



# Odour Legislation

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# OVERVIEW

- ▶ Collaboration of over 17 authors to gather information about odour regulations around the globe
- ▶ Started in 2016
- ▶ Publish soon

# AUTHORS

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- ▶ Carlos Diaz
- ▶ Jacek Koziel
- ▶ Michael McGinley
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- ▶ Jean-Michel Guillot
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- Maria del Carmen Cabeza
- Dezhao Liu
- Ralf Both
- Hugo Van Belois
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# EUROPE

- ▶ Spain
- ▶ Germany
- ▶ United Kingdom



# EUROPE

- ▶ *European Environment Agency* member countries
- ▶ The *Industrial Emissions Directive* (2010/75/EU) establishes a framework for the control of major industrial activities/processes with a view to preventing and reducing their total or individual contributions to air pollution, water pollution, soil pollution, noise and climate change.
- ▶ IED rules that are part of the *Integrated Environmental Policy*



# SPAIN

- ▶ Odour Regulation-----Autonomous Communities
- ▶ The Draft of Catalonia anti-project on odour regulation

# SPAIN

- Odours regulation → Autonomous Communities
  - The draft of the Catalonia ante-project on odour regulation
  - Some small municipalities took action to regulate odours

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# SPAIN

TYPES OF OPERATIONS	Odour Concentrations at the Receptors (98%)
Waste management/ Animal by-product plants/ Destilation of vegetable and animal products/ Slaughterhouses/ Paper pulp factories	3 ou <sub>E</sub> /m <sup>3</sup>
Farming/ Meat processing/ Smoked of food/ Vegetable by-product processing plants/ Organic products processing/ Waste Water Treatment Plants	5 ou <sub>E</sub> /m <sup>3</sup>
Coffee and Cacao roasting plants/ Bakeries and cookies processing plants/ Fragrances and Aroma production/ Drying of vegetable products/ Other activities	7 ou <sub>E</sub> /m <sup>3</sup>



# GERMANY

- Federal Protection Act for Ambient Air (TA Luft)- regulates how odours are controlled
- National guideline GOAA (2008):
  - ▶ Peak-to-Mean factor  $F=4$
  - ▶ Odour concentration threshold:  $CT = 0.25 \text{ ou/m}^3$
  - ▶ Exceedance probability:  $pT$
  - ▶ They can be compared with empirical data, obtained by field measurements: *VDI 3940 Part 1, 2006*

# UNITED KINGDOM

- ▶ Environmental Permitting H4 Management ( April 2011)
- ▶ Odour Guidance for Local Authorities ( March 2010)

# UK Environment Agency

## Permit Odour Condition - 3.3

- ▶ 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

# UK Environment Agency

## Permit Odour Condition - 3.3

The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

# UK EA

## An Odour Management Plan

- ▶ Is part of the permit and must be complied with
- ▶ It should clearly demonstrate the sites competence and commitment to controlling odour pollution
- ▶ reviewed at least once a year, or sooner if there have been complaints or relevant changes to operations or infrastructure

