

# Shannon Technology and Energy Park (STEP) Power Plant

## Appendix A7A.7: IWDG Static Acoustic Monitoring Results 2022-2023

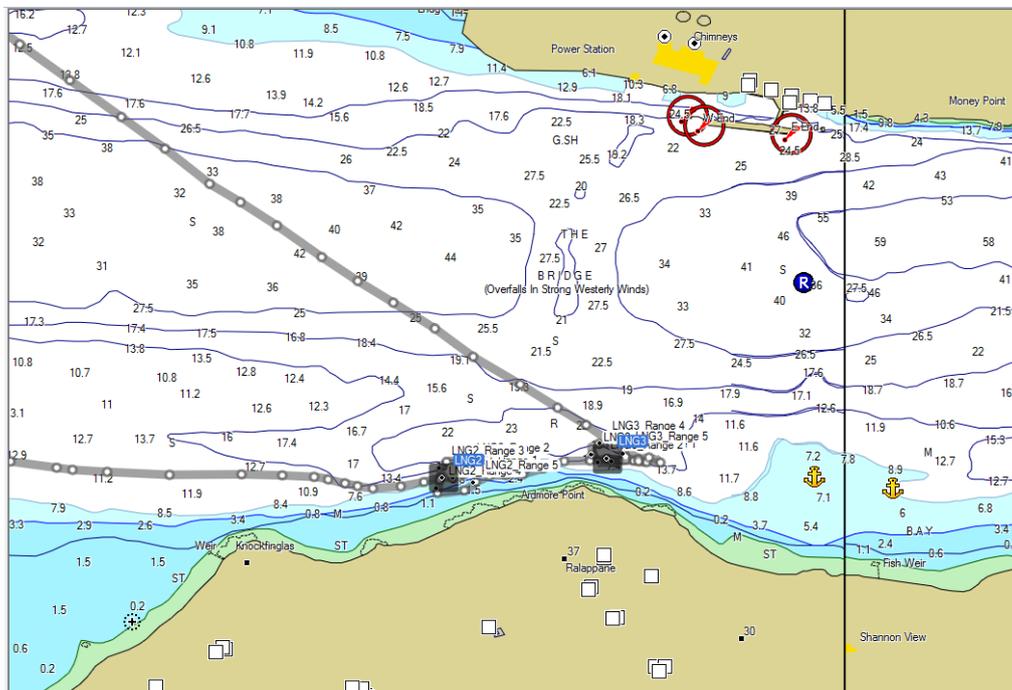
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# Static Acoustic Monitoring deployment off Shannon Technology and Energy Park (STEP)

Static Acoustic Monitoring (SAM) was deployed at the STEP site on 14 May 2022 which is the first deployment in Phase II of SAM as part of the STEP project. Phase I provided SAM data over a two year period between August 2019 and August 2021. This phase is planned initially to be for 12 months. SAM will be recovered and replaced every three months. A CPOD/FPOD array has been deployed at each site.

Phase I SAM involved the use of CPODs, but as support for CPODs by the manufacturer (Chelonia Ltd) has been discontinued in light of the new generation of SAM devices produced by Chelonia (FPOD). To make the long-term transition from CPODs to FPODs we will deploy the two devices in parallel for the 12 month period so we can combine the data from Phase I with Phase II.

