

Our Ref: P&P2

Date: 6 September 2022

Dear Sir/Madam,

**Contract Ref: P&P2**

**Contract Title: Nitrogen and phosphorus excretion calculator tool for pig and poultry**

You are invited to quote for the above in accordance with the enclosed documents.

Instructions on what information we require you to provide is in Section 4 of the following Request for Quotation document.

Your response should be returned to the following email address by 16:00 on 30 September 2022:

[Alice.Watson@environment-agency.gov.uk](mailto:Alice.Watson@environment-agency.gov.uk)

Please confirm, by email, receipt of these documents and whether you intend to submit a quote.

If you have any queries, please do not hesitate to contact me.

Yours sincerely

Alice Waterson  
Senior Advisor

E-mail: [Alice.Watson@environment-agency.gov.uk](mailto:Alice.Watson@environment-agency.gov.uk)  
Telephone: +447879444253

**Environment Agency, Chippenham Depot, Bath Road Industrial Estate, Chippenham,  
SN14 0AB**

# **Request for Quotation**

**Contract Ref: P&P2**

**Contract Title: Nitrogen and phosphorus excretion calculator tool for pig and poultry**

## **Section 1**

### **Who is the Environment Agency?**

We are an Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs. Our principal aims are to protect and improve the environment, and to promote sustainable development.

Further information on our responsibilities, Corporate Plan and how we are structured can be found on our Website.

<https://www.gov.uk/government/organisations/environment-agency/about>

### **What do we spend our money on?**

We are a major procurer of goods and services within the UK, spending circa £600M per annum, our major spend areas are:

- Flood and Coastal Risk Management (design, construction and maintenance)
- ICT and Telecommunications
- Vehicles and Plant
- Environmental Consultancy and Monitoring
- Temporary Staff and Contractors
- Facilities Management, Energy and Utilities
- Flood Management and Water Related Services

### **What do we need from our suppliers?**

Suppliers are vital in supporting the delivery of our corporate plan. We aim to support the economy and society whilst delivering more environmental outcomes for every pound we spend. In many areas we are leading the way on environmental and technical developments. It is our role to ensure that suppliers clearly understand our corporate aims and objectives and know that we are committed to delivering the best value most sustainable solutions, taking into account the whole life cost of our procurement decisions. We promote diversity and equality and treat all of our suppliers fairly.

Our procurement strategy may be of interest to you as a potential supplier. It sets out our priorities and key commitments in a range of areas such as delivering our corporate plan, Government policy, supplier management and sustainable procurement:

<https://www.gov.uk/government/organisations/environment-agency/about/procurement#procurement-strategy>

### **Government changes and collaboration**

Since 1 April 2013, the Environment Agency is no longer responsible for delivering the environmental priorities of Wales. This is now the remit of Natural Resources Wales (NRW). Further information can be found here:

<http://naturalresources.wales/splash?orig=/>

By bidding for this requirement, you may also be approached by other members of the Defra network, NRW or other government departments that are specifically named in the tender document.

### **Further information**

For further information and to see our commitments to Diversity and Equality, please visit our website.

<https://www.gov.uk/government/organisations/environment-agency/about/procurement>  
<https://www.gov.uk/government/organisations/environment-agency/about/equality-and-diversity>

Also, are you up to date on environmental legislation? See links below for further information.

Waste and Environmental Impact - <https://www.gov.uk/browse/business/waste-environment>  
Environmental Regulations - <https://www.gov.uk/browse/business/waste-environment/environmental-regulations>

## **Section 2**

### **The Customer**

#### **Summary**

The Environment Agency regulates and advises on various aspects of the agriculture sector including large-scale intensive pig and poultry units through the Environmental Permitting Regulations. Environmental permits are required for farms with more than 40,000 poultry places, more than 2,000 production pig places or more than 750 sow places. This regulatory regime ensures that emissions from these activities do not have an unacceptable impact on nearby protected habitat sites, nor contribute excessively to the national inventory of emissions.

