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|   | <b>OEE-GC</b>   | <b>RAM</b> | <b>MEM</b> | <b>25085</b> | <b>01</b> |
|   | Department-Team   | Site       | Doc. Type  | Number       | Rev.      |
| Document Title:   | <i>Rampion 2 Piling Restriction Memo for Secretary of State</i> |            |            |              |           |

# *Rampion 2 Piling Restriction*


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## Revision History

| Rev. | Status   | Remark/Description | Author | Date       |
|------|----------|--------------------|--------|------------|
| 01   | For Info | First Issue        | VMAT   | 19/02/2025 |
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### List of Abbreviations

|                |                                    |
|----------------|------------------------------------|
| <b>DCO</b>     | Development Consent Order          |
| <b>DDD</b>     | Drive Drill Drive                  |
| <b>DP</b>      | Dynamic Positioning                |
| <b>EIA</b>     | Environmental Impact Assessment    |
| <b>ES</b>      | Environmental Statement            |
| <b>FOU</b>     | Monopile Foundation                |
| <b>IAC</b>     | Inter Array Cables                 |
| <b>MMO</b>     | Marine Management Organisation     |
| <b>OWF</b>     | Offshore Wind Farm                 |
| <b>RFI</b>     | Request for Information            |
| <b>SCNB</b>    | Statutory Nature Conservation Body |
| <b>T&amp;I</b> | Transport and Installation         |
| <b>WDT</b>     | Weather Downtime Analysis          |
| <b>WTG</b>     | Wind Turbine Generator             |

## 1 Introduction

### 1.1 Background

On February 6<sup>th</sup> 2025, the UK Department for Energy Security & Net Zero wrote to Rampion Extension Limited as the “Applicant” for the Rampion 2 Development Consent Order (the “DCO”) requesting further information. This memo provides part of the information requested.

### 1.2 Objective


This memo presents high level wind turbine generator monopile foundation (“FOU”) transport and installation (“T&I”) programmes for three scenarios, namely:

- *Scenario 1 – Applicant End of Examination Position;*
- *Scenario 2 – Applicant End of Examination Modified for Without Prejudice Position on Herring Spawning and for a Without Prejudice July piling ban applied in the West Array Area; and*
- *Scenario 3 – Statutory Nature Conservation Body End of Examination Position Modified for Without Prejudice Position on Herring Spawning.*

Table 1 Visual Representation of programme Scenarios considered

|       | Scenario 1                            |             |           | Scenario 2  |          |           | Scenario 3  |          |           |
|-------|---------------------------------------|-------------|-----------|---|----------|-----------|---|----------|-----------|
|       | Applicant End of Examination Position |             |           | Applicant End of Examination Position Adjusted for MMO SCG and Extending West Ban to July |          |           | SNCB End of Examination Position Adjusted for MMO SCG |          |           |
| Month | East Ban                              | West Ban    | Abatement | East Ban  | West Ban | Abatement | East Ban  | West Ban | Abatement |
| Jan   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Feb   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Mar   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Apr   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| May   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Jun   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Jul   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Aug   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Sep   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Oct   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Nov   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
| Dec   |                                       |             | DBBC      |   |          | DBBC      |   |          | DBBC      |
|       |                                       | Pilling Ban |           | DBBC, Double Big Bubble Curtain   |          |           |   |          |           |

Modelling of the SCNB end of examination position (not modified to account for subsequent discussions with the MMO) has not been undertaken as this provides only a 3 month window per year for foundation installation works. This would result in a foundation campaign taking several years with a single

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installation vessel, thus beyond the worst case duration assumed for the environmental impact assessment (“EIA”).

