

CASE-STUDY: Intensive livestock farming / France

FACT SHEET

Version: Final

Date: 09/11/2007

Authors: Peter Stouthuysen, Karl Vrancken

Block 1: Overall description of the GBR

(Legal) status:

At the national level, all IPPC sectors are covered by a Ministerial Order (Arrêté) which lays down the minimum provisions that are applicable. The permitting process itself is regulated by the Decree of 21 September 1977 which has been adapted to the IPPC Directive (last amendment on 07/11/2006). For the conditions set out in the environmental permit this Decree refers to the above mentioned sectoral Decrees.

This case study will discuss the ministerial Order of 7 February 2005 covering the livestock farming of cattle, poultry and feathered game and pigs.

Competent authorities:

Permitting:

The competent authority is the prefect, who is the representative of the state in the department.

Inspection/enforcement:

The inspectors of the classified installations (in charge of permitting, control and compliance) are technical executives assigned by the prefect, competent authority for the implementation of the IPPC Directive. They belong to:

- Generally the regional directorate for the industry, research and the environment (DRIRE).
- the departmental directorate of the veterinarian services for intensive livestock.
- The departmental directorate of health and social affairs for certain landfill sites.

Drafting the GBR:

The Ministry of the Environment and Sustainable Development is responsible for the drafting of the Ministerial Orders which set the minimum provisions that are applicable at the sectoral level. In practice, the conditions of the Ministerial Order are adapted in the integrated permit (Prefectural Order) on the basis of the EIA and the characteristics of the installation.

IPPC Installations covered:

Following IPPC installations are covered by this Ministerial Order

- ILF: > 40,000 places for poultry:
- ILF: > 2,000 places for production pigs (over 30kg):
- ILF: > 750 places for sows'.

There are about 3250 ILF-installations covered by the IPPC Directive in France.

It is important to note that all the ministerial orders which cover IPPC activities covers also non-IPPC installations as lower thresholds compared to the IPPCD are applied and additional activities (cattle) are covered. There is no difference made between the GBRs set.

Short description of the main content of the GBR

This Order is an integrated Order and describes the minimum sectoral permit conditions for:

- Integration in the surrounding area (e.g. minimum distance to third parties)
- Water consumption (descriptive – there are no consumption levels indicated)
- Water emissions (descriptive – only for the protection of groundwater in protected areas a maximum load emission level of 170 kg N/year per hectare is determined)
- Air emissions - Odour (descriptive)
- Waste (descriptive – does not include manure)
- Noise (maximum levels between 22h-06h + reference made to other Orders for technical prescriptions)
- Monitoring of water emissions (if applicable)

Block 2: Description of administrative process for developing the GBR

Historical developments (+ timing)

In France, the integrated permit approach was already covered by the legislation on classified installations (installations classées) from 21 September 1977 whereby classified installations are defined as installations which may cause danger or inconveniences towards comfort of the neighbourhood, health, security, public hygiene, agriculture or the protection of nature and the environment or the conservation of monuments. [repetition]

The GBR approach for the ILF industry has been initiated by the ministry, as a general choice to have GBR for all the classified installations. Before the implementation of the Ministerial Order of 7 February 2005, the ILF-installations were covered by following Ministerial Orders :

- Arrêté du 13 juin 1994 fixant les règles techniques auxquelles doivent satisfaire les élevages de volailles et (ou) de gibiers à plumes soumis à autorisation au titre de la protection de l'environnement. (GBRs for the intensive livestock farming of poultry > 30,000 animal equivalents)
- Arrêté du 29 février 1992 fixant les règles techniques auxquelles doivent satisfaire " les porcheries soumises à autorisation " au titre de la protection de l'environnement. (GBRs for the intensive livestock farming of pigs > 450 animals (>30kg)).

Main drivers for elaboration/choosing a GBR approach:

Following drivers for the use of GBRs in France have been indicated (see Country Profile)

- Simplification of permit applications for industry
- Simplification of and permit determinations and compliance assessment for the regulators
- Greater regulatory transparency
- The creation of 'level playing field'

Block 3: Conditions in the GBR

Description of mechanism used to set the conditions of the GBRs.