Permitted farms are required to meet the Best Available Techniques (BAT) Conclusions for the Intensive Rearing of Poultry or Pigs (IRPP) sector. The latest version of this document was published in 2017 (available [here](#)) and sets out new requirements to monitor and report emissions from permitted farms for comparison with the BAT-associated levels. This included a requirement for all operators to report emissions of nitrogen (N) and phosphorus (P) excreted in livestock manures on an annual basis. This project links to this BAT requirement to report N and P emissions and the need for additional support for operators to enable accurate calculations of livestock N and P emissions in livestock manures.

#### **Contract Length**

It is anticipated that this contract will be awarded to one supplier for a period of 3 months to end no later than 31/01/23. Prices will remain fixed for the duration of the contract award period. We may at our sole discretion extend this contract to include related or further work. Any extension shall be agreed in advance of any work commencing and may be subject to further competition. Any amendment to contract prices for the extensions are to be by negotiation.

The Environment Agency Conditions of Contract for Research (Appendix C) shall apply to this contract.

This contract shall be managed on behalf of the Agency by Alice Waterson (07879 444253)

#### **Contact Details and Timeline**

Alice Waterson will be your contact for any questions linked to the content of the quote pack or the process. Please submit any questions by email and note that both the question and the response will be circulated to all tenderers.

Alice.Waterson@environment-agency.gov.uk

Key elements of the process have been reviewed. Anticipated dates for planned activities are below:

Activity	Due Date
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Supplier responses for Request for Quote	30.09.22
Evaluation of Request for Quote submissions	Early October 2022
Award of contract	Early October 2022
Project/Contract end date	31/01/2023

It should be noted that these timescales and activities may be subject to change.

### **Section 3**

#### **Evaluation Criteria**

We will award this contract in line with the most economically advantageous tender (MEAT) as set out in the following award criteria:

- Price – 60%
- Quality – 40%

The following quality criteria are weighted in accordance with the importance and relevance attached to each one.

<b>Skill, experience and adequacy of resources of technical staff</b> (e.g CVs, skills & expertise, structure & capacity)	<b>20</b>
<b>Skill, experience and adequacy of resources for Project Management</b>	<b>20</b>
<b>Ability to deliver a successful project to time and budget</b> (Logical progression of proposed work, inc project plan and risk register where requested)	<b>20</b>
<b>Methodology</b> (Detailed, methodology. Valid, sound and appropriate approach. Innovations in proposed work (where requested)).	<b>20</b>
<b>Understanding of project scope &amp; requirements</b>	<b>10</b>
<b>Experience of similar projects</b>	<b>5</b>
<b>Quality Assurance</b>	<b>5</b>

The criteria listed above will be assessed on a 0 to 10 basis and will reflect the following judgements:

<b>Rating of Response</b> <b>The tenderer provides a response which in the opinion of the evaluators is:</b>	<b>Score</b>
<b>Excellent:</b> Addresses all of the requirements and provides a response with relevant supporting information which does not contain any weaknesses, giving the Agency complete confidence that the requirements will be met.	10
<b>Very Good:</b> Addresses all of the requirements and provides a response with relevant supporting information, which contains very minor weaknesses, giving the Agency high confidence that the requirements will be met.	8
<b>Good:</b> Addresses all of the requirements and provides a response with relevant supporting information, which contains minor weaknesses, giving the Agency reasonable confidence that the requirements will be met.	6
<b>Satisfactory:</b> Substantially addresses the requirements and provides a response with relevant supporting information which may contain moderate weaknesses, but gives the Agency some confidence that the requirements will be met.	4
<b>Weak:</b> Partially addresses the requirements, or provides supporting information that is of limited relevance or contains significant weaknesses, and therefore gives the Agency low confidence that the requirements will be met.	2

Nil: No response or provides a response that gives the Agency no confidence that the requirements will be met.