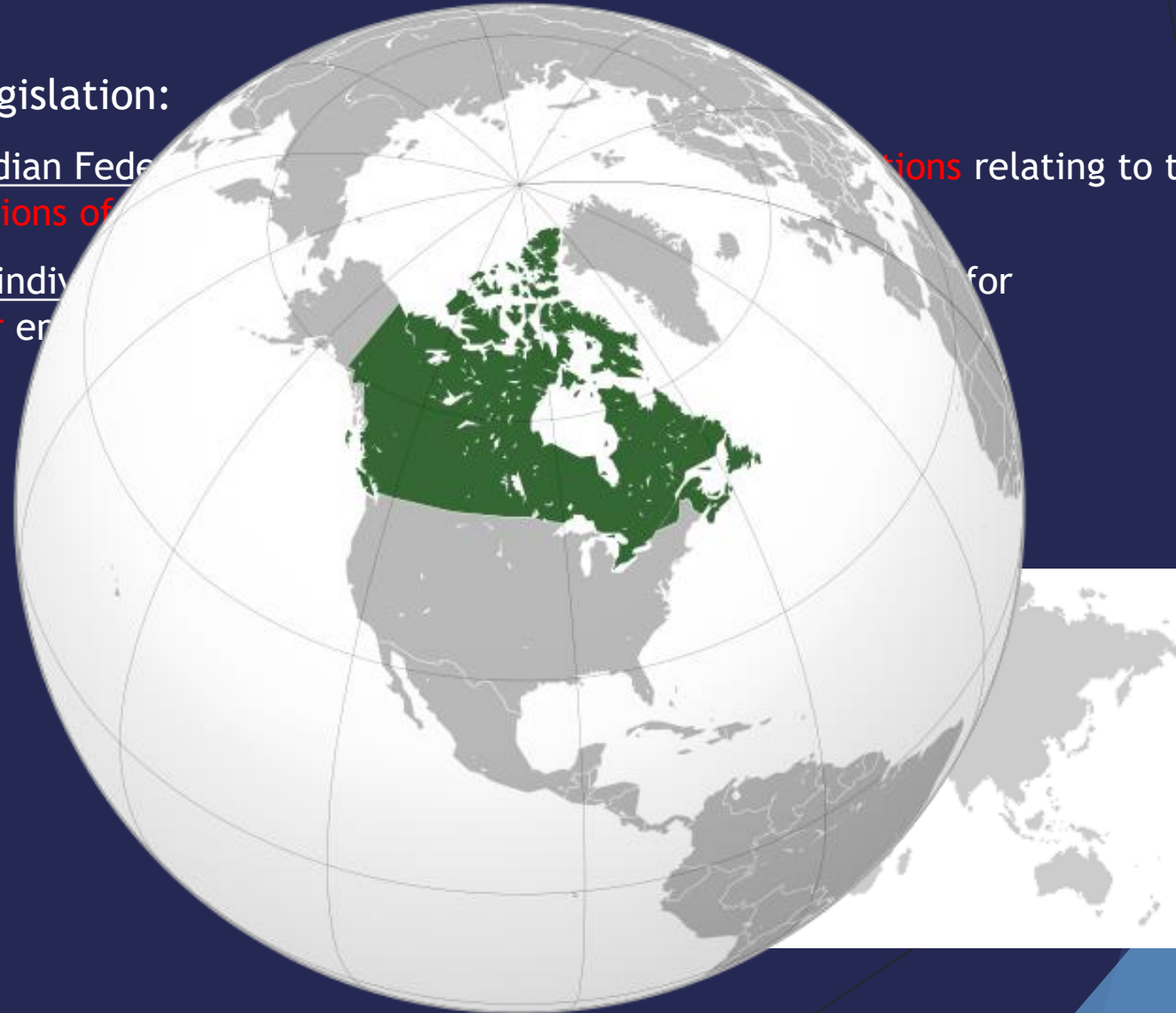
# UK Local Authority Regulation

- ▶ There are three regimes for the control of odours,
- ▶ planning,
- ▶ permitting and
- ▶ statutory nuisance
- ▶ Abatement Notices are issued for enforcement of the Statutory Nuisance regime to a polluting operator
- ▶ Enforcement officers need to be objective, competent and thorough in their investigation
- ▶ Best Practicable Means (BPM) is a defence

# CANADA

▶ Odour legislation:

- ▶ Canadian Federal **emissions of** **odours** relating to the
- ▶ Only industrial **odour** emissions for



# Definitions of Odour in the Legislation

Odour is defined as:

- type of substance, pollutant, contaminant or nuisance (indirect)
- an “odour”, “odorous substance” or “odorous contaminant” (direct)

An odour may be defined by its effect or its character:

- an effect such as “a contaminant that causes an adverse effect”
- a character such as “objectionable odour” or “malodorous odour”
- concentration of a specific odorous chemical