According to the French authorities, the setting of GBRs is based on the BREF conclusions, national/regional BAT-assessments and on the transposition of Directives (e.g. LCP, Waste Incineration, Solvents Emissions Directives,...).

The drafting of the sectoral GBR is made by the Ministry and then is submitted to a general consultation of the other ministries, the industry and NGOs. The Departmental Direction of veterinary services (who is in charge for the inspection of ILF installations) has played an important role in the GBR drafting process.

The drafting takes in consideration all the relevant information and documents. In the case of a decree covering an IPPC activity, the BAT are considered. However, the responsibility for determining the BAT based permit conditions is laid down at the local level (the prefect) which is responsible for issuing the individual permits.

Comparison with the related BREFs (BREF Intensive Rearing of Poultry and Pigs)

According to the BREF Intensive Rearing of Poultry and Pigs (BREF ILF), the main environmental impacts of this sector relate to ammonia emissions to air, and nitrogen and phosphorus emissions to soil, to surface water and groundwater, and result from the manure from the animals. Measures to decrease these emissions are not limited to how to store, treat or apply the manure once it arises, but comprise measures throughout a whole chain of events, including steps to minimise the production of manure. This starts with good housekeeping and measures in feeding and housing, followed by the treatment and the storage of manure, and finally the spreading on land. The BREF ILF does not suggest associated emission levels related to the implementation of these measures.

The Order of 7 February 2005 contains General Binding Rules regarding the housing, the manure storage, the manure spreading on land, water consumption, energy efficiency, noise nuisance, waste and monitoring (if applicable). Measures in feeding are not covered by this Order.

A detailed comparison of the Order of 7 February 2005 with the key-BAT conclusions from the BREF ILF is shown in Annex I. Also the BREF conclusions on energy efficiency and water consumption are included in this comparison.

Such as in the BREF ILF no objectives in the form of emission values are set. Two exceptions are the maximum noise levels between 22h-06h and the load emission level of 170 kg N/year per hectare to protect the groundwater in protected areas.

Except for some specific technical requirements (e.g. application of impermeable floor in animal housing, spacing between animal housing/manure storage and residential area or others, application) most of the requirements are rather general and difficult to apply as enforceable permit conditions. For example in Article 13 of the Decree it is said that appropriate measures have to be taken to avoid emissions of odour, gasses and dust without setting targets to be met or further specifying these 'appropriate measures'. They

are at a more general level compared to the BAT conclusions from the BREF ILF. This requires additional interpretation at the individual permit level to set enforceable permit conditions.

How are permit conditions set for environmental issues not covered by the GBRs?

According to the French authorities, in the application of an environmental permit, the core document is the Environmental Impact assessment (EIA). Next to the identification of the environmental impacts of the installation, the EIA also suggests several measures to compensate, reduce or prevent these impacts.

The elaboration of the EIA for livestock farming installations is addressed by the circular letter of 19 October 2006 which makes reference to the Guidance document 'Impact analyse of a classified livestock farming installation' (Analyse de l'étude d'impact d'une installation classée élevage) published by the Ministry of Environment. The circular is a guidance in how to set up an EIA for an intensive livestock farm. The circular makes explicit reference to the French translation of the BREF document for the selection of the proposed measures. However, the circular in itself is not a guidance document for setting the permit conditions. For instance, it does not contain a list of measures to be applied.

In the EIA also an estimation of the costs related to the technical measures is enclosed. These costs are evaluated against the financial capacity of the farm. It is not clear, however, how the conclusions of the EIA are translated into permit conditions.

According to the French authorities, other documents are consulted in order to take in account the local environmental context or other regulations :

- water regulation (framework directive and local scheme for water quality "SAGE" and "SDAGE")
- nitrate directive
- documents especially regarding feeding practices¹

Their consultation has not been included in a formal permit procedure.