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## **Section 4**

### **Information to be returned**

**Please note, the following information requested must be provided. Incomplete tender submissions may be discounted.**

Please complete and return the following information:

- completed Pricing Schedule (Appendix A);
- completed Prior Rights Schedule (Appendix B);
- confirmation that terms and conditions are accepted (Appendix C. Please note that the terms cannot be amended later).
- details of the personnel you are proposing to carry out the service, including CV's of your key personnel;
- details of how you propose to maintain continuity of personnel;
- details of proposed methodology
- details of how you measure your success in each of the deliverables.
- detail your recent experience of carrying out similar contracts

## **Section 5**

### **Specification**

#### **1. Background to the Requirement**

The implementation of the 2017 Best Available Techniques (BAT) conclusions for the IRPP sector required operators to monitor total nitrogen (N) and total phosphate (P) excreted in livestock manures and report these emissions on an annual basis. The BAT associated excretion level is expressed as Kg N or P<sub>2</sub>O<sub>5</sub> excreted/animal place/year. The BAT conclusions provide two available techniques for measuring N and P emissions in livestock manures; one being manure analysis and the other being calculation by using a mass balance of nitrogen and phosphorus based on feed intake, crude protein and total phosphorus content of the diet, and animal performance.

We are seeking specialist technical knowledge to understand the most appropriate calculation method based on the mass balance technique highlighted in the BAT conclusions and develop a simple tool.

#### **2. Specific Objectives/Deliverables**

The purpose of this project is to develop a simple calculator tool to assist operators with the calculation of N and P excretion to enable them to accurately report these emissions to the Environment Agency for compliance checks against the BAT-associated total N/P excretion levels. N and P emission reporting is required of permit holders with the following livestock categories:

**Table 1**

<b>Livestock type</b>	<b>N emissions reporting required?</b>	<b>P emissions reporting required?</b>
Broilers	Yes	Yes

Layers	Yes	Yes
Pullets	No	No
Breeders	No	No
Turkeys	Yes	Yes
Ducks	Yes	No
Quails	No	No
Pigs (all mating, gestating and farrowing sows, weaners (8-30kg) and production pigs (>30kg – slaughter)	Yes	Yes

We require a tool or calculation method to cover all of these livestock types.

Table 4.9.1 in the [BAT conclusions](#) sets out the following minimum requirements for the mass balance calculation technique:

The mass balance is calculated for each animal category reared on the farm, coinciding with the end of a rearing cycle, on the basis of the following equations:

$$N_{\text{excreted}} = N_{\text{diet}} - N_{\text{retention}}$$

$$P_{\text{excreted}} = P_{\text{diet}} - P_{\text{retention}}$$

$N_{\text{diet}}$  is based on the amount of feed ingested and on the crude protein content of the diet.  $P_{\text{diet}}$  is based on the amount of feed ingested and on the total phosphorus content of the diet. The crude protein and the total phosphorus contents can be obtained by one of the following methods:

- in the case of external feed supply: in the accompanying documentation;
- in the case of self-processing of feed: by sampling of feedstuff compounds from the silos or the feeding system for analysing the total content of phosphorus and crude protein or, alternatively, in the accompanying documentation or using standard values of total content of phosphorus and crude protein of the feedstuff compounds.

$N_{\text{retention}}$  and  $P_{\text{retention}}$  can be estimated by one of the following methods:

- statistically derived equations or models;
- standard retention factors for the nitrogen and phosphorus contents of the animal (or of eggs, in the case of laying hens);
- analysis for nitrogen and phosphorus contents of a representative sample of the animal (or of eggs, in the case of laying hens).

The mass balance considers especially any significant changes to the diet commonly applied (e.g. change of a compound feed).

By the end of this project, we will have:

1. A simple calculator tool or clear equation based (as a minimum) on the above parameters for both pig and poultry. The calculator tool could take the form of an Excel spreadsheet or another other shareable and widely accessible format. The tool will need to be suitable for permit holders or their advisors to use to calculate N and P emissions to inform their annual reporting to the Environment Agency.
2. A supporting report to explain the workings of the calculator, the rationale behind it and step by step guidance for external users.
3. A presentation and Q&A session with industry representatives outlining the recommended approach and tool. This is expected to be via MS Teams.

### **3. Scope and Constraints**

Earlier work by industry representatives indicates that we may require two tools one for poultry and one for pigs.

