



**An Roinn Tithíochta,  
Rialtais Áitiúil agus Oidhreachta**  
Department of Housing,  
Local Government and Heritage



## **Candidate Information Booklet**

**Open competition for the appointment to the position of:**

Postdoctoral Researcher –  
Improving Met Éireann's dispersion modelling for animal, human and plant  
health and safety. (Fixed term Contract)

Department of Housing, Local Government and Heritage  
Met Éireann

**Closing Date: Friday, 22<sup>nd</sup> November 2024**

**Please read carefully**

<b>Title of Position</b>	Postdoctoral Researcher (Dispersion Modelling)
<b>Department</b>	Housing, Local Government and Heritage
<b>Division</b>	Met Éireann
<b>Location</b>	Met Éireann HQ, Glasnevin Hill, Dublin 9
<b>Tenure</b>	Fixed term contract – 4 years

## Introduction

Atmospheric dispersion modeling is the mathematical simulation of how particles (including pollutants) disperse in the atmosphere. It is performed with computer programs which use algorithms to solve the mathematical equations that govern particle dispersion. Dispersion models estimate the downwind ambient concentration of air pollutants emitted from 1) man-made sources including industrial plants, vehicular traffic or accidental chemical/nuclear releases, and 2) natural sources such as small insects, pollen, dust or volcanic ash. Dispersion models can also be used to predict future concentrations of particles under specific scenarios (e.g. pollen forecasting based on weather data, the spread of Bluetongue virus, and the spread of Foot & Mouth disease).

Currently, Met Éireann provides data to the EPA to simulate nuclear dispersion modelling, and also produces a daily automated theoretical nuclear incident release as a contingency to the EPA's official modelling. We also perform operational Bluetongue Virus forecasting which are sent to relevant agricultural stakeholders, and we support UCD in their modelling of Foot & Mouth disease.

As climate change continues, a range of pests previously unknown in Ireland are likely to find favorable conditions here, which can potentially harm native species of plants & animals. Investigation of potential sources of these pests and their potential for travel over large distances on prevailing winds could help avoid biodiversity and financial losses.

### 1. Job Description:

The postdoctoral researcher will improve Met Éireann's dispersion modelling capabilities and facilitate the development of new state-of-the-art dispersion modelling applications using the best methods and software available. A dispersion modelling workshop with similar researchers in Ireland & abroad will be organised by the researcher to identify user needs & best practices.

Met Éireann's current dispersion modelling is facilitated on a case-by-case basis for certain applications, the postdoctoral researcher will streamline the process of dispersion modelling by forming data-streams and workflows which can be applied in multiple meteorological scenarios. This streamlining will enable Met Éireann to enhance its expertise and capacity in dispersion modelling of radioactive tracers released into the atmosphere in nuclear accidents (to support the EPA, who are the authoritative body in this regard), and build capacity for predicting the risk of airborne diseases relating to animal, plant and human health.

The project will use dispersion models and meteorological data to build forecast capacity for a range of airborne particles which can affect animal, plant and human health, including bioaerosols (vector-borne diseases, pollen, and fungal spores), forest fire smoke, volcanic plumes and Saharan dust. High-resolution data are important to use here to identify the exact locations that are likely to be affected by a plume under different weather conditions. Met Éireann seeks to be an authoritative source for dispersion forecasts in Ireland which could be of significant utility to the agriculture industry and the hundreds of thousands of Irish people who suffer from asthma, hay-fever and other respiratory illnesses.

Outcomes from this proposal will assist the government in forecasting the impact of incidents highlighted in Ireland's Strategic Emergency Management Plan (SEM), including infectious diseases for animals, contamination of animal feedstuffs, nuclear accidents/incidents/events abroad, radioactive contamination, environmental pollution, fire, and volcanic eruptions impacting Ireland.

The researcher will take advantage of Met Éireann's high-resolution meteorological data and ensemble prediction system (IREPS) & ECMWF's Ensemble Prediction System (EPS) to produce probabilistic dispersion forecasts for the applications outlined in this job description.