In the future, guidance documents containing technical fact sheets summarizing the BAT for feedstock installations will become available.

¹ CORPEN, Estimation des rejets d'azote - phosphore - potassium - cuivre et zinc des porcs. Influence de la conduite alimentaire et du mode de logement des animaux sur la nature et la gestion des déjections produites

Block 4: Implementation of the GBRs

Mechanism to implement the rules:

The permitting process works at two levels:

- The operator justifies in his permit application the technical choices he will make to protect the environment.
- The competent authority charged with the examination of the permit file, analyses the technical choices made by the applicant with a view to determining the technical regulations for the permit and in particular the applicable emission limit values.

The Environmental Impact Assessment will form the basis for the discussions between the operator and the CA.

There is always an individual approach to for each installation. This approach can confirm the use of GBRs or lead to set stricter permit conditions. This depends on the local conditions of the environment and the technical aspects of the installation.

Options/criteria to deviate from the rules: (both less strict and stricter)

The Ministerial Decree has to be implemented at the departmental level. The Departmental government is allowed to deviate from the prescriptions set in the Ministerial Decrees when taking into account the local situation. These deviations can only result in stricter permit conditions.

Practical experience

In practice, the sectoral permit conditions set in the ministerial Decree are considered as a safety net. Stricter permit conditions are often applied (No exact data available). Less strict permit conditions are not applied as this is not allowed

Economic benefits:

No economical analysis on the use of GBRs have been made.

Environmental benefits:

According to the French contact, the implementation of the GBR result in an environmental benefit as they set minimum conditions that could not have been reached in some cases when applying only a case by case approach. As the GBR are periodically revised with stricter requirements, this induces a general progress in environmental protection

Block 5: Review and update of GBRs

Introduction:

This section describes the processes and criteria for reviewing and updating the GBRs.

Mechanisms:

There is no general procedure for the update of the GBRs in place. The revision of the GBR is decided at the ministry level on the basis of various considerations, such as need to decrease pollutions from some industrial sectors, implementation of directives (like IPPC, WFD and WID), and the technical progress (this include the publication of a new BREF). The update process itself is similar to the writing of a new sectoral Order (see Block 3)..

Do changes in the GBR automatically cause changes in the permit conditions?

The way an updated GBR affects all the existing permits is set in the revised sectoral Order. There are various options depending on the sector : usually and especially for the IPPC activities, the existing installation have to meet the new GBRs within a certain period of time.

Practical experience:

As described in the subheading on historical developments (see Block 2) the GBRs applying to the ILF sector have been reviewed recently (2005). According to the content of the revised Order, the BAT-conclusions of the BREF ILF (2003) did not form the base for the new GBRs.

Block 6: Overall assessment and evaluation of the GBRs and its role in the permitting process:

Assess and evaluate:

In its integrated permitting system France was using general binding rules already before the implementation of the IPPC Directive. In fact it is a general choice of the Ministry of environment to have GBRs set for all the Classified Installations (IPPC and non-IPPC).

The Ministerial Order of 7 February 2005 sets the minimum permit conditions for the livestock farming of cattle, poultry and feathered game and pigs. The Order covers both IPPC and non-IPPC installations as lower thresholds are applied and other activities (e.g. cattle) are covered as well. There is no difference made between the GBRs set for large and small installations.

The drafting of the sectoral GBR is made by the Ministry and then is submitted to a general consultation of the other ministries, the industry and NGOs. The Departmental Direction of veterinary services (who is in charge for the inspection of ILF installations) has played an important role in the GBR drafting process. The role of the BREF document in this process is not very clear.

The Order follows an integrated approach and most of the aspects that may cause environmental impact are covered, such as the housing, the manure storage, the manure spreading on land, water consumption, energy efficiency, noise nuisance, waste and monitoring (if applicable). Measures in feeding are not covered. Except for some specific technical requirements (e.g. application of impermeable floor in animal housing, spacing between animal housing/manure storage and residential area or others, application) most of the prescription are only descriptive and difficult to apply as enforceable permit conditions. Most of the GBRs were too general to compare them with the BAT-conclusions of the BREF document.

