



**RWS INFORMATION**

## **Market consultation**

For bird detection systems in the North Sea



**Colophon**

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## Content

### **Introduction 3**

#### **1 Subject of the market consultation 4**

- 1.1. Introduction 4
- 1.2. Need 4
- 1.3. Background information 5
- 1.4. Scope of the assignment 6
- 1.5. Duration 7
- 1.6. Functional requirements 7
- 1.7. Technical requirements 9
- 1.8. Operations and maintenance 9
- 1.9. Points of Attention 10

#### **2 Purpose and process of the market consultation 11**

- 2.1. Purpose of the market consultation 11
- 2.2. Target audience 11
  - 2.2.1. Specific knowledge and experience 11
- 2.3. TenderNed 11
- 2.4. Planning 12
  - 2.4.1. Information session 12
    - 2.4.1.1. Registration for the information session 12
    - 2.4.2. Questions regarding the market consultation 12
    - 2.4.3. Submission of the Questionnaire 12
    - 2.4.4. Individual clarification meetings 12
    - 2.4.5. Completion and publication of report 12
    - 2.4.6. Conditions of the market consultation 13

#### **3 Information about Rijkswaterstaat 14**

- 3.1. About Rijkswaterstaat 14
- 3.2. Mission and Key Focus Areas of RWS 14
- 3.3. Focus area Sustainability and Living Environment 15
- 3.4. Focus area Data and Information Management 15
- 3.5. Socially Responsible Procurement (SRP) 16

#### **4 Questions 17**

## Introduction

In preparation for the upcoming European tender for Bird Detection Systems (BDS) in the North Sea, Rijkswaterstaat Central Information Services (hereinafter referred to as RWS) is organizing this market consultation.

RWS highly values the input of market participants and aims to involve them proactively and at an early stage, prior to the start of the intended European tender procedure.

This document outlines the intended scope of the contract, the purpose of the market consultation, its structure, and the way in which interested parties can participate.

In addition to the Dutch document, an English translation of the market consultation document will also be published. In case of discrepancies, the Dutch version shall prevail.

# 1 Subject of the market consultation

## 1.1. Introduction

Commissioned by the Ministry of Climate and Green Growth (KGG), Rijkswaterstaat (RWS) has been collecting data on (nocturnal) bird migration since 2018. These data are primarily used for the development and validation of a predictive model for bird migration. The purpose of this model is to forecast peak nights of mass migration in a timely manner. This is essential for the application of the so-called curtailment measure, as stipulated in the wind farm site decisions ('kavelbesluiten').

This curtailment measure is a bird mortality mitigation measure whereby wind turbines are temporarily (almost completely) brought to a standstill when peak bird migration is expected. The development of this curtailment measure is carried out within the Start/Stop project of RWS Zee & Delta (ZD).

As part of the aforementioned assignment from KGG, the Maritime Information Service Point (MIVSP) project of RWS Central Information Services (CIV) has previously installed several bird radars. These radars record flight tracks, and the collected data are used to calculate the number of birds per kilometer per hour – the so-called Mean Traffic Rates (MTRs). These MTR values are applied for both the training and validation of the predictive model.

In preparation for a potential European tender for bird detection systems, RWS has initiated this market consultation. RWS expects to require one or more bird detection systems to replace the current bird radars (life cycle management), as well as additional systems for planned new offshore locations as part of the [Offshore Wind Energy 21 GW program](#) rollout.

Specifically, through this market consultation, RWS aims to assess the following points:

- A. The role of the supplier after delivery of the bird detection systems, such as installation, operations and maintenance.
- B. The technical and functional requirements: Are the requirements set by RWS for a bird detection system feasible? Where does the market see challenges and opportunities?

## 1.2. Need

Due to the increasing number of wind farms in the North Sea, there is a growing need for insight into bird migration and its interaction with wind farms. This includes both flight tracks in and around wind farms and turbines, as well as actual collisions with turbines.

RWS therefore expects to require one or more bird detection systems\* for planned new locations as part of the Offshore Wind Energy 21 GW program rollout (<https://noordzeeloket.nl/en/functions-use/offshore-wind-energy/>), as well as one or more systems to replace the current systems. At this stage, the exact number cannot yet be determined by RWS, but it is likely to be between five and ten systems.