## **2. Principal Tasks:**

- Review of current state-of-the-art dispersion modelling (literature review & workshop with users)
- Upgrading HYSPLIT to the latest version across platforms for all applications (different versions perform different tasks, these should all be updated and future-proofed)
- Improve forecasting of the direction of a plume of hazardous material, be it nuclear fallout or sulphur from volcanic ash
- Streamline and extend current data streams to include HARMONIE (IREPS) & ECMWF ensemble data
- Improve current forecast of Bluetongue Virus to accurately reflect the biological relationship between weather patterns and vector dispersion.
- Improve Foot and Mouth Disease forecasting using hindcasts and case studies of small-areas with high-resolution NWP and land-use data.
- Develop Pollen forecast to build on the AUTOPOLLEN project
- Develop on-demand capability for all types of dispersion modelling

**Working Environment:**

The Postdoctoral Researcher will be required to work in Met Éireann Headquarters located at Glasnevin Hill, Dublin 9. Where possible, the successful candidates may be authorised to work remotely in line with approved policies for blended working.

**Educational, professional or technical qualifications, knowledge, skills, aptitudes, experience, training:****a) ESSENTIAL for the job**

1. A Ph.D. in one or more of the following: atmospheric sciences, physics, mathematics, or a related discipline.
2. Knowledge of atmospheric or climate dynamics.
3. Project management experience.
4. Strong programming and quantitative skills.
5. Effective oral and written communication skills.
6. Strong organisational & teamwork skills.

**a) DESIRABLE (but not essential) for the job**

1. Experience with developing or running a dispersion model (e.g. HYSPLIT).
2. Experience with Linux computing environment & bash scripting.
3. A proven track record of publication in peer-reviewed journals.
4. Experience with grib data manipulation.

\* Applicants who are close to completion of a Ph.D. will also be considered

## **ELIGIBILITY TO APPLY AND CERTAIN RESTRICTIONS ON ELIGIBILITY**

### **Citizenship Requirements**

Eligible candidates must be:

1. A citizen of the European Economic Area (EEA). The EEA consists of the Member States of the European Union, Iceland, Liechtenstein and Norway; or
2. A citizen of the United Kingdom (UK); or
3. A citizen of Switzerland pursuant to the agreement between the EU and Switzerland on the free movement of persons; or
4. A non-EEA citizen who has a stamp 4 permission<sup>1</sup> or a Stamp 5 permission

<sup>1</sup> Please note that a 50 TEU permission, which is a replacement for Stamp 4EUFAM after Brexit, is acceptable as a Stamp 4 equivalent.

**To qualify candidates must meet one of the citizenship criteria above by the date of any job offer.**

Non-EEA applicants are welcome under the “Fast Track Work Permit for Non-EU R&D (Hosting Agreement) Scheme”. See for [here](#) more information. Should this scheme and its conditions apply, a Hosting Agreement can be put in place between the applicant and the employer. Non-EEA applicants are responsible for ensuring they can secure a visa to travel to Ireland, if applicable

### **Incentivised Scheme for Early Retirement (ISER)**

It is a condition of the Incentivised Scheme for Early Retirement (ISER) as set out in Department of Finance Circular 12/09 that retirees, under that Scheme, are debarred from applying for another position in the same employment or the same sector. Therefore, such retirees may not apply for this position.

### **Department of Health and Children Circular (7/2010)**

The Department of Health Circular 7/2010 dated 1 November 2010 introduced a Targeted Voluntary Early Retirement (VER) Scheme and Voluntary Redundancy Schemes (VRS). It is a condition of the VER scheme that persons availing of the scheme will not be eligible for re-employment in the public health sector or in the wider public service or in a body wholly or mainly funded from public moneys. The same prohibition on re-employment applies under the VRS, except that the prohibition is for a period of 7 years, after which time any re-employment will require the approval of the Minister for Public Expenditure and Reform. People who availed of either of these schemes are not eligible to compete in this competition.

### **Collective Agreement: Redundancy Payments to Public Servants**

The Department of Public Expenditure and Reform letter dated 28<sup>th</sup> June 2012 to Personnel Officers introduced, with effect from 1<sup>st</sup> June 2012, a Collective Agreement which had been reached between the Department of Public Expenditure and Reform and the Public Services Committee of the ICTU in relation to ex-gratia Redundancy Payments to Public Servants. It is a condition of the Collective Agreement that persons availing of the agreement will not be eligible for re-employment in the public service by any public service body (as defined by the Financial Emergency Measures in the Public Interest Acts 2009 – 2011) for a period of 2 years from termination of the employment. Thereafter the consent of the Minister for Public Expenditure and Reform will be required prior to re-employment.

People who availed of this scheme and who may be successful in this competition will have to prove their eligibility (expiry of period of non-eligibility) and the Minister's consent will have to be secured prior to employment by any public service body.