Therefore, the implementation of the GBRs requires additional interpretation at the individual permit level to set enforceable permit conditions. In France GBRs have the status of minimum standards and only stricter permit conditions can be set at the individual permit level. According to the French authorities, in the application of an environmental permit, the core document is the Environmental Impact assessment (EIA).

The elaboration of the EIA for livestock farming installations is regulated by the circular letter of 19 October 2006 which makes reference to the Guidance document 'Impact analyse of a classified livestock farming installation' (Analyse de l'étude d'impact d'une installation classée délevage) published by the Ministry of Environment. This circular states that the BREF (French version) should be consulted when the proposed measures for the installation concerned, are selected. The circular in itself is not a guidance document for setting the permit conditions

There is no general procedure for the update of the GBRs in place. The revision of the GBR is decided at the ministry level on the basis of various considerations, such as need to decrease pollutions from some industrial sectors, implementation of directives (like

IPPC, WFD and WID), and the technical progress (this include the publication of a new BREF). The update process itself is similar to the writing of a new sectoral Order

ANNEX I: GBR COMPARISON WITH THE RELATED BREF (BREF ILF)

The main environmental impacts relate to ammonia emissions to air, and nitrogen and phosphorus emissions to soil, to surface water and groundwater, and result from the manure from the animals. Measures to decrease these emissions are not limited to how to store, treat or apply the manure once it arises, but comprise measures throughout a whole chain of events, including steps to minimise the production of manure. This starts with good housekeeping and measures in feeding and housing, followed by the treatment and the storage of manure, and finally the spreading on land.

The BREF describes BAT conclusions for the intensive rearing of pigs and poultry.

- Section 5.1 deals with generic BAT conclusions on good agricultural practice that are generally applicable to both sectors; pigs and poultry.
- Section 5.2 describes the general BAT conclusions for the pig sector and
- Section 5.3 describes the general BAT conclusions for the poultry sector.

Sections 5.2 and 5.3 have the same structure and describe BAT conclusions on:

- nutritional techniques
- air emissions from housing
- water
- energy
- manure storage
- on-farm manure processing, and
- techniques for land spreading of manure.

1) BAT AELs (quantitative BAT)

This BREF does not provide any BAT AELs.

2) Additional key BAT conclusions, with no BAT AEL given (qualitative BAT)

Air emissions related to animal housing:

Intensive rearing of pigs

BREF key BAT conclusions:

General principles of reducing air (NH₄) emissions from pig housings:

- design slatted floors to allow rapid pass-through of manure
- removing manure slurry to external store
- aerate or otherwise treat effluent that will be used for flushing
- cool the manure surface
- use smooth easy-clean surfaces

Housing systems for mating / gestating sows:

- a fully or part slatted floor with vacuum system for slurry removal, or
- a part-slatted floor and a reduced manure pit

- other variations may also be BAT in certain circumstances (BAT rather unspecific here and mainly sub-divisions of the above BAT in certain circumstances)
- use of litter can be BAT

Housing systems for growers /finishers:

- a fully slatted floor with a vacuum system for frequent removal, or
- a partly slatted floor with a reduced manure pit, including slanted walls and a vacuum system, or
- a partly slatted floor with central, convex solid floor, or an inclined solid floor at the front of the pen, a manure gutter with slanted side walls, and a sloped manure pit
- other conditional BAT identified for various circumstances
- use of litter can be BAT

Housing systems for weaners:

- a pen or flat deck with a fully-slatted- or partly-slatted floor with a vacuum system for frequent slurry removal, or
- a pen or flat deck with a fully-slatted floor beneath which there is a concrete sloped floor to separate faeces and urine, or
- with a partly-slatted floor (two-climate system), or
- with a partly-slatted iron or plastic floor and a sloped or convex solid floor, or
- with a partly-slatted floor with metal or plastic slats and a shallow manure pit and channel for spoiled drinking water, or
- with a partly-slatted floor with triangular iron slats and a manure channel with sloped side walls
- other conditional and optional BATs

Housing systems for farrowing sows and piglets: BAT is a crate with a fully-slatted iron or plastic floor and with a:

- combination of a water and manure channel, or
- flushing system with manure gutters, or
- manure pan underneath.