Relevant parameters to consider for poultry could include but may not be limited to:

- Crop cycle length age of depletion
- Down time where the sheds are empty
- Flock management – proportion thinned
- Feed conversion efficiency
- % Body weight target
- Mortality
- Feed plan – e.g., start and end days on each ration type
- Diet Crude protein and phosphorus across different rations e.g., starter crumb, starter pellet, grower pellet, finisher pellet and withdrawal pellet
- Anticipated, typical for breed or monitored feed intake

Relevant parameters to consider for pigs could include but may not be limited to:

- Numbers of pig in each category
  - Pig weight and days at each stage
  - Feed conversion efficiency
  - Feed plan – e.g., start and end days on each ration type
  - Diet Crude protein and phosphorus across different rations: e.g., Gilt rearing, Dry Sow, Lactating Sow, Gilt Lactating, Creep 1,2,3, Grower 1,2, Finisher 1,2,3
  - Anticipated, typical for breed or monitored feed intake per pig
- 
- This project is limited to pig and poultry rearing falling under the scope of the Environmental Permitting Regulations (i.e., to include the categories in table 1 and covering housed and free range poultry and all categories of indoor reared pigs).
  - We anticipate (given budget constraints) the cost of developing and hosting an online tool to be beyond the scope of this project.

### **4. Timescales/Deadlines**

Work to address the various objectives may be carried out concurrently. A draft report and draft version of the calculator tool will be submitted two weeks before the end date of the project.

### **5. Skills of Personnel Required**

- Substantial knowledge of the agriculture industry sector in the UK and mainland Europe including animal nutrition and growth
- Input from expert poultry and pig nutritionists.
- Experience of determining agricultural emissions with a rigour such that they can be used for regulatory and policy determination purposes.
- Good written and verbal communication skills
- Ability to deliver projects to time and budget

## **Section 6**

### **Contract Management**

This contract shall be managed on behalf of the Agency by This contract shall be managed on behalf of the Agency by Alice Waterson  
[Alice.Waterson@environment-agency.gov.uk](mailto:Alice.Waterson@environment-agency.gov.uk)

We will raise purchase orders to cover the cost of the services and will issue to the awarded supplier following contract award. We would like to be invoiced after the work has been completed

Before the invoice is issued, a fee note must be emailed in advance to the contract manager for approval. All invoices must quote the purchase order number in order to be processed. A file copy invoice must be provided to the contract manager, on request. The timescale for payment of invoices will be up to 30 days after we have received a valid invoice.

## **Section 7**

### **Sustainability Considerations**

We are committed to continually improving our sustainability performance. The Environment Agency has set itself tough objectives as a clear commitment and contribution to sustainable development throughout England. The Agency recognises that this can only be achieved through commitment from all sectors of society and it is intent on raising awareness amongst industry and commerce.

Contractors must adopt a sound proactive environmental approach, designed to minimise harm to the environment.

Environmental criteria should be considered as part of your tender submission with credit given for innovation. Factors to be considered could include areas such as:

- Paper use: All documents and reports prepared by consultants and contractors are produced wherever possible on recycled paper containing at least 100% post consumer waste and printed double sided.
- Travel: use of public transport, reduce face to face meetings by using email and videoconferencing. Meetings to be held in locations to minimise travel and close to public transport links.
- Packaging: should be kept to a minimum. Re-use and disposal issues must be considered.
- Efficient Energy and Water Use.
- Disposal of Waste: Whilst on site the contractor is responsible for the disposal of their own waste and can only use client facilities with express permission from the on site facilities officer.
- Whilst on site, contractors should comply with the local environmental policy statement which will be made available to you in advance or on arrival.

### **Diversity and Equal Opportunities**

We are committed to promoting equality and diversity in all we do and valuing the diversity of our workforce, customers and communities. As a public body, we publish regular information about what our equality objectives are and how we're meeting them.

<https://www.gov.uk/government/organisations/environment-agency/about/equality-and-diversity>

### **Health and Safety**

Contractors will be responsible for making sure all required health and safety aspects including risk assessments are undertaken and required management measures are in place to protect worker exposure. This includes management of all partners, consortium members and subcontractors.