# CANADA

- Odour legislation is present in Canada in all provinces and territories
- Odour may be defined in different ways such as: a pollutant, contaminant, type of substance, or as an odorous substance and odorous contaminant
- An odour may also be defined by its effects, which include as a contaminant that causes an adverse effect

# CANADA

- Odour offenses are based on odour standards and/or demonstrated adverse effects
- Adverse effects include human health and welfare, discomfort, loss of enjoyment of property and interference with business
- Odour standards are available based on specific odorous chemicals

# DEFINITION OF ADVERSE EFFECTS

- ◆ “impairment of the quality of the natural environment for any use that can be made of it,
- ◆ injury or damage to property or to plant or animal life,
- ◆ harm or material discomfort to any person,
- ◆ an adverse effect on the health of any person,
- ◆ impairment of the safety of any person,
- ◆ loss of enjoyment of normal use of property, and
- ◆ interference with the normal conduct of business.

# CANADA

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- *Manito*
- *Ontario*
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# ODOUR COMPLAINTS IN ONTARIO, CANADA

- The complainants may contact the MOECC ( District office) or the facility
- The environmental officer investigates the odour episode, conducts a site visit to the area
- If the odour complaints are persistent for the area- the MOECC can send an order requesting odour assessment and mitigation measures
- Odour assessments- odour testing, modelling, ambient testing with dynamic olfactometry analysis
- Odour testing according to the MOECC Ontario Source Testing Code, Method-ON-6”Determination of Emissions from Stationary Sources”

# SUMMARY AND CONCLUSIONS

- ◆ The odour legislation differs between countries , however it can be categorized in terms of the type of legislation as follows:
- ◆ Countries or states which have no odour legislation but odour may be included as a nuisance
- ◆ Countries or states which regard odour as an air pollutant but provide no regulatory standards
- ◆ Countries or states which have odour legislation but exempt agricultural operations from this legislation

# SUMMARY AND CONCLUSIONS

- ◆ Countries or states which have odour legislation just for agricultural operations
- ◆ Countries or states which have odour legislation for specific agricultural operations (such as swine operations)
- ◆ Countries or states which have regulations for specific odorous chemicals

# SUMMARY AND CONCLUSIONS

- ▶ The definition of odour is implied in legislation which defines a nuisance as something which causes interference with the enjoyment of life or use of property.
- ▶ When odour is defined as a nuisance air contaminant or air pollutant it is usually combined with other types of nuisance contaminants such as gases, vapours, mists, liquids, dust, fumes and smoke.
- ▶ A number of countries or states legislate odour as a distinct air contaminant which is defined as the perception of, stimulation from or physiologic response to the human sense of smell.



# SUMMARY AND CONCLUSIONS

For those countries or states where odour legislation exists, the act or regulation usually states that no person shall discharge an air contaminant, which may or may not specifically include odour, or an odour into the ambient air. These prohibitions often have restrictions attached which are listed below:

- ▶ The odour is objectionable and a state official decides if the odour is objectionable
- ▶ The character of the odour and duration of odour episodes
- ▶ The maximum allowable odour concentration at the emitting source

# SUMMARY AND CONCLUSIONS

- ▶ The maximum allowable odour concentration predicted or measured beyond the property is quantified
- ▶ The number of complainants and frequency of complaints
- ▶ The type of receptor (dwelling, school, hotel etc)

# SUMMARY AND CONCLUSIONS

- For many countries or states the odour acts or regulations do not apply to agricultural operations, either at all, or only if the operation is not complying with normal farm practices or if the operation has existed for a specific period of time such as one year.
- Frequently, the use of best management practices or air pollution equipment is required before agricultural operations are exempted from general odour regulations.

# SUMMARY AND CONCLUSIONS

Odour regulations specifically for agricultural operations may include the following provisions:

- ▶ Setback distances
- ▶ Odour concentration or intensity standards
- ▶ Complaint levels
- ▶ Building design and air pollution controls
- ▶ Operating procedures
- ▶ Standards for specific chemicals (i.e. ammonia and hydrogen sulphide)



# THANKS!

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