## SAM deployment



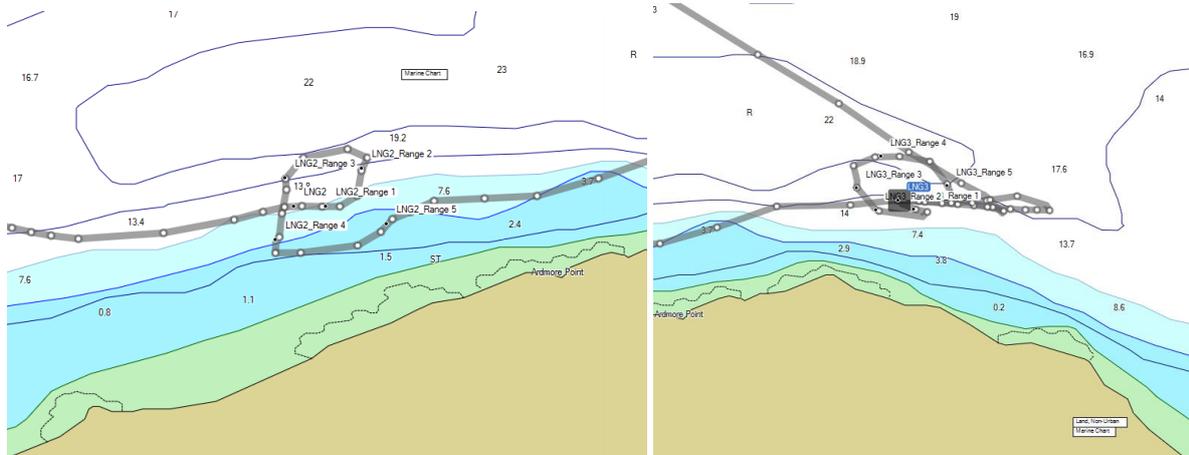
Location of LNG2 and LNG3 off STEP, Ardmore Point

SAM was deployed at LNG2 and at a new site (LNG3). SAM has been deployed at LNG both in Phase I and during an study for Shannon LNG between between June 2006 and June 2007 (using TPODs). LNG3 is a site 800m (0.4nmls) upriver of the proposed jetty of LNG2 and fills potential gap in our understanding of how the dolphins use this area at fine scale.

Table 1: SAM deployments at STEP: May 2022

Location	Position	FPOD	CPOD	Acoustic Release	Deployment time
LNG2	N52 35.112 W9 26.354	6613	3529	010	12:36 (BST)
LNG3	N52 35.171 W9 25.735	6616	2640	040	12:48 (BST)

SAM are deployed on acoustic Releases (Sonardyne LRT with 70m rope cannister) were used to anchor the SAM array to a 20kg mooring.



Site of LNG2 and LNG3 off STEP, Ardmore Point

### LNG2

A FPOD/CPOD array was deployed at LNG 2 on Saturday 4 May 2022. The array was deployed at a depth of 21m (Release Code 010) at **N52 35.112 W9 26.354** (@12:36).

Following deployment the AR was ranged from a number of positions to enabled triangulation to its position should the AR fail to communicate with the transponder on recovery.

Table 2: SAM deployments at LNG2: 14 May 2022

Triangulation	Latitude	Longitude	Range (m)
1	N52 35.112	W9 26.314	32.2
2	N52 35.151	W9 26.270	110.4
3	N52 35.141	W9 26.364	49.0
4	N52 35.078	W9 26.376	76.9
5	N52 35.095	W9 26.239	125.2

### LNG3

A FPOD/CPOD array was deployed at LNG 2 on Saturday 4 May 2022. The array was deployed at a depth of 21m (Release Code 010) at **N52 35.171 W9 25.735** (@12:48).

Following deployment the AR was ranged from a number of positions to enabled triangulation to its position should the AR fail to communicate with the transponder on recovery.

Table 3: SAM deployments at LNG3: 14 May 2022

Triangulation	Latitude	Longitude	Range (m)
1	N52 35.161	W9 25.714	28.9
2	N52 35.160	W9 25.765	57.8
3	N52 35.184	W9 25.791	92.8
4	N52 35.219	W9 25.758	103.7
5	N52 35.186	W9 25.671	66.3

The SAM arrays represents the start of phase three of Static Acoustic Monitoring and will be *in situ* for 3-4 months until **mid-August 2022**.