### **Declaration**

Applicants will be required to declare whether they have previously availed of a public service scheme of incentivised early retirement and/or the collective agreement outlined above. Applicants will also be required to declare any entitlements to a Public Service pension benefit (in payment or preserved) from any other Public Service employment and/or where they have received a payment-in-lieu in respect of service in any Public Service employment.

## **Principal Conditions of Service**

### **General:**

The appointment is subject to the Civil Service Regulations Acts 1956 to 2005 and the Public Service Management (Recruitment and Appointments) Act 2004 and any other Act for the time being in force relating to the Civil Service.

**Pay:** On appointment €53,239. per annum, year 2 €56,681 year per annum, year 3 €60,169 year per annum, year 4 €63,655 per annum

### **Important Note**

Payment will be made fortnightly in arrears by Electronic Fund Transfer (EFT) into a bank account of an officer's choice. Payment cannot be made until a BIC code and IBAN number and bank sort code has been supplied to the Personnel Section of the relevant Department or Office. Statutory deductions from salary will be made as appropriate by the Department/Office.

An officer will agree that any overpayment of salary or of travel and subsistence may be deducted from future salary payments due to an officer in accordance with the Payment of Wages Act 1991. In accordance with that Act, the Department/Office will advise the officer in writing of the amount and details of such overpayment and give at least one week's notice of the deduction to take place and will deduct the overpayment, at an amount that is fair and reasonable having regard to all the circumstances, within six months of such notice in accordance with the Act.

### **Tenure and probation:**

The appointment is to a **temporary** unestablished position in the civil service for a period of 4 years.

The appointee will be required to serve a 1-year probationary period from the date of appointment. Following probation completion, the officer's performance will continue to be reviewed and documented through the Performance Management and Development System (PMDS).

During the period of the probationary contract, an officer's performance will be subject to review by the appropriate supervisor(s) to determine whether the officer:

- I. has performed in a satisfactory manner
- II. has been satisfactory in general conduct, and
- III. is suitable from the viewpoint of health with particular regard to sick leave.

Prior to completion of the probationary contract a decision will be made as to whether or not the officer will be retained pursuant to *Section 5A(2) Civil Service Regulation Acts 1956-2005*. This decision will be based on the officer's performance assessed against the criteria set out in (i) to (iii) above. The detail of the probationary process will be explained to the officer by the Department/Office. A copy of Department of Finance guidelines on probation will also be made available to the officer.

Where an officer is an existing civil servant and is not considered as suitable to the position having been assessed against stated criteria, the officer will be notified in writing of the action to be taken prior to the expiry of the probationary contract and any extensions thereof.

Notwithstanding the preceding paragraphs in this section, the probationary contract may be terminated at any time prior to the expiry of the term of the contract by either side in accordance with the Minimum Notice and Terms of Employment Acts, 1973 to 2005.

In certain circumstances the contract may be extended and the probation period suspended. The extension must be agreed by both parties.

- The probationary period stands suspended where an employee is absent due to Maternity or Adoptive Leave
- In relation to an employee absent on Parental Leave or Carers Leave, the employer may require probation to be suspended if the absence is not considered to be consistent with a continuation of the probation
- Probation may be suspended in cases such as absence due to a non-recurring illness.

The employee may in these circumstances make application to the employer for an extension to the contract period.

**Unfair Dismissals Act 1977 - 2005:**

The Unfair Dismissals Acts 1977-2005 will not apply to the termination of this employment by reason only of the expiry of this probationary contract without it being renewed.

**Duties:**

The officer will be required to perform any duties appropriate to the position which may be assigned from time to time. The position is full time and the officer may not engage in private practice or be connected with any outside business which would interfere with the performance of official duties.

**Headquarters:**

The officer's headquarters will be such as may be designated from time to time by the Director. When absent from home and headquarters on duty appropriate travelling expenses and

subsistence allowances will be paid, subject to the normal civil service regulations and the guidelines of Department of Housing, Local Government and Heritage.

**Hours of attendance:**

Hours of attendance will be as fixed from time to time but will amount, on average, to not less than 41 hours and 15 minutes gross, 35 hours net of lunch breaks. Flexibility may be required with regard to extra attendance from time to time. The rate of remuneration payable for any exceptional extra attendance will be in line with Department of Public Expenditure and Reform circulars.