*\* A bird detection system may be based on different types of technology, such as radar, camera, a combination of both, or other technologies.*

In addition, RWS is currently exploring ways to gain more insight into actual collisions of both birds and bats with wind turbines. This topic will likely not be part of the requirements of the planned European tender, but the system may potentially be deployed in combination with the bird detection systems requested here, and where possible even linked together as one integrated system. For this reason, RWS has chosen to include this topic in the present market consultation.

### **1.3. Background information**

RWS currently operates seven bird detection systems based on radar technology. Of these, six are installed offshore:

- three on offshore high-voltage stations (OHVS) operated by TenneT;
- two on wind turbine generators (WTGs) owned by wind farm operators (WFOs);
- one on an oil and gas platform.

One bird detection system is installed onshore at the Offshore Expertise Center (OEC) of RWS in Stellendam, for testing purposes.

In the coming years, the service life of the first bird detection systems will be reached. As part of life cycle management (LCM), these systems will therefore need to be replaced. It is still uncertain whether all current locations will be renewed. The future supplier should take into account that the replacement of existing systems under LCM will take place offshore.

In the coming years, the rollout of Offshore Wind Energy 21 GW program will continue, and additional wind farms will be developed. These are currently planned in the wind energy areas IJmuiden Ver (from 2028), Nederwiek (from 2030), Ten Noorden van de Waddeneilanden (from 2031), and Doordewind (from 2032). Whether bird detection systems will be required in all these new wind energy areas is still uncertain.

RWS follows a phased approach when installing bird detection systems at newly developed wind farm locations:

1. Initiation phase: The design of the OHVS/WTG where the bird detection system will be installed is adapted to the specifications of the system. RWS coordinates this with the contractor of the OHVS/WTG.
2. Mock-up phase: The bird detection system is installed in an onshore mock-up setup, tested, and prepared for transport to the contractor's yard for the respective wind farm. A System Integration Test (SIT) is performed.
3. Onshore phase: The contractor installs the bird detection system onshore (at the construction yard) on the relevant OHVS/WTG, with possible assistance from the bird detection system supplier. A Harbour Acceptance Test (HAT) is performed.
4. Offshore phase: The OHVS/WTG is installed offshore, and the final installation steps for the bird detection system are carried out. An Offshore Acceptance Test (OAT) is performed.
5. Maintenance phase: Preventive and corrective maintenance is carried out during the service life.

The timeframe between the initiation phase and the mock-up phase is approximately six months. The timeframe between the mock-up phase and the

offshore phase is approximately twelve months. This means that RWS must have the specifications available at an early stage (the initiation phase) for newly developed wind farms.

The consequence of this phased approach is that a bird detection system installed onshore will remain inactive for about 18 months. The system must be able to withstand this period.

The first bird detection system to be procured by RWS will, regardless of whether it is used for life cycle management (LCM) or for a newly developed wind farm, first undergo extensive testing at the Offshore Expertise Center (OEC) during the mock-up phase. The purpose of these tests is to identify the differences between the new system and the current systems. The testing period is expected to last approximately one year.

As indicated above, the exact number of bird detection systems to be procured has not yet been determined. Further clarity will be provided in the final European tender. It is expected that the contract will include a guaranteed number of bird detection systems, as well as one or more optional systems.

#### **1.4. Scope**

As indicated above, the expected assignment consists of the delivery of one or more bird detection systems. In this market consultation, we refer to this as the primary scope.

In addition to supplying bird detection systems, RWS wishes to assess whether suppliers are willing and able to provide additional services. In this market consultation, we refer to this as the secondary scope.

Under the primary scope, RWS defines the following activities:

- Delivery of one or more bird detection systems at the Offshore Expertise Center (OEC).
- Installation: Contributing to and advising on the final integration at the exact location on existing and new offshore sites (each offshore site has its own challenges).
- System integration of the bird detection system into the existing RWS data service.
- Operations and maintenance: Remote service and support for hardware, software, and data, including keeping these components up to date and implementing adjustments or improvements based on new findings.
- Training: Providing training to RWS and its contractors on at least installation, preventive maintenance, and corrective maintenance.

Under the secondary scope, RWS considers one or more of the following activities:

- Installation: Positioning, mounting, and configuring the detection system on the OHVS/WTG so that it is ready for use. The installation must comply with the specified requirements, including but not limited to environmental factors, electrical safety, documentation, and manufacturer's instructions.
- Commissioning: Activating the system at the final offshore location. The bird detection system must be commissioned in accordance with the requirements set by both the manufacturer and RWS, and deliver usable data for the end user.