Drs Simon Berrow and Joanne O'Brien

16 May 2022

on behalf of



**Irish Whale and Dolphin Group Consulting**

Registered Office: Merchants Quay, Kilrush Co. Clare, Ireland

<http://consulting.iwdg.ie/>

# STATIC ACOUSTIC MONITORING OFF ARDMORE POINT FOR STEP

## AUGUST 2022



### 1. Static Acoustic Monitoring

Static Acoustic Monitoring (SAM) using C-PODs and F-PODs were carried out at two locations, off Ardmore Point Co. Kerry from 14 April to 17 August 2022 (96 days). Dolphins were recorded on average 70% of days across sites. Monitoring is continuing at both locations and statistical modelling of the long-term dataset will be carried out after 12 months.

**Table 1. Summary of results from SAM at each of location**

Location	No of days	Dates	POD Type	Porpoise	Dolphin	Total	% DP days	Mean DPM/Day
LNG2	96	14/04-17/08/22	FPOD 6613	3	1603	1606	90	16.5
LNG2	96	14/04-17/08/22	CPOD 3529	8	318	326	51	3.3
LNG3	96	14/04-17/08/22	FPOD 6616	3	1481	1484	95	15.3
LNG3	96	14/04-17/08/22	CPOD 2940	8	292	300	51	3.0