**Annual Leave**

On recruitment, annual leave will be 25 working days a year. This allowance, which is subject to the usual conditions regarding the granting of annual leave, is on the basis of a five-day week and is exclusive of the usual public holidays

**The Organisation of Working Time Act:**

The terms of the organisation of Working Time Act, 1997 will apply, where appropriate, to this employment.

**Sick Leave:**

Pay during properly certified sick absence, provided there is no evidence of permanent disability for service, will apply on a pro-rata basis, in accordance with the provisions of the sick leave circulars as amended from time to time.

Officers, who will be paying the Class A rate of PRSI, will be required to sign a mandate authorising the Department of Social Protection to pay any benefits due under the Social Welfare Acts direct to the Department of Environment, Community and Local Government. Payment of salary during illness will be subject to the officer making the necessary claims for social insurance benefit to the Department of Social Protection within the required time limits.

**Secrecy, confidentiality and standards of behaviours:**

**Official Secrecy and Integrity**

During the term of the probationary contract, an officer will be subject to the Provisions of the Official Secrets Act, 1963, as amended by the Freedom of Information Acts 1997 and 2003. The officer will agree not to disclose to third parties any confidential information, especially information with commercial potential, either during or subsequent to the period of employment.

**Civil Service Code of Standards and Behaviour**

The officer will be subject to the Civil Service Code of Standards and Behaviour.

**Ethics in Public Office Act 1995**

The Ethics in Public Office Acts 1995 will apply, where appropriate, to this employment.



**Prior approval of publications:**

An officer will agree not to publish material related to his or her official duties without prior approval by the Secretary General of the Department.

**Political activity:**

During the term of employment the officer will be subject to the rules governing civil servants and politics.

**Superannuation and Retirement**

The successful candidate will be offered the appropriate superannuation terms and conditions as prevailing in the Civil Service, at the time of being offered an appointment. In general, and except for candidates who have worked in a pensionable (non-single scheme terms) public service job in the 26 weeks prior to appointment (see paragraph d below), this means being offered appointment based on membership of the Single Public Service Pension Scheme ("Single Scheme"). Key provisions attaching to membership of the Single Scheme are as follows:

**a. Pensionable Age**

The minimum age at which pension is payable is 66 (rising to 67 and 68) in line with State Pension age changes.

**b. Retirement Age:**

Scheme members must retire at the age of 70.

**c. Pension Abatement**

- If the appointee was previously employed in the Civil Service and is in receipt of a pension from the Civil Service normal abatement rules will apply. However, if the appointee was previously employed in the Civil Service and awarded a pension under voluntary early retirement arrangements (other than the Incentivised Scheme of Early Retirement (ISER) or the Department of Health Circular 7/2010 VER/VRS which, as indicated above, renders a person ineligible for the competition) the entitlement to that pension will cease with effect from the date of reappointment. Special arrangements will, however be made for the reckoning of previous service given by the appointee for the purpose of any future superannuation award for which the appointee may be eligible.
- If the appointee was previously employed in the Civil Service or in the Public Service please note that the Public Service Pensions (Single Scheme and Other Provisions) Act 2012 includes a provision which extends abatement of pension for all Civil and Public Servants who are re-employed where a Public Service pension is in payment. This provision to apply abatement across the wider public service came into effect on 1 November 2012. **This may have pension implications for any person appointed to this position who is currently in receipt of a Civil or Public Service pension or has a preserved Civil or Public Service pension which will come into payment during his/her employment in this position.**
- **Department of Education and Skills Early Retirement Scheme for Teachers Circular 102/2007**

The Department of Education and Skills introduced an Early Retirement Scheme for Teachers. It is a condition of the Early Retirement Scheme that with the exception of the situations set out in paragraphs 10.2 and 10.3 of the relevant circular

documentation, and with those exceptions only, if a teacher accepts early retirement under **Strands 1, 2 or 3** of this scheme and is subsequently employed in any capacity in any area of the public sector, payment of pension to that person under the scheme **will immediately cease**. Pension payments will, however, be resumed on the ceasing of such employment or on the person's 60<sup>th</sup> birthday, whichever is the later, but on resumption, the pension will be based on the person's actual reckonable service as a teacher (i.e. the added years previously granted will not be taken into account in the calculation of the pension payment).

- **Ill-Health-Retirement**

Please note that where an individual has retired from a Civil/Public Service body on the grounds of ill-health his/her pension from that employment may be subject to review in accordance with the rules of ill-health retirement within the pension scheme of that employment.