## **IEM2020:**

### **1.1 Sustainability Objectives**

As the Environment Agency, our overarching aim is to protect and improve the environment for people and wildlife. Over the last 10 years we have achieved significant reductions in our environmental impacts that occur through our everyday operations. This included a 40% reduction in our carbon emissions and a 37% reduction in the number of miles we travel. This year we have launched our new Internal Environmental Management strategy to take us through to 2020, building on these successes and widening our ambition.

#### **Supply chain**

Our 2020 approach will have a very strong emphasis on the indirect impacts of our supply chain.

Our supply chain accounts for over 70% of our total environmental impacts.

Working with our supply chain we want to be world class in the area of environmental management. The environmental impacts of our work and that delivered by and through our supply chain must be reduced; environmental risks must be effectively managed and opportunities for enhancements investigated.

As an organisation, our environmental management system (EMS) is accredited to ISO14001 and EMAS standards. Our procurement activities form part of this system; driving environmental performance improvements across the value chain.

## **Section 8**

### **Additional Information**

#### **Copyright and confidentiality**

Unless otherwise indicated, the copyright in all of the documentation belongs to the Environment Agency, and the documentation is to be returned to us with your tender. The contents of the documentation must be held in confidence by you and not disclosed to any third party other than is strictly necessary for the purposes of submitting your quote. You must also ensure that a similar obligation of confidentiality is placed upon any third party to whom you may need to disclose any of the documentation for the purposes of the tender.

#### **Accuracy of documentation**

You should check all documentation; should any part be found to be missing or unclear you should immediately contact us at the address given in the covering letter. No liability will be accepted by the Environment Agency for any omission or errors in the documentation which could have been identified by you.

#### **Amendments to documentation**

Prior to the date for return of tenders, we may clarify, amend or add to the documentation. A copy of each instruction will be issued to every Tenderer and shall form part of the documentation. No amendment shall be made to the documentation unless it is the subject of an instruction. The Tenderer shall promptly acknowledge receipt of such instructions.

#### **Alternative Offers**

Alternative offers may be considered if they constitute a fully priced alternative and are submitted in addition to a quotation complying with the requirements of the Invitation to Quote Documents. If, for any reason you wish to submit an alternative offer without a fully compliant tender please contact us in accordance with the details in the covering letter.

### **Continuity of personnel**

The Contractor shall employ sufficient staff to ensure that the Services are provided at all times and in all respects to the Project Standard. It shall be the duty of the Contractor to ensure that a sufficient reserve of staff is available to ensure project delivery in the event of staff holidays, sickness or voluntary absence

The Environment Agency will be notified immediately of any changes to personnel associated with the project. The Contractor will ensure that every effort is made to replace outgoing staff with personnel of equal calibre and expertise. All new members of staff undertaking work for the Project will need to be agreed by the Environment Agency prior to commencement.

At all times, the Contractor shall only employ in the execution and superintendence of the Contract persons who are suitable and appropriately skilled and experienced.

### **Intellectual property rights**

All results, including material and tools produced, developed or paid for under this contract shall be the property of the Environment Agency.

### **References**

The Environment Agency may request recent and relevant references prior to the award of the project.

### **Contract award**

This Request for Quote is issued in good faith but we reserve the right not to award any or all of this work.

## **DATA PROTECTION ACT ADDENDUM TO SPECIFICATION**

### **Protection of personal data**

In order to comply with the Data Protection Act 1998 the Contractor must agree to the following:

- You must only process the personal data in strict accordance with instructions from the Environment Agency.
- You must ensure that all the personal data that we disclose to you or you collect on our behalf under this agreement are kept confidential.
- You must take reasonable steps to ensure the reliability of employees who have access to personal data.
- Only employees who may be required to assist in meeting the obligations under this agreement may have access to the personal data.
- Any disclosure of personal data must be made in confidence and extend only so far as that which is specifically necessary for the purposes of this agreement.
- You must ensure that there are appropriate security measures in place to safeguard against any unauthorised access or unlawful processing or accidental loss, destruction or damage or disclosure of the personal data.
- On termination of this agreement, for whatever reason, the personal data must be returned to us promptly and safely, together with all copies in your possession or control.