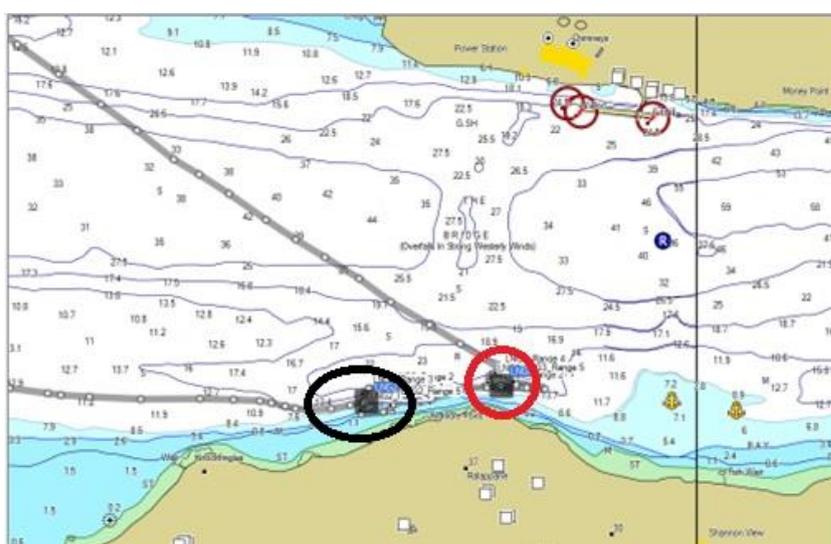


Figure 1. SAM locations  
LNG 2 = black and LNG3 = red

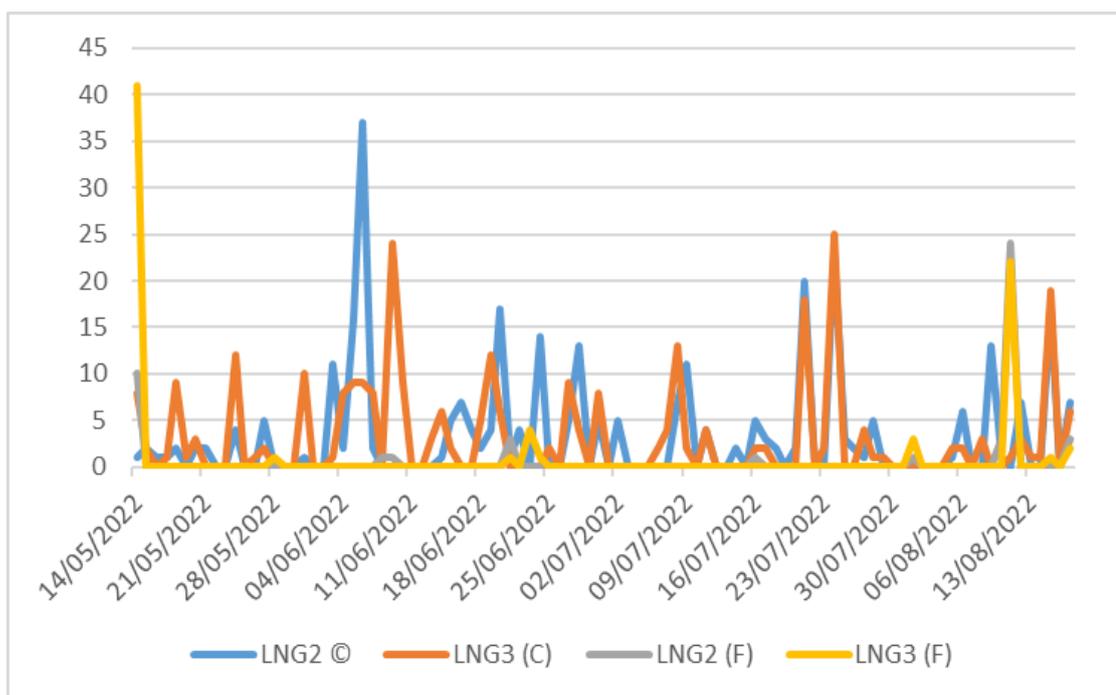


Figure 2. Summary of results from LNG 2 and LNG 3 (14 April to 17 August (96 days)).

Detections were much higher from FPODs compared to CPODs, which is consistent with recent work comparing these two devices but the acoustic index (Mean DPM day) is consistent over the two deployment periods, which is encouraging.

In Table 1 detections at LNG 2 were much greater than detections at LNG3, the latter site being the location of the proposed jetty.

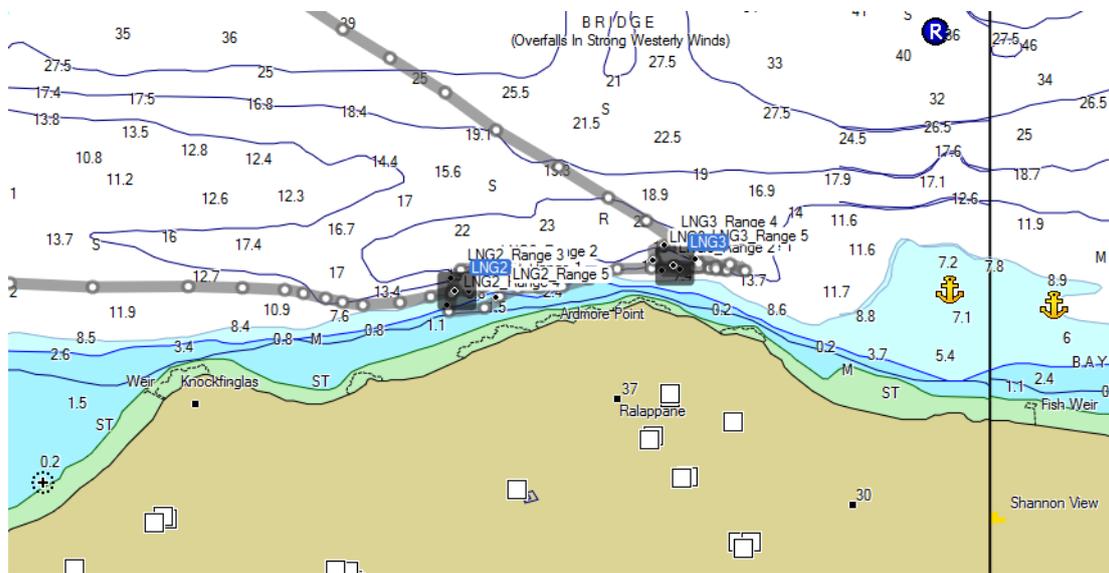
Dr Joanne O'Brien

On behalf of IWDG Consulting

# Static Acoustic Monitoring deployment off Shannon Technology and Energy Park (STEP)\_III

The second Static Acoustic Monitoring (SAM) was deployed at the STEP site on Sunday 21 August 2022 as part of the STEP project. Phase I provided SAM data over a two year period between August 2019 and August 2021. This phase is planned initially to be for 12 months. SAM will be recovered and replaced every three months. A CPOD/FPOD array has been deployed at each site.