- Operations and Maintenance: An ongoing service covering preventive, corrective, and adaptive maintenance.
- Training: For data analysis.
- Performing validations and calibrations to verify data quality during installation and at intervals (including reporting). Where possible, this should be done remotely, for example in combination with another sensor.

### 1.5. Duration

RWS intends to enter into an agreement with an anticipated initial term of approximately 10 years, including options to extend. The exact duration will be determined at a later stage.

### 1.6. Functional requirements

The current bird detection systems are radar-based. This does not mean that the new solution must also be radar-based. The new bird detection system should preferably be a Commercial off-the-shelf (CotS) product or a combination of such products. A CotS product is a ready-made commercial product (software and/or hardware) that is commercially available to the general public and is not specifically designed for a single customer.

RWS therefore sets functional requirements for the bird detection system. The purpose of this part of the market consultation is to assess the feasibility of these requirements with the market.

The bird detection system must, during operational use (>95% uptime, 24/7), be capable of providing an **accurate representation of bird activity** at the offshore location under various (weather) conditions, whether installed on a WTG or on an OHVS. The main functional requirements for the desired bird detection system under these conditions are as follows:

#### Detection of different size classes

The system must be able to detect birds of various sizes. Birds can be classified as follows:

- Small: 10 cm<sup>2</sup> (songbird)
- Medium: 30 cm<sup>2</sup> (lapwing)
- Large: 250 cm<sup>2</sup> (goose)
- Group: ≥1 m<sup>2</sup> (flock of birds)

For detection in the horizontal plane, the system must, under conditions up to and including Sea State 4, achieve a detection probability/high quality rate of >80% for birds of the following sizes:

- 10 cm<sup>2</sup>: from 0 km up to at least 3 km from the sensor in the horizontal plane
- 30 cm<sup>2</sup>: from 0 km up to at least 4 km from the radar in the horizontal plane
- 250 cm<sup>2</sup>: from 0 km up to at least 6 km from the radar in the horizontal plane
- ≥1 m<sup>2</sup>: from 0 km up to at least 6 km from the radar in the horizontal plane

For detection in the vertical plane, the system must, for all size classes, achieve a detection probability of >80% from 0 up to at least 1 km above mean sea level.

### Bird flight paths

The bird detection system must be capable of detecting individual bird flight paths and storing them locally. The information RWS requires for each flight path from the bird detection systems includes:

- Accurate 3D geometry of flight paths/tracks consisting of plots with x-, y-, z-, and m-coordinates;
- X coordinates as longitude in coordinate reference system WGS84 or ETRS89;
- Y coordinates as latitude in coordinate reference system WGS84 or ETRS89;
- Z coordinates as altitude in meters above mean sea level (MSL);
- M coordinates as time in UTC (Coordinated Universal Time);
- Flight direction/azimuth relative to True North (0 degrees) in decimal degrees;
- Flight speed as ground speed;
- Optionally, airspeed of the target;
- Reliability indicators such as a confidence interval regarding environmental and technical factors during the measured time span;

### Noise/Clutter

RWS requires that the bird detection system, when detecting, identifying, and tracking bird flight paths, can handle and compensate for noise or clutter caused by:

- Wind turbines with rotating blades;
- Precipitation;
- Waves;
- interference.

### **Data processing**

- The bird detection system must provide (processed) data in an SQL-based database.
- Upon request, raw data must be delivered in such a way that RWS or third-party research organizations can use this data without restrictions.
- RWS requires insight into the algorithms used to process the raw data.

### **Software**

- The bird detection system must include software applications capable of displaying spatial and temporal patterns.
- Flight paths and noise must be visualized within 5 seconds on a (near) real-time display in both the horizontal and vertical planes.
- Transmission of collected and processed data must take place via standard Ethernet LAN/WAN.
- The bird detection system must provide the capability to store up to twelve months of data locally in case of connection failure.

