	406	
	Brüel & Kjær	Calibrator	4231	24	60007	
		Calibrator adaptor type if applicable UC 0210			0210	
Performance Class	1					
Test Procedure	TP 2.SLM 61672-3 TPS-49					
Procedures from IEC 61672-3:2006 were used to perform the periodic tests.						
Type Approved to IEC	61672-1:2002	YES Approval N	lumber	21.21/1	3.02	
If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003						
Date Received	30 July 2019	ANV	Job No.	UKAS19	07499	
Date Calibrated	31 July 2019					

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate	Dated	Certificate No.	Laboratory			
C - C - Cogenie (Shee - Strand Secological Secol	28 July 2017	UCRT17/1627	0353			
This certificate is issued	in accordance with the	laboratory accreditation r	equirements of the United Kingdom			
Accreditation Service. It	provides traceability of r	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.						