Phase I SAM involved the use of CPODs, but as support for CPODs by the manufacturer (Chelonia Ltd) has been discontinued in light of the new generation of SAM devices produced by Chelonia (FPOD). To make the long-term transition from CPODs to FPODs we will deploy the two devices in parallel for the 12 month period so we can combine the data from Phase I with Phase II.



Location of LNG2 and LNG3 off STEP, Ardmore Point

## SAM deployment

SAM was deployed at LNG2 and at a new site (LNG3). SAM has been deployed at LNG both in Phase I and during an study for Shannon LNG between between June 2006 and June 2007 (using TPODs). LNG3 is a site 800m (0.4nmls) upriver of the proposed jetty of LNG2 and fills potential gap in our understanding of how the dolphins use this area at fine scale.

Table 1: SAM deployments at STEP: May 2022

Location	Deployed	FPOD	CPOD	Deployment time	Recovered
LNG2	4 May 2022	6613	3529	12:36 (BST)	17 August 2022
LNG3	4 May 2022	6616	2640	12:48 (BST)	17 August 2022
LNG2	21 August 2022	6903	3481	12:01 (BST)	19 November 2022
LNG3	21 August 2022	6909	3480	12:09 (BST)	19 November 2022
LNG2	20 November 2022	6905	3530	13:39 (BST)	
LNG3	20 November 2022	6901	2941	13:40 (BST)	

SAM are deployed on acoustic Releases (Sonardyne LRT with 60m rope cannister) were used to anchor the SAM array to a 20kg mooring.

### LNG2

A FPOD/CPOD array was deployed at LNG 2 on Sunday 20 November 2022. The array was deployed at a depth of 21m (Release Code 246.1) at **N52 35.132 W9 26.336** (@13:29

Following deployment the AR (13.07v) was ranged from a number of positions to enabled triangulation to its position should the AR fail to communicate with the transponder on recovery.

*Table 2: Triangulation to SAM deployment at LNG2: 21 August 2022*

<b>Triangulation</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Range (m)</b>
WP2	N52 35.143	W9 26.352	30.9
WP3	N52 35.125	W9 26.336	22.1
WP4	N52 35.360	W9 26.360	44.7
WP7	N52 35.127	W9 26.339	20.6

### LNG3

A FPOD/CPOD array was deployed at LNG 2 on Sunday 20 November 2022. The AR (12.91v) on the array was deployed at a depth of 21m (Release Code 020.1) at **N52 35.165 W9 25.714** (@13:40).

Following deployment the AR was not ranged to as the control box kept returning fail on ranging . This was due to it bring unable to select the release code (020.1), which may be due to the damp conditions. It selected ok in the centre prior to deployment.

The SAM arrays represents the continuation of phase three of Static Acoustic Monitoring and will be *in situ* for 3-4 months, with planned recover in **mid-February 2023**.