### 1.7. Technical requirements

The following technical, structural, and operational requirements apply to the bird detection system:

- Minimum service life of ten years with a maintenance interval of no more than once per year on-site (meaning a maximum of one preventive maintenance offshore visit per year).
- The bird detection system must be reliable and available under offshore weather conditions in the North Sea (wind, rain, fog, cold temperatures, waves).
- Corrosion-resistant for at least ten years.
- Dimensional and weight limitations:
  - Horizontal plane: maximum diameter of 400 cm
  - Vertical plane: maximum height of 400 cm
  - Maximum weight of 400 kg
- Physically capable of withstanding hurricanes (up to Beaufort scale 12) with extreme gusts, taking venturi and vortex effects into account.
- Fully operational and available up to and including Beaufort scale 10.
- Fully operational and available within a temperature range of -20°C to +55°C.
- The risk of lightning strikes at the site must not increase.
- Maximum power consumption must not exceed 3.5 kWh at a voltage of 220–240 V.
- Modular design so that modules can be replaced in case of failure (repair by replacement).
- Must be able to operate adjacent to a turbine/mast and at the edge of a platform.
- Preferably consists of as few moving parts as possible.
- Health status must be continuously monitored remotely. To enable this, the bird detection system must continuously provide the necessary technical condition data.

### 1.8. Operations and maintenance

The following requirements apply to operations and maintenance. A distinction is made between primary scope and additional scope.

#### *Primary scope (minimal requirements)*

- The bird detection system must be installable and maintainable by third parties (contractors of RWS), with remote support provided by the contractor.
- The Contractor must provide training to RWS and its subcontractors on installation, preventive maintenance, and corrective maintenance.
- Scheduled maintenance must not exceed 4 hours, as this is the maximum permitted stay on an offshore location.
- Critical spare parts for repair work must be supplied promptly.
- Remote service and support, including parameter adjustments must be possible by the contractor, RWS, and/or third parties via a dashboard and user interface over the IP network.

*Secondary scope*

- The contractor shall, upon request, provide support for fault recovery at offshore locations (meaning WTG and OHVS), 365 days per year (including weekends), subject to the availability of offshore transport and prevailing weather conditions.
- The contractor shall be able to execute routine offshore operations and maintenance services seven days per week (including weekends), subject to the availability of offshore transport and prevailing weather conditions.

*Note: Transport to offshore locations will be provided by RWS.*

**1.9. Points of Attention**

RWS identifies the following points of attention:

- Offshore locations are difficult to access due to limited transport options. This is caused by staff shortages in the sector and unpredictable weather conditions ("safe sailing weather"). RWS expects that the new wind farms further offshore will be harder to reach than the existing wind farms which are located closer to the coast. In addition, due to the travel distance to an offshore location, the effective working time on site is limited to a maximum of 4 hours. This means that, despite the harsh environment, the bird detection system should require as little preventive and corrective maintenance as possible.
- For bird detection systems intended for the new offshore wind farms, there are long periods between the mock-up phase, the onshore phase, and the final commissioning at the offshore location. The bird detection system must be able to withstand these conditions. Furthermore, circumstances prior to commissioning can be extreme, such as prolonged transport and environmental factors like heat at the onshore location. The equipment must be resistant to these conditions as well.
- A typical user of bird detection systems does not use the data for scientific research or for a bird migration prediction model. RWS does use the data for these purposes and therefore imposes higher requirements on data quality than the average user.
- The government imposes strict requirements on the security of IT systems. Connecting to the RWS network often requires additional secure, customized solutions.

## 2 Purpose and process of the market consultation

### 2.1. Purpose of the market consultation

The purpose of this market consultation is fourfold:

- a) To involve the market at an early stage in the intended procurement process in order to align the tender documents as closely as possible with market conditions;
- b) To gain insight into the feasibility of the project and the conditions under which it can be executed;
- c) To explore alternative solutions to the currently used bird radar system;
- d) To investigate the possibilities for achieving sustainability benefits (see the relevant sections in Chapter 3 for further details).

### 2.2. Target audience

Any market party that believes it can contribute to this market consultation is invited to participate.

#### 2.2.1. Specific knowledge and experience

The primary target audience for this market consultation consists of market parties with knowledge of and/or experience in:

- Planning, design, construction, delivery, transport, testing, and maintenance of bird/drone detection systems;
- Offshore installation and offshore maintenance of equipment;
- System integration of sensors and software;
- Software development for long-term data management and real-time data visualization;
- Data analysis, data calibration, and data validation of bird migration information.
- Baseline Informatiebeveiliging Overheid (BIO2) compliance ([Baseline Informatiebeveiliging Overheid Cybersecurity - Digitale Overheid](#) )

### 2.3. TenderNed

RWS has published this document on TenderNed to reach, engage, and invite as many market parties as possible to contribute their ideas.