## APPENDIX A - PRICING SCHEDULE

ALL COSTS QUOTED MUST BE EXCLUSIVE OF VAT

All costs must be quoted on this schedule. Any costs not detailed will not be paid.

### Staff Costs

Please detail the day rates of your proposed personnel in the table below.

(Please also advise how many hours you constitute a working day)

Please detail your task costs in the table below

Cost Proposal (To be completed by Supplier)			
Tasks	Hourly Rate	No of Hours	Cost
Total Staff Costs			
Expenses (please detail type, i.e. travel etc)			
Discounts applied (please detail)			
Total Overall Cost			

### Other costs

Please state any other costs that will need to be taken into consideration.

<u>DESCRIPTION</u>	COST £
1. Other costs (please detail)	
2. Other costs (please detail)	
3. Other costs (please detail)	
<u>TOTAL</u>	

### Discounts, rebates and reductions

Please detail below any discounts, rebates and other reductions you are prepared to offer and the basis of those incentives

<u>DESCRIPTION</u>	AMOUNT £
<u>TOTAL</u>	

### Total Overall Cost

Please detail the total fixed cost for the project

<u>ITEM</u>	<b>TOTAL AMOUNT</b> £
<u>Staff Costs</u>	
<u>Other Costs</u>	
<u>Discounts/reductions</u>	
<b><u>TOTAL Overall Cost</u></b>	

The following limits will be applicable to all claims for travel and subsistence under this contract:

- a. Travel by rail: standard class should be used at all times
- b. Travel by car: 45 pence/mile

Hotel bookings should be made through the Environment Agency's corporate travel contract. Details of this contract are available from the Corporate Contracting Team.

When making reservations you should state that you are a contractor working on Environment Agency business.

Hotel charges must not exceed a maximum limit per night bed and breakfast (VAT included) of: £140 in London; £100 in Bristol; £90 in Warrington; £85 in Reading; £75 in Aberdeen, Birmingham, Belfast, Cardiff, Coventry, Edinburgh, Glasgow, Harlow, Leeds, Manchester, Middlesbrough, Newcastle, Oxford, Portsmouth, Sheffield and York; and £70 in all other destinations. Please note that these hotel ceiling rates are subject to change throughout the life of the contract.

Expenditure on dinner during an overnight stay must not exceed a maximum limit of £25, including a drink.

Receipts for all rail travel, hotel and food expenses will be required as proof of expenditure and will be reimbursed at cost. No profit or additional cost shall be applied by the contractor to such personal expenses.

### APPENDIX B - PRIOR RIGHTS SCHEDULE

Details of Prior Rights held by the Parties (To be updated as Rights are introduced during the period of the Contract)

Prior Rights owned or lawfully used by a Party, whether under licence or otherwise, which it introduces to the Project for the purposes of fulfilling its obligations under the Contract

Held by the Environment Agency

<b>Name and description of Prior Rights</b>	<b>Extent of proposed use in the Project</b>	<b>Proprietary owner of the Prior Rights</b>

Held by the Contractor

Name and description of Prior Rights	Extent of proposed use in the Project	Proprietary owner of the Prior Rights

**Explanation of Contractor's Prior Rights**

All Intellectual Property Rights owned by or lawfully used by the Contractor, whether under licence or otherwise before the date of this Contract. It can also mean any invention and know how or other intellectual property (whether or not patentable) owned by one of the parties prior to the commencement of the Project, or devised or discovered by one of them only in the course of other projects during the Project period and not arising directly from the Project.

**APPENDIX C – ACCEPTANCE OF TERMS AND CONDITIONS**

I/We accept in full the terms and conditions named in Section 2 and appended to this Request for Quote document.

Company \_\_\_\_\_  
Name

Signature \_\_\_\_\_

Print Name \_\_\_\_\_

Position \_\_\_\_\_

Date \_\_\_\_\_