Drs Simon Berrow and Joanne O'Brien  
21 November 2022  
on behalf of

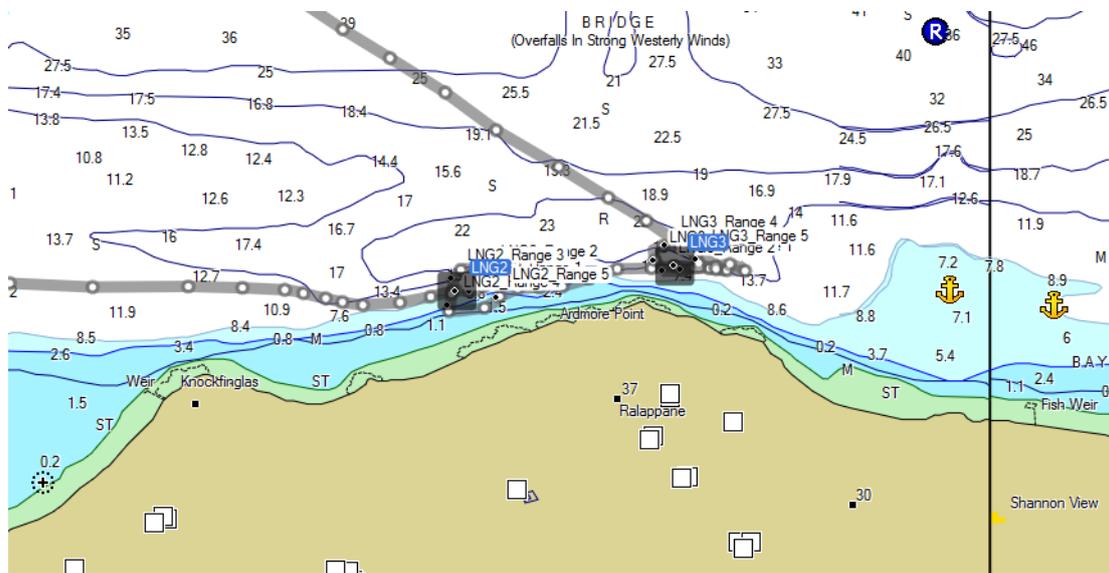


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# Static Acoustic Monitoring deployment off Shannon Technology and Energy Park (STEP)\_IV

The fourth Static Acoustic Monitoring (SAM) was deployed at the STEP site on Wednesday 1 February 2023 as part of the STEP project. Phase I provided SAM data over a two year period between August 2019 and August 2021. This phase is planned initially to be for 12 months. SAM will be recovered and replaced every three months. A CPOD/FPOD array has been deployed at each site.

Phase I SAM involved the use of CPODs, but as support for CPODs by the manufacturer (Chelonia Ltd) has been discontinued in light of the new generation of SAM devices produced by Chelonia (FPOD). To make the long-term transition from CPODs to FPODs we will deploy the two devices in parallel for the 12 month period so we can combine the data from Phase I with Phase II.



Location of LNG2 and LNG3 off STEP, Ardmore Point

## SAM deployment

SAM was deployed at LNG2 and at a new site (LNG3). SAM has been deployed at LNG both in Phase I and during an study for Shannon LNG between between June 2006 and June 2007 (using TPODs). LNG3 is a site 800m (0.4nmls) upriver of the proposed jetty of LNG2 and fills potential gap in our understanding of how the dolphins use this area at fine scale.

Table 1: SAM deployments at STEP: May 2022

Location	Deployed	FPOD	CPOD	Deployment time	Recovered
LNG2	4 May 2022	6613	3529	12:36 (BST)	17 August 2022
LNG3	4 May 2022	6616	2640	12:48 (BST)	17 August 2022
LNG2	21 August 2022	6903	3481	12:01 (BST)	19 November 2022
LNG3	21 August 2022	6909	3480	12:09 (BST)	19 November 2022
LNG2	20 November 2022	6905	3530	13:39 (BST)	29 January 2023
LNG3	20 November 2022	6901	2941	13:40 (BST)	29 January 2023
LNG2	1 February 2023	6907	3481	14:15	

LNG3	1 February 2023	1 February 2023	6908	3528	14:19
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SAM are deployed on acoustic Releases (Sonardyne LRT with 60m rope cannister) were used to anchor the SAM array to a 20kg mooring.