Intensive rearing of poultry

BREF key BAT conclusions:

Housing systems for layers:

Consider the requirements laid down by the Directive 1999/74/EC on layer housing. These requirements will prohibit the installation of new conventional cage systems by 2003 and lead to a total ban on the use of such cage systems by 2012.

Cage housing: BAT is:

- a cage system with manure removal, at least twice a week, by way of manure belts to a closed storage, or
- vertical tiered cages with manure belt with forced air drying, where the manure is removed at least once a week to a covered storage, or
- vertical tiered cages with manure belt with whisk-forced air drying, where the manure is removed at least once a week to a covered storage, or

- vertical tiered cages with manure belt with improved forced air drying, where the manure is removed from the house at least once a week to a covered storage, or
- vertical tiered cages with manure belt with drying tunnel over the cages; after 24 – 36 hours the manure is removed to a covered storage.
- Conditional BAT:
The deep pit system is a conditional BAT. In regions where a Mediterranean climate prevails this system is BAT. In regions with much lower average temperatures this technique can show a significantly higher ammonia emission and is not BAT unless a means of drying the manure in the pit is provided.

Non-cage housing: BAT is:

- a deep litter system with forced air drying, or
- a deep litter system with a perforated floor and forced air drying, or
- an aviary system with or without range and/or outside scratching area.

Housing systems for broilers: BAT is:

- the naturally ventilated house with a fully littered floor and equipped with non-leaking drinking systems, or
- the well-insulated fan ventilated house with a fully littered floor and equipped with nonleaking drinking systems (VEA-system).
- other conditional BAT given

Decree of 7 February 2005:

According to article 13, chapter III “Règles d’exploitation” the buildings have to be ventilated in a correct manner (manner = not specified). The operator has to take appropriate measures to avoid emissions of odour, gasses and dust. These measures are not further specified. Article 13 also limits the number of animals (pigs) in open air per hectare

Manure storage/processing/landspreading:

Intensive rearing of pigs

BREF key BAT conclusions:

Stacks/heaps:

For a stack of pig manure that is always situated on the same place, either on the installation or in the field, BAT is to:

- apply a concrete floor, with a collection system and a tank for run-off liquid, and
- locate any new build manure storage areas where they are least likely to cause annoyance to sensitive receptors for odour, taking into account the distance to receptors and the prevailing wind direction.

For a temporary stack of pig manure in the field, BAT is to:

- position the manure heap away from sensitive receptors such as, neighbours, and watercourses (including field drains) that liquid runoff might enter.

Storage tanks:

BAT for the storage of slurry in a concrete or steel tank comprises all of the following:

- a stable tank able to withstand likely mechanical, thermal and chemical influences
- the base and walls of the tank are impermeable and protected against corrosion
- the store is emptied regularly for inspection and maintenance, preferably every year
- double valves are used on any valved outlet from the store
- the slurry is stirred only just before emptying the tank for, e.g., application on land.

It is BAT to cover slurry tanks using various (some suggested) options.

Storage lagoons:

A lagoon used for storing slurry is equally as viable as a slurry tank, providing it has an impermeable base and walls (sufficient clay content or lined with plastic) in combination with leakage detection and provisions for a cover.

It is BAT to cover lagoons where slurry is stored using various (some suggested) options.

On-farm manure processing:

In general, on-farm processing of manure is BAT only under certain conditions (these are suggested).

Techniques for land spreading pig manure:

The emissions of ammonia to air caused by land spreading can be reduced through the selection of the right equipment.