## 2 Assumption Summary

Assumptions are principally set from those directly relevant from the Environmental Statement, covering the Smaller WTG type. A summary of these assumptions are set out in the table below.

| Parameter                           | Value                              |
|-------------------------------------|------------------------------------|
| Number of Foundations               | 90                                 |
| Foundation Type                     | Monopile                           |
| Monopile Diameter                   | Ø10m                               |
| Marshalling Port                    | Rotterdam                          |
| % of Drilled Locations              | 50%                                |
| Foundation Installation Vessel Type | Floating / Dynamic Position (“DP”) |
| Drilling Method                     | Drive Drill Drive (“DDD”)          |

## 3 Methodology

### 3.1 General

Based on the assumptions summarised in Section 2, single cycle critical path timelines for the installation operations for both driven and DDD foundations have been developed.


Task durations are based on RWE’s experience on construction projects.

Weather limits for each operation in the cycle are defined for wind, waves and current as may be required, based on known vessel operability limits and RWE construction experience.

### 3.2 Assumptions

Assumption for modelling:

- One installation spread is used for both driven piles and drilled piles;
- DP Installation vessel ‘Les Alizes’ is benchmarked for activity cycle steps and operational limits. This is considered one of the most capable vessels for this type of installation activity and is currently under long term charter with RWE;
- 5 foundations can be loaded on to the installation vessel at any one time;
- To simplify the analysis, it is assumed that the drilled locations are installed first, the drill spread is demobilized and the remaining drive-only locations are installed thereafter;
- The weather downtime analysis shown is considering P90 weather. This is typical for installation programming work when there are hard constraints;

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- A drill rate of 0.2 m/hr is assumed. The drilling rate is based on estimates from specialist drilling contractors for large diameter monopile drilling, modified for risks associated with drilling such as learning, equipment breakdown and that softer material of varying thickness sitting above the sandstone layer will also need to be drilled. This drilling rate cannot be verified at present as the technology for 10m diameter monopiles has yet to be used within the offshore wind industry;
- A 10m layer of sandstone is present at each DDD location;
- For direct comparability all installation campaigns for each scenario will start at the same time, which is the 1st August and corresponds to when works would have to start observing the SNCB position;
- Having a pilling ban in the East Array area between November and January can be sensibly planned around using the other time available without a pilling restriction.

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## 4 Schedules

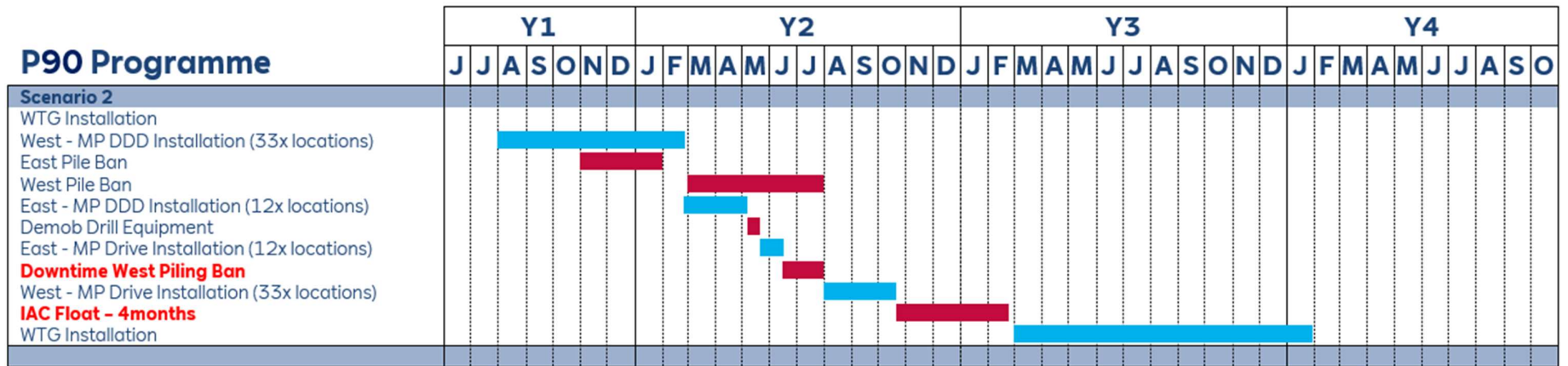
### Scenario 1 (Applicant End of Examination Position)