**d. Prior Public Servants**

While the default pension terms, as set out in the preceding paragraphs, consist of Single Scheme membership, this may not apply to certain appointees. Full details of the conditions governing whether or not a public servant is a Single Scheme member are given in the Public Service Pensions (Single Scheme and other Provisions) Act 2012. However, the key exception case (in the context of this competition and generally) is that **a successful candidate who has worked in a pensionable (non-single scheme terms) capacity in the public service within 26 weeks of taking up appointment, would in general not become a member of the Single Scheme**. In this case such a candidate would instead be offered membership of the pension scheme for non-established civil servants ("Non-Established State Employee Scheme"). This would mean that the abatement provisions at (c) above would apply, and in addition there are implications in respect of pension accrual as outlined below:

**e. Pension Accrual**

A 40-year limit on total service that can be counted towards pension where a person has been a member of more than one existing public service pension scheme would apply. This 40-year limit, which is provided for in the Public Service Pensions (Single Scheme and other Provisions) Act 2012 came into effect on 28 July 2012. **This may have implications for any appointee who has acquired pension rights in a previous public service employment.**

**f. Pension-Related Deduction**

This appointment is subject to the pension-related deduction in accordance with the Financial Emergency Measure in the Public Interest Act 2009.

For further information in relation to the Single Public Service Pension Scheme for Public Servants please see the following website: <http://www.per.gov.ie/pensions>.

**IMPORTANT NOTICE**

**The above represents the principal conditions of service and is not intended to be the comprehensive list of all terms and conditions of employment which will be set out in the employment contract to be agreed with the successful candidate.**

## Competition Process

The Department of Housing, Local Government and Heritage is recruiting for this position under its Recruitment Licence issued by the Commission for Public Service Appointments (CPSA) and in accordance with the CPSA's Code of Practice.

### How to Apply

Applicants should submit a completed application form to [postdoc.recruitment@met.ie](mailto:postdoc.recruitment@met.ie)

The Application Form allows applicants to detail their qualifications, skills and experience and provide a personal statement outlining why they should be considered for the post and how they meet the essential requirements and personal attributes of the post.

**Please note:** Only applications submitted on the official application form will be considered. The application form is available on Met Éireann's website [www.met.ie/about-us/vacancies](http://www.met.ie/about-us/vacancies).

### Closing Date

The closing date for receipt of applications is **Friday, 22<sup>nd</sup> November 2024**.

All applications will be acknowledged. If you do not receive an acknowledgement within 3 days of applying, please email [postdoc.recruitment@met.ie](mailto:postdoc.recruitment@met.ie).

### Essential Requirements and Personal Attributes

Candidates will be required to possess all the essential requirements and personal attributes required for the position. They will be requested to demonstrate this both in the application form and, if shortlisted, by interview.

### Health

Candidates must be in a state of health such as would indicate a reasonable prospect of ability to render regular and efficient service.

### Selection Process

The selection process may include the shortlisting of candidates on the basis of the application form and will include an interview.

### Shortlisting

A shortlisting process will involve an expert panel that will select candidates for interview who, based on an examination of the application form and assessed against the essential requirements and personal attributes required, appear to be the most suitable for the position. This is not to suggest that other candidates are necessarily unsuitable or incapable of undertaking the job,

rather than there are some candidates, who based on their application, appear to be better qualified and/or have more relevant experience.

### **Interview**

Candidates who are shortlisted will be called for interview by an expert panel. The interview will focus on how the candidate meets the essential requirements and personal attributes of the post and their career and experience to date.

**Note:** Candidates will be notified of interview dates and arrangements at the earliest opportunity. The onus will be on candidates to make themselves available for interview as advised.

### **Deeming of candidature to be withdrawn**

Candidates who do not attend for interview as required or who do not, when requested, furnish such evidence, as the Department requires in regard to any matter relevant to their candidature, will have no further claim to consideration.

### **Candidate Feedback**

Feedback will be provided on written request.

### **Review Procedures in relation to the Selection Process**

Requests for a review are dealt with in accordance with the codes of practice published by the Commission for Public Service Appointments. The Codes can be accessed at [www.cpsa-online.ie](http://www.cpsa-online.ie).

### **Confidentiality**

Please note that all personal data shall be treated as confidential in accordance with the Data Protection Acts, 1988 and 2003.

**Candidates should note canvassing will disqualify.**