### LNG2

A FPOD/CPOD array was deployed at LNG 2 on Wednesday 1 February 2023. The array was deployed at a depth of 21m (Release Code 233.2) at **N52 35.132 W9 26.336 (@14:15)**

Following deployment the AR (13.07v) was ranged from a number of positions to enabled triangulation to its position should the AR fail to communicate with the transponder on recovery.

### LNG3

A FPOD/CPOD array was deployed at LNG 2 on Wednesday 1 February 2023. The AR (12.91v) on the array was deployed at a depth of 21m (Release Code 213.2) at **N52 35.165 W9 25.714 (@14:19)**.

Following deployment we could not range as we had no functioning control box. The SAM arrays represents the continuation of phase three of Static Acoustic Monitoring and will be *in situ* for 3-4 months, with planned recover in **early May 2023**. This recovery will complete a year of SAM at two sites

Drs Simon Berrow and Joanne O'Brien  
1 February 2023  
on behalf of



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# STATIC ACOUSTIC MONITORING OFF ARDMORE FOR LNG PROJECT

DECEMBER 2023

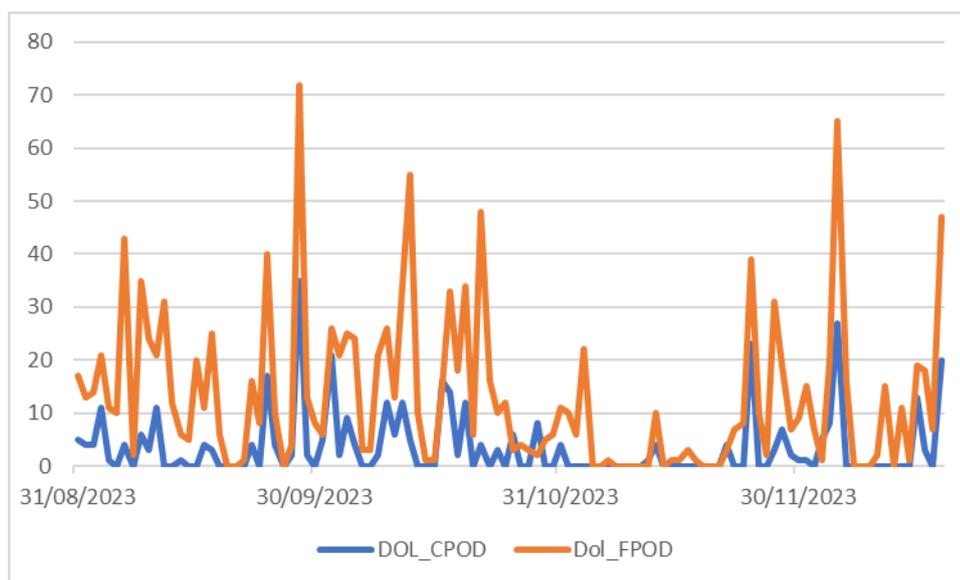


Static Acoustic Monitoring (SAM) using C-PODs and F-PODs were carried out at two locations, off Ardmore Point Co. Kerry from 31 August to 18 December 2023 (110 days). Dolphins were recorded on 89% of days at LNG using F-PODs. Monitoring is continuing at both locations and statistical modelling of the long-term dataset will be carried out after 12 months.

**Table 2. Summary of results from SAM at each of location**

Location	No of days	Dates	POD Type	Porpoise	Dolphin	Total	% DP days	Mean DPM/Day
LNG2	110	31/08-18/12/2023	FPOD	73	1,428	1,501	89	12.9
LNG2	110	31/08-18/12/2023	CPOD	83	390	473	50	3.5
LNG3		Not recovered						
LNG3		Not recovered						

Detection trends between sites are very similar and across recording units with F-PODs out performing C-PODs by on average 40-50%. This is most likely due to the enhanced electronics used in F-PODs and the greater surface area of the hydrophone available (Figure 1).



**Figure 1. Summary of results from LNG 2 (31 August to 18 December 2023 (110 days).**