



**D-NOSES**

Distributed Network for Odour Sensing,  
Empowerment and Sustainability

# Guidance for Industries

Is your plant blamed for emitting odours affecting surrounding communities? Here is a helpful guide to help you take control of the situation and seek appropriate mitigation.

## 1. Evaluate at what stage of disagreement you are.

There is a disagreement / conflict with your neighbours over the odours that your plant produces, but how far as the disagreement escalated?

Here is a typical stage flow.

- 1) Occasional complaint from one person by phone, e-mail or personally.
- 2) Complaints from several people
- 3) Formal letter of complaint from a community
- 4) Demonstrations in the street
- 5) Contacted by the environmental administration to solve the issue.
- 6) Risk of shutting down the plant.
- 7) Shutting down/moving the plant.

There is a potential for resolving odour conflicts through dialogue with neighbours, but this potential decreases as you progress down this list.

## 2. Find out the reason for these complaints.

Before even considering investing any resources on abating odours, you first need to find out the reasons for this conflict.

The following table delineates a series of misunderstandings that can lead to potential conflicts and the approach needed to resolve them.

Type	Cause	Treatment
Conflict of interests	The conflict is correctly perceived. Example: bad odours from a correctly identified source.	Solution or compromise
Latent conflict	A pre-existing conflict that continues to move. Example: negative historical events caused by the same emitter	Transparency by information and explanation
Conflict assigned incorrectly	There is a conflict between the wrong parties. Example: Residents and company A instead of company B	Transparency by information and explanation

Conflict delimited incorrectly	The parties discuss different things. Example: focus on feared health risks instead of the real odour emissions.	Transparency by information and explanation
Conflict of perceptions	The conflict depends on circumstances that are not recognized. Example: Odour emissions stem from another, unknown source	Transparency by information and explanation
Apparent conflict	The conflict stems from misunderstandings or erroneous perceptions. Example: People are more aware of the same amount of odours on the weekends than during the week.	Transparency by information and explanation

*Table 1: Precision in conflict resolution. Reproduced with permission from the author, VDI Gerüche in der Umwelt. Source: Hammerbacher, citing Fietkau, WZB, 2000.*

There are various reasons why communities might or might not accept the occurrence of odours. Odour acceptance can be divided into different categories:

- 1) Passive acceptance through ignorance, which implies silence as consent and the feeling of a lack of importance
- 2) Passive acceptance through resignation, in which the neighbours think that nothing can be done, which is accompanied by latent emotions and possible conflicts.
- 3) Active acceptance through understanding, which implies that the neighboring population assumes that the odour is acceptable and could occur occasionally.

Odour acceptability is a term constructed by interests, perceptions and expectations of a group of people.

### 3. Work on Transparency and Communication.

As mentioned in table 1, you should consider working on transparency and communication. Traditionally, it was often the case that industrial plants worked in an opaque way, above all when there was an incident with the plant.

Modern industrial plants embrace transparency and are not afraid of reporting incidents to the administrations and to their neighbours. Hiding incidents related to odour released in the atmosphere might produce a short term benefit, but in the long term (and odour pollution is a long term race) it is worse. Therefore hiding things is an old-fashioned approach and is becoming less popular.

You have a plant, many things can fail, just report any incident well before getting any complaints, in the long run, you will see the benefits, starting with an increase in trust from surrounding residents / communities.

Being transparent on any action you take, paves the road to success to solve any odour conflict.

Another action you could consider is improving your communication. There are many ways to work on communication and you can seek help from professionals. Improving communication will increase the number of people that get to know about your actions. Examples of how to facilitate good communication include:

- 1) Provide a telephone number for odour complaints on your website.
- 2) Distribute promotional materials with that phone number.
- 3) Consider working with Facebook/Instagram or even WhatsApp<sup>1</sup> - but only if you have sufficient resources dedicated to this.
- 4) Publish any incident on your website. Even the minor ones if they are suspected to produce an odour impact.

**Another action that you can put in place to improve both transparency and communication:**

You could consider the use of free apps like OdourCollect to give back immediate feedback to the users of this platform. By promoting the use of OdourCollect to affected communities, not only do you give residents the means to report odour episodes and see how they impact the community as a whole, but also do you get valuable real time data which can help both residents and yourselves understand how to best mitigate the issue.

When dealing with communication, there are a set of rules that you should try to follow if you want to be successful in your mission to solve the conflict, but the most important one is that you should always reply with courtesy to any odour complaint, following this suggested flow:

1. You received their odour observation.
2. You sent it to the relevant person that deals with this issue.
3. This complaint will be recorded and will be published on your website / somewhere visible.
4. A person in charge of odour complaints will look back at the processes of the plant to check that everything is alright.
5. A response to that complaint will be published on your website.
6. A response to that complaint will be sent back to the complainer if an e-mail/phone number has been provided.

