



Atmospheric Dispersion Modelling  
Liaison Committee (ADMLC)

**Guidelines for the Preparation of Short Range  
Dispersion Modelling Assessments for  
Compliance with Regulatory Requirements:  
An Update to the ADMLC 2004 Guidance**

Simon Gant (HSE, Chair of ADMLC)

Dispersion Modelling User Group (DMUG) meeting,  
24 February 2021



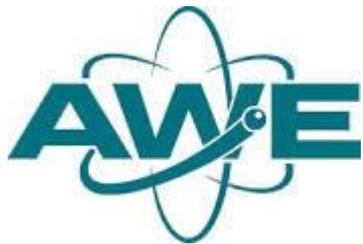
# Background to ADMLC

- **1977:** Experts from UK government departments, utilities and research organisations met to discuss atmospheric dispersion modelling of radioactive releases
  - Informal steering committee reviewed recent developments
- **1995:** ADMLC formed with initial focus on the nuclear industry
- **Since 1995:**
  - Scope widened to include range of interests of ADMLC members, including UK and Irish industrial and regulatory organisations
  - **Aim:** to review atmospheric dispersion and related phenomena for application primarily to authorization or licensing of discharges to atmosphere resulting from industrial, commercial or institutional sites
  - Main interests on fixed sources, rather than transport sources, including both routine releases and releases in accident or “upset” conditions



# Background to ADMLC

Current membership:



Met Office



Environmental Protection Agency

defra



Food Standards Agency  
food.gov.uk



Environment Agency



Public Health England



Office for Nuclear Regulation



Cyfoeth Naturiol Cymru  
Natural Resources Wales



# Background to ADMLC

- ADMLC committee meets three times per year
- Each member organization contributes £3k each year
- ADMLC public workshop/seminar every 2 to 3 years
- Small research projects commissioned:
  - Modelling pollutant dispersion from non-point sources (2016)
  - Presenting uncertain information in radiological emergencies (2016)
  - Sensitivity of dispersion modelling results to source terms (2017)
  - Use of Gaussian modelling techniques for near-field dispersion (2021)
  - Dispersion modelling of odour emissions (2021)
- Ongoing projects:
  - Dense-gas dispersion for industrial regulation and emergency response
- Dispersion model validation datasets, e.g. Thorney Island
- Reports and datasets publicly available: <http://www.admlc.com>



# ADMLC Guidelines: Historical context

- **Early 1990's:** criticism in environmental press of variable quality of environmental impact assessments submitted for permit applications under the Integrated Pollution Control regime
- **1994:** Royal Meteorological Society introduced the qualification of “Chartered Meteorologist”
- **1994-1995:** Prof. Richard Griffiths (UMIST) led the development of the first version of the dispersion modelling guidelines with input from regulators, research institutes and consultancies
  - Aim: to promote good practice in atmospheric dispersion modelling
- **Late 1990s:** rapid expansion in use of dispersion modelling and air quality assessments
- **1997:** Air Quality Management Areas (AQMAs) introduced
- **2002:** Formation of the Institute of Air Quality Management (IAQM)



# ADMLC Guidelines: Historical context

- **2000's**: dispersion modelling applied to other types of source (e.g. aviation, intensive agriculture, road traffic), faster computers, more detailed input data on emissions and meteorology, new air-quality standards
- **2003-2004**: Revision of dispersion modelling guidelines
  - Work coordinated by ADMLC in consultation with regulators, research institutes and consultancies

**ADMLC/2004/3**

**Guidelines for the Preparation of Dispersion Modelling Assessments for Compliance with Regulatory Requirements – an Update to the 1995 Royal Meteorological Society Guidance**

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Document status: Version 1.5



# ADMLC Guidelines: Historical context

- **Since 2004:** Science and the profession of air quality modelling and assessment continued to develop rapidly
- **2018-2021:** ADMLC coordinated a group of regulators, research institutes and consultancies to revise the guidelines

## Acknowledgements

The ADMLC wishes to thank the following for their efforts in compiling this guidance:

Dr Simon Scott	Environment Agency
Prof Roger Timmis	Environment Agency
Mr Alan McDonald	Scottish Environment Protection Agency (SEPA)
Dr Ji Ping Shi	Natural Environment Wales (NRW)
Dr Sarah Strickland	CERC
Dr David Carruthers	CERC
Prof Alan Robins	University of Surrey
Dr Shyn Tong	Public Health England
Mr Justin Smith	Public Health England
Mr Pete Bedwell	Public Health England
Mr Philip Mayes	Northern Ireland Environment Agency
Dr Matthew Hort	Met Office
Dr Simon Gant	Health and Safety Executive
Mr Matthew O'Brien	Mott Macdonald



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Available to download from:

<https://admlc.com/model-guidelines>



# ADMLC Guidelines: Aims and scope

- **Aims:** to provide helpful advice on preparing assessments, including:
  - Determining the aims and scope of the assessment
  - Dispersion modelling software selection
  - Data selection
  - Addressing variability, sensitivity and uncertainty
  - Comparison with relevant assessment criteria
  - Communicating results
- Not prescriptive
- Scope focused on controlled (not fugitive) emissions
- Mainly fixed sites
- Compact format: 30 pages
- Advises: if a regulator is to be involved with an assessment, it is both efficient and good practice to secure agreement on the scope, method and objectives in advance



# ADMLC: Future Work

## Possible future ADMLC research projects ([www.admlc.com/work](http://www.admlc.com/work)):

1. Application of models to the design of monitoring networks
2. A review of model evaluation procedures
3. Importance of spatial resolution of NWP data in dispersion modelling for regulatory purposes
4. Dry/wet deposition of gases and particulates
5. Modelling of sources in an emergency
6. Fire source terms and plume rise
7. Understanding the impact of meteorological uncertainties

**HARMO19**

conference paper  
discusses these topics

ADMLC is seeking to partner with other funding agencies or self-funding research organisations on topics of mutual interest

If you are interested in tendering for projects, contact: [admlc@phe.gov.uk](mailto:admlc@phe.gov.uk)



# Thank you

**Note:** the contents of this presentation, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect the policy of the Health and Safety Executive or other member organisations of the ADMLC



# Extra Material

How does the new version compare to the previous edition?

2004

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2021

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