| P90 Programme                                | Y1 |   |   |   |   | Y2 |   |   |   |   | Y3 |   |   |   |   | Y4 |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|----|---|---|---|---|----|---|---|---|---|----|---|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | J  | J | A | S | O | N  | D | J | F | M | A  | M | J | J | A | S  | O | N | D | J | F | M | A | M | J | J | A | S | O |
| Scenario 1                                   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| West - MP DDD Installation (33x locations)   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| West Pile Ban                                |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| East - MP DDD Installation (12x locations)   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Demob Drill Equipment                        |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| East - MP Drive Installation (12x locations) |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Downtime West Piling Ban                     |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| West - MP Drive Installation (33x locations) |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| IAC Float – 4months                          |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| WTG Installation                             |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |



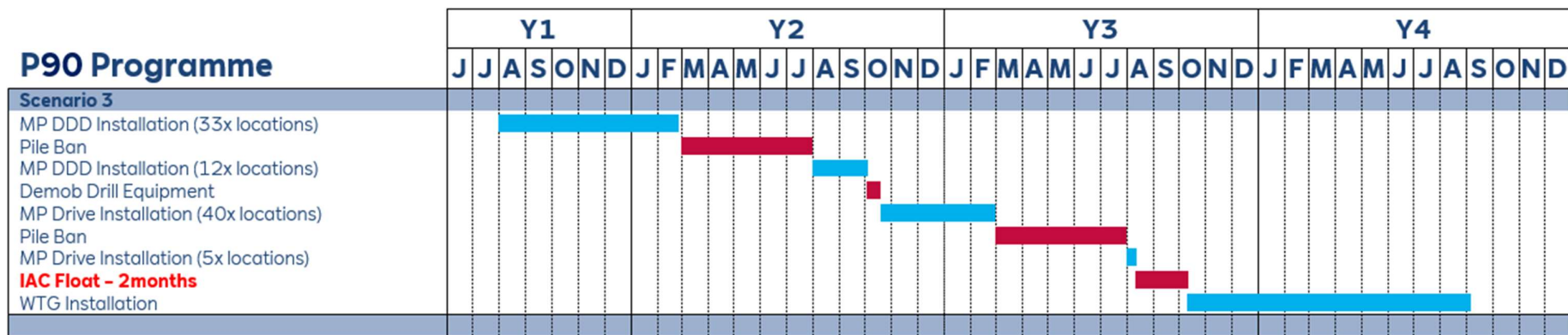
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**Scenario 2** (Applicant End of Examination Modified for Without Prejudice Position on Herring Spawning and for a Without Prejudice July piling ban applied in the West Array Area)



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**Scenario 3** (Statutory Nature Conservation Body End of Examination Position Modified for Without Prejudice Position on Herring Spawning)



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## 5 Conclusions

In Scenario 1, the foundation installation works are likely to take a little over a year. This is clearly within the worst case EIA parameter of a 2 year WTG foundation build duration, detailed within the ES.

As this work duration is just a little over a year, there will be little change on this overall duration if it started at a different time of year as all months will be utilised, though note that there is a small amount of time where works will have to be stood down to observe the March to June West Array Area piling ban. As per the assumptions, this does not include other factors which could impact on the overall construction duration such as the breakdown of the installation vessel and/or equipment other than provided for in the drill rate allowance.

Scenario 2 demonstrates the impact of the West Array piling ban being extended into July. The duration of the foundation installation works is predicted to be extended by around 1 month and will extend the period whereby works would have to stand down during the ban. As for Scenario 1, this schedule is within the worst case assessed for the EIA.

Scenario 3 sets out that observing the SNCB position at the end of the examination, even when modified for the post examination discussions with the MMO, results in a significantly extended duration of the foundation piling works, from a little over a year as per scenario 1 to just over two years.

Scenario 3 in effect almost doubles the duration of foundation works when compared to Scenario 1 and takes them beyond the worst case duration parameter set out in the EIA. Overall the works are foreseen to be extended by nearly 1 year.