Things that you should not do are the following:

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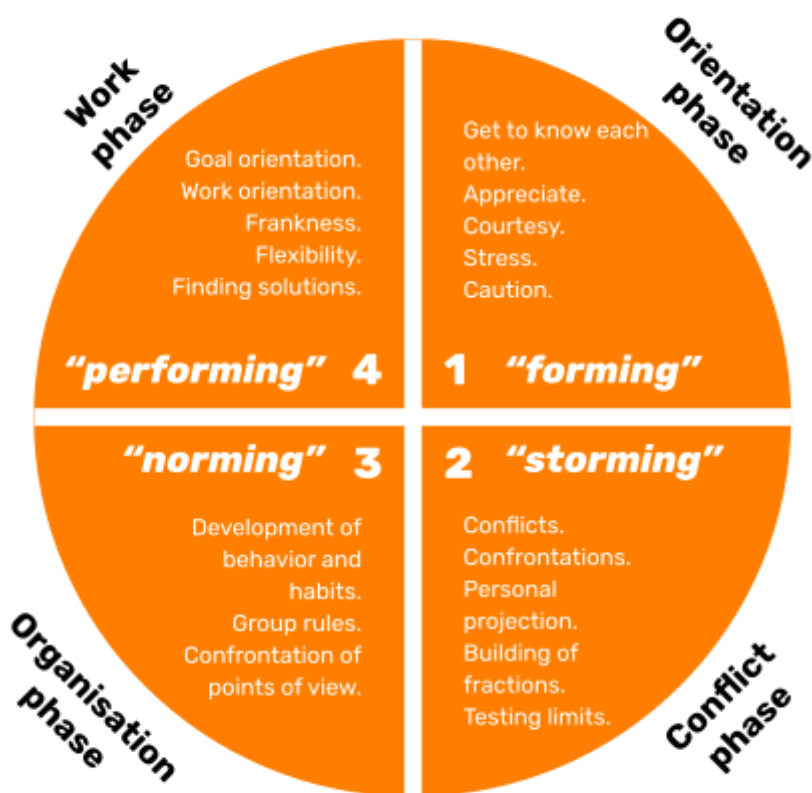
<sup>1</sup> Do not use your personal WhatsApp phone number for this. Get a new phone for managing odour complaints.

- 1) Do not blame other odour emitting plants, even if you know that it is not your fault.
- 2) Do not call into question the perception of a person/group of people, even if you think they are biased.

There are many ways to deal with wrong/biased complaints, the best being to work with tools like OdourCollect to gather data.

#### 4. Get help with mediation.

Like with any conflict situation, there is always room for 'dynamic' conflict space as reflected in the following figure.



Hammerbacher, R.; Hartmann, U. (2011): Das Lösungspotenzial von Nachbarschaftsdialogen bei Geruchskonflikten Am Fallbeispiel eines Industriegebiets mit einer hohen Anzahl von Geruchsquellen. In: VDI Wissensforum GmbH (Hrsg.): Gerüche in der Umwelt. VDI-Berichte 2141, S. 189-196

Conflict management strategies should strive to create an open space where industry and community interest are being listened to, where mutual understanding is built, areas of work are identified and concrete and flexible solutions to the odour issues are outlined.

To begin with, there should be an in-depth study of the situation, asking the following questions: Who is “affected”? In what way are they affected? What is expected from dialogue? In what groups will the opinion modelling be performed?

Communication and dialogue structured between those that are affected by the odours and those that emit them, opens the possibility that the emitter and the affected party will get to know each other better. It allows for direct communication and personal contact between those in charge of the plant and the representatives of the affected population. This changes the interpretation and subjective evaluation of the emitter from the perspective of the local residents and communities.

## 5. Measure

The impacts that you cannot measure, cannot be improved. There are many tools around to measure odours such as dynamic olfactometry (EN 13725) coupled with dispersion modelling or field inspections (EN 16841). These tools are a good fit for measuring odours and they are ideal for planning actions. However, none of these tools will give you information about the potential for annoyance of your plant and the impact it has on surrounding communities, because these techniques only measure the emission of odours within your plant or within a specific geography.

The OdourCollect app is perfect for this if used wisely with a certain methodology. This application will allow you to:

- 1) Know, in real time, when an odour observations was made
- 2) Check the plausibility of this observation
- 3) With the module Prolor (which comes with a licence cost) you will be able to trace back the origin of the odours
- 4) You will be able to observe any patterns in odour observations to identify practices that may need improvement to reduce odour emissions
- 5) You will be able to check your processes to identify which one could be the main target to abate.
- 6) You will get to know how the odour observations are produced along different seasons of the year (summer, winter): eventually, you will be able to identify patterns in the data, and know whether to tailor your industrial activity according to the weather conditions, for example.

## 6. Plan, abate and measure again.

Now is time to allocate resources to abate odours in a planned way. This process is lengthy, it might take years, but if you have the trust of your neighbours, built upon transparency and communication throughout the mitigation process, they are more likely to be lenient and patient.

Of course you should communicate your plan and timing to your neighbours.

Once you have delivered the actions you plan, take odour measurements again by encouraging your neighbours to report via OdourCollect to see if there is a significant improvement in the odour impact produced by your plant.