All communication related to this market consultation will take place via TenderNed. By using TenderNed, all interested market parties are simultaneously informed of relevant information.

## 2.4. Planning

Activitiy	Date and time
Publication of the market consultation document on TenderNed.	17 December 2025
Deadline for registration and submission of questions for the information session.	21 January 2026 <i>by 12:00 pm</i>
Information session for market parties	22 January 2026
Deadline for submitting questions regarding this document	26 January 2026
Publication of the Memorandum of Information	29 January 2026
Deadline for submitting the completed questionnaire	3 February 2026
Dates for possible individual clarification meetings	Week 8 2026
Completion and publication of the consultation report	March 2026

### 2.4.1. Information session

RWS will organize an information session to provide further explanation on the purpose and approach of this market consultation. This session will be presented in English.

The presentation and a list of participating market parties will be shared via TenderNed.

The information session will be held via MS Teams:  
Time from 1:00 p.m. to 2:30 p.m. (Amsterdam time zone)

#### 2.4.1.1. Registration for the information session

Registration for the information session can be done via the messaging module in TenderNed. This is possible until the deadline mentioned in section 2.4. When registering, please include your name, organization, and position. A maximum of two participants per market party may register.

### 2.4.2. Questions regarding the market consultation

Questions about this market consultation can be submitted via the messaging module in TenderNed. RWS will answer these (anonymized) questions in a Memorandum of Information published on TenderNed

### 2.4.3. Submission of the Questionnaire

Any interested market party that can contribute to the market consultation is requested to submit answers to the questions in Chapter 4 of this document via TenderNed before the deadline mentioned in section 2.4.

### 2.4.4. Individual clarification meetings

RWS reserves the option to invite market parties for additional clarification on their responses based on the submitted questionnaires.

### 2.4.5. Completion and publication of report

The market consultation will be concluded with the publication of the consultation report on TenderNed. This report will be prepared by RWS and will contain the main findings and key conclusions for RWS. The findings will be anonymized, and commercially confidential information will not be included.

Publishing this report ensures a level playing field and that all interested market

parties have access to the same information. The presentation from the information session and a list of participating companies will also be shared via TenderNed.

*2.4.6. Conditions of the market consultation*

- RWS has included information in this document based on the current situation. Insights obtained from this market consultation will be used to make a better-informed decision regarding the intended procurement.
- All relevant information required to prepare a tender submission will be provided in the official tender documents.
- RWS will use the insights gained from the market consultation (where relevant) in preparing the procurement and the tender documents. RWS reserves the right not to use these insights or to use them only partially.
- Information provided in this market consultation may differ from information later provided in the context of any potential procurement procedure.
- This market consultation does not constitute an invitation to submit a tender.
- RWS reserves the right to adjust the schedule outlined in this document at its discretion and/or to suspend or terminate the market consultation process in whole or in part.
- Information provided to RWS through this market consultation will be treated confidentially and will not be used for any purpose other than gaining market knowledge to develop a higher-quality set of requirements and tender documents.
- RWS does not reimburse any costs incurred or to be incurred in connection with this market consultation.
- By participating in this market consultation, the interested market party declares its agreement with all conditions stated herein.

### 3 Information about Rijkswaterstaat

This chapter provides further information about RWS and its key focus areas.

#### 3.1. About Rijkswaterstaat

Rijkswaterstaat is the executive agency of the Ministry of Infrastructure and Water Management and works daily to ensure a safe, livable, and accessible Netherlands.

Rijkswaterstaat Central Information Services (RWS-CIV) is one of the national organizational units within RWS. RWS-CIV is responsible for the development and availability of information (data) within Rijkswaterstaat. In addition, RWS-CIV provides industrial automation for bridges, tunnels, highways, and other assets. RWS-CIV also manages office automation.

More information about RWS-CIV can be found at [www.rijkswaterstaat.nl](http://www.rijkswaterstaat.nl).

Further details on the procurement of information services are available under [Werkwijze Informatievoorziening](#).