Techniques that inject slurry show the highest reduction, but techniques that spread slurry on top of the soil followed by incorporation shortly afterwards can achieve the same reduction.

The majority of the TWG agreed that:

either injection or land spreading and incorporation (if the land can be easily cultivated) within 4 hours is BAT for applying slurry to arable land, the conventional broadcast spreader is not generally BAT (some exceptions specified)

Intensive rearing of poultry

Stack/heap:

If manure needs to be stored, BAT is to store dried poultry manure in a barn with an impermeable floor and with sufficient ventilation.

For a temporary stack of poultry manure in the field, BAT is to position the heap away from sensitive receptors such as, neighbours, and watercourses (including field drains) that liquid runoff might enter.

On-farm manure processing:

In general, on-farm processing of manure is BAT only under certain conditions (conditional BAT). The conditions in on-farm manure processing that determine if a technique is BAT are related with conditions such as the availability of land, local nutrient excess or demand, marketing possibilities for green energy, local regulations, and the presence of abatement techniques.

An example of a conditional BAT is:

- applying an external drying tunnel with perforated manure belts, when the housing system for layers does not incorporate a manure drying system or another technique for reducing ammonia emissions
- Besides treatment on-farm, manure may also be (further) treated off-site in industrial installations such as, poultry litter combustion, composting or drying. The assessment of off-site treatment is outside the scope of this BREF.

Decree of 7 February 2005:

Article 4 and article 5 of chapter I “localisation” define the localisation of stock farms and their outbuilding (including stock farms for poultry and pigs (in open air)). All precautions have to be taken to avoid direct discharges of sediment and polluted water into (surface and ground)water, public grounds and grounds of a third party. Any new build manure storage areas must be located where they are least likely to cause annoyance to sensitive receptors for odour, taking into account the distance to receptors and the prevailing wind direction.

Article 11 of chapter II – “Règles d’aménagement” states that the facilities for manure need to have sufficient capacity until further treatment or land spreading can be carried out (cf. BREF on intensive rearing of poultry and pigs).

Article 14 : manure processing

Article 15 : no direct disposal

Article 17 : composting

Article 16 and 18 : landspreading conditions (including entering the soil (incorporation), distances,...)

Article 19 : waste water treatment plant

Article 20 : other processing methods

Energy:

Intensive rearing of pigs

BREF key BAT conclusions:

Specific BAT for pig housing is to reduce energy use by doing all of the following:

- applying natural ventilation where possible; this needs proper design of the building and of the pens (i.e. microclimate in the pens) and spatial planning with respect to the prevailing wind directions to enhance the airflow; this applies only to new housing
- for mechanically ventilated houses: optimising the design of the ventilation system in each house to provide good temperature control and to achieve minimum ventilation rates in winter
- for mechanically ventilated houses: avoiding resistance in ventilation systems through
- frequent inspection and cleaning of ducts and fans, and
- applying low energy lighting.

Intensive rearing of poultry

BAT for poultry housing is to reduce energy use by doing all of the following:

- insulating buildings in regions with low ambient temperatures (U-value 0.4 W/m²/°C or better
- optimising the design of the ventilation system in each house to provide good temperature
- control and to achieve minimum ventilation rates in winter
- avoiding resistance in ventilation systems through frequent inspection and cleaning of ducts and fans, and
- applying low energy lighting.

Decree of 7 February 2005:

According to article 13 of chapter III “Règles d’exploitation” the buildings have to be ventilated in a correct manner (manner = not specified).

3) The following aspects are covered in general measures and good practice measures

General:

BREF key BAT conclusions:

Good practice general measures for pigs and poultry:

- train staff
- keep records of use of energy and materials (feed and waste)
- have emergency procedures
- repair and maintenance program to keep good working order
- well planned site and activities, and manure application to land

Decree of 7 February 2005:

Article 21 of chapter III “Règles d’ exploitation” says that the installation has to be kept in perfect state. Dangerous products have to be stored in a proper way (proper way is not specified).