#### 3.2. Mission and Key Focus Areas of RWS

The mission of RWS has remained consistent for many years: we work to ensure a safe, livable, and accessible Netherlands. This mission is reflected in five core tasks:

- 'dry feet' (flood protection),
- 'sufficient and clean water',
- 'smooth and safe traffic on roads and waterways'
- 'a sustainable living environment', and
- 'reliable and usable information'.

Most of Rijkswaterstaat's work follows a path of continuity, constantly developing and improving based on expertise. Responsiveness and adaptability to changing circumstances are key elements in this approach.

At the same time, certain areas require more profound innovation to ensure that we can continue to fulfill our mission in the future. The RWS Compass represents Rijkswaterstaat's long-term strategy. Innovation is driven through focus areas. The five core tasks are themes that Rijkswaterstaat will prioritize in the coming years through these focus areas, as they require fundamental change.

The focus areas and their underlying action points for the coming years are as follows:

1. Asset Management 2.0
  - Action point: Achieve professional asset management in accordance with ISO 55001
2. Climate Adaption
  - Action point: Climate adation policy objectives
  - Action point: Climate adaption in implementation

- Action point: Space for climate change
- 3. Sustainability and Living Environment
  - Action point: Climate-neutral and circular
  - Action point: Energy transition
  - Action point: Nature-inclusive assets
  - Action point: Area-based approach
- 4. Data and Information Services
  - Action point: Increase productivity through digitalization
  - Action point: Strengthen data ecosystems
- 5. Smart Mobility
  - Action point: Digital transformation of mobility
  - Action point: Intelligent multimodal solutions
- 6. Task-Oriented Collaboration
  - Action point: With policy and politics
  - Action point: With the market
  - Action point: In the regions

### **3.3. Focus area Sustainability and Living Environment**

The ambition of the Sustainability and Living Environment focus area is that by 2030 we will generate all our own energy, emit no CO<sub>2</sub>, minimize the use of primary raw materials, reuse existing materials, and manage our assets in a nature-inclusive way.

For RWS-CIV, the action point Climate-Neutral and Circular is particularly relevant. Under this action point, RWS is working to make its own organization more sustainable, such as information services, energy supply, and the Rijksrederij (Government Shipping Company). In addition, we are developing sustainable infrastructure, with our regional services increasingly taking the lead in making our assets climate-neutral and circular.

### **3.4. Focus area Data and Information Management**

In recent years, the focus area *Data and Information Management* has worked through the action point *I-Strategy* to achieve better integration of information services within Rijkswaterstaat's core processes. Through the *IA-Sourcing* action point, we have placed additional emphasis on improving the quality and controllability of industrial automation in our bridges, locks, and tunnels. We will continue this ongoing improvement through the program Targeted Digitalisation. For more information on the vision behind Targeted Digitalisation, please refer to: [Werkwijze Informatievoorziening \(rijkswaterstaat.nl\)](https://www.rijkswaterstaat.nl/werkwijze-informatievoorziening)

For the coming years, we will narrow the focus area to two topics that require additional effort.

The action point Increasing Production Capacity through Digitalisation stems from the growing maintenance challenge and the ambition to achieve a significant productivity leap. To make this possible, we need to modernise and, where necessary, bring the industrial automation within our assets up to standard. The same applies to the core IT infrastructure, including workplaces and networks.

With the action point Strengthening Data Ecosystems, we build on the decision to connect Rijkswaterstaat more closely to the growing digital world around us: '*RWS in Data Ecosystems*'. We see opportunities to achieve substantial efficiency gains by applying the principle of collecting data once and using it multiple times.

### **3.5. Socially Responsible Procurement (SRP)**

The objectives set by the Dutch central government for Socially Responsible Procurement (SRP) are:

1. The central government will be climate-neutral by 2030;
2. will achieve a 50% reduction in the use of primary raw materials by 2030 and be fully circular by 2050;
3. promotes labour participation (*arbeidsparticipatie*), including the creation of 5,000 participation jobs;
4. makes international production chains more sustainable by addressing abuses related to working conditions, human rights, and the environment;
5. stimulates innovation by acting as a launching customer.

Rijkswaterstaat has identified the following high-potential themes for this market consultation:

1. *Energy & Climate;*
2. *Circular Economy;*
3. *Environment & Biodiversity;*

## 4 Questions

<b>Questions regarding interest in the tender</b>	
A1	<b>QUESTION:</b> Does your company have experience in the development, construction, and commissioning of the bird detection system you propose? If so, what is the current installed base and at which locations are these systems operational? Do these include comparable offshore locations?
A2	<b>QUESTION:</b> Is your company able to deliver the primary and/or the secondary scope (see section 1.4)? Please indicate which parts of the primary and/or secondary scope can or cannot be delivered.
A3	<p>The requirements are detailed in sections 1.6 through 1.8 of this document and include, among others:</p> <ul style="list-style-type: none"> <li>• Detection range</li> <li>• Accuracy</li> <li>• Data quality</li> <li>• Noise suppression</li> </ul> <p><b>QUESTION:</b> For each of the above items, please indicate at a high level how your solution will meet the functional requirements (in combination with the technical requirements), and where you see risks or requirements that are difficult or impossible to meet.</p>
A4	<p><b>QUESTION:</b> Can you indicate innovations in the following areas, and their applicability to the bird detection system, including feasibility and risks:</p> <ul style="list-style-type: none"> <li>• Improving data quality and reducing noise in the data, for example noise caused by wind turbines, precipitation, and waves.</li> <li>• Combining different measurement techniques/sensors in one integrated system, taking into account the possibilities for data calibration and data validation.</li> </ul>
A5	<b>QUESTION:</b> What is the horizontal and vertical range of the bird detection system you propose with respect to the functional requirements in section 1.6, and how is this range representative for the typical dimensions of a wind farm?
A6	<b>QUESTION:</b> How can a trend break in data be minimised when replacing the current bird detection systems with another new system?
A7	<b>QUESTION:</b> Is the bird detection system you propose also capable of collision detection (see section 1.2, last paragraph)?
A8	<b>QUESTION:</b> Can the bird detection system you propose be integrated with other third-party sensor systems such as cameras, microphones, and collision detection systems? If so, which ones?

<i>Technical requirements</i>	
B1	<p><u>QUESTION:</u> How will your solution meet the operational conditions at offshore locations, particularly regarding saltwater exposure, harsh weather conditions, and very high wind speeds and gusts?</p> <p><u>QUESTION:</u> How will you ensure that your solution is sufficiently robust and operates without failure with at most one preventive maintenance visit per year on site?</p>
B2	<p><u>QUESTION:</u> Are there solutions for installation on wind turbines and offshore platforms that take into account obstacles close to the sensor? For example, the turbine mast obstructing a significant part of the view.</p>
B3	<p><u>QUESTION:</u> Do you see opportunities through technical solutions to reduce costs, for example by lowering investment costs or reducing (preventive) maintenance?</p>
<i>Operations and maintenance</i>	
C1	<p><u>QUESTION:</u> Can you provide operations and maintenance for the bird detection system according to the primary scope? And for the secondary scope?</p> <p><u>QUESTION:</u> Do you have an organisation in place for this, and what experience does it have with the mentioned activities?</p> <p><u>QUESTION:</u> Is your maintenance organisation able to periodically visit offshore locations for preventive maintenance? (Transport to the location will be arranged by RWS.)</p>
C2	<p><u>QUESTION:</u> Can you indicate whether your solution uses components that need to be periodically replaced during the 10-year service life of the bird detection system (revision parts) to meet the required availability? If so, which parts and what is the estimated replacement interval?</p>
C3	<p><u>QUESTION:</u> In your view, how can life cycle management (LCM) best be secured in the agreement and operations?</p>

<b>Questions regarding delivery and commissioning</b>	
D1	<p><u>QUESTION:</u> What is your standard delivery process up to commissioning, including lead time?</p>

<b>Questions regarding points of attention</b>	
E1	<p><u>QUESTION:</u> Which of the points of attention identified by RWS (section 1.9 of this market consultation) do you see as a risk, and/or do you see any other risks? What are the main risks of the project?</p>

<b>Questions regarding sustainability</b>	
F1	<u>QUESTION:</u> In your opinion, what are the conditions for achieving the most sustainable tender possible? Please also consider smart maintenance for sustainable maintenance.
F2	<u>QUESTION:</u> Do you have insight into the environmental impact of your product or service? If so, could you elaborate?

<b>Finally</b>	
G1	<u>QUESTION:</u> The procurement procedure and execution of the agreement will be conducted in Dutch. Are you able to comply with this requirement?
G2	<u>QUESTION:</u> Are you willing to clarify your answers in a (physical or online) meeting? See also section 2.4.4.