Article 22 of chapter III “Règles d’ exploitation” says that waste has to be stored in a way that does not cause risks for people and animals (not specified). According to this article burning in open air is forbidden. In the BREF on intensive rearing of poultry and pigs the environmental aspect of waste is only addressed in small detail (no BAT or BAT associated emission level are determined).

Article 23 of chapter III “Règles d’ exploitation” determines the way in which dead animals (= waste) have to be stored awaiting removal (difference is made between small and large animals). According to this article burning in open air is forbidden.

Article 24 of chapter III “Règles d’ exploitation” lists a few safety measures for the technical installations (electric installations, installations on gas, installations on fuel, heating installations), for their installation, their usage and their maintenance. In the BREF on intensive rearing of poultry and pigs this aspect is only addressed in small detail (equipment however has to be well maintained, but mainly to reduce the energy consumption).

Manure storage/processing/land spreading:

General

BREF key BAT conclusions:

BAT principles respects manure:

- apply nutritional measures
- only spread manure in amounts suited to receiving land
- manage land spreading e.g. to avoid nuisance

The Nitrates Directive lays down minimum provisions on storage of manure in general. BAT for storage of manure is equally valid inside and outside designated Nitrate Vulnerable Zones.

BAT is to design storage facilities for manure with sufficient capacity until further treatment or land application can be carried out. The required capacity depends on the climate and the periods in which application to land is not possible.

Decree of 7 February 2005:

Article 16 of chapter III “Règles d’exploitation” determines the minimal distances between the parcels where effluents are spreaded and houses of third parties and some other sensitive bodies and the maximum delay for working in after spreading on bare fields.

Article 18, 1 of chapter III “Règles d’exploitation” determines the conditions on which effluents can be “cleaned” by the soil and its vegetation. According to article 18, 2 the operator has to make up a plan for spreading the effluents which includes, amongst others, the amount of effluent that is spreaded and the maximum doses for the receiving lands (parcels). For vulnerable areas the amount of effluent spreaded is limited (article 18, 3).

Article 25 of chapter IV “Autosurveillance” determines that the nitrogen fertilisation practices have to be registrated (this includes: the date, the identification of the parcels, the amount of effluents (and nitrogen), ...). This amounts to the management of land spreading as described in the BREF.

Intensive rearing of pigs

BREF key BAT conclusion:

For reducing ammonia emissions from the land spreading of solid pig manure, incorporation is the important factor not the technique on how to spread. For grassland, incorporation is not possible.

Decree of 7 February 2005:

Article 16 : incorporation of the manure is required

Intensive rearing of poultry

BREF key BAT conclusions:

Poultry manure has a high available nitrogen content and it is therefore important to get an even spread distribution and an accurate application rate. For reducing ammonia emissions from land spreading poultry manure, incorporation is the important factor not the technique on how to spread. For grassland, incorporation is not possible.

BAT on land spreading – wet or dry – solid poultry manure is incorporation within 12 hours. Incorporation can only be applied to arable land that can be easily cultivated. The achievable emission reduction is 90 %, but this is very site-specific.

Decree of 7 February 2005:

Article 16 : incorporation of the manure is required

Energy:

General

BREF key BAT conclusions:

BAT is to reduce energy use by application of good farming practice, starting with animal housing design and by adequate operation and maintenance of the housing and the equipment.

Decree of 7 February 2005:

No specific measures indicated in Decree of 7 February 2005

Water:

General

BREF key BAT conclusions:

BAT is to reduce water use by doing all of the following:

- cleaning animal housing and equipment with high-pressure cleaners after each production cycle. Typically wash-down water enters the slurry system and therefore it is important to find a balance between cleanliness and using as little water as possible
- carry out a regular calibration of the drinking-water installation to avoid spill
- keeping record of water use through metering of consumption, and
- detecting and repairing leakages.

BAT is to reduce pollution of water by doing in particular all of the following:

- not applying manure to land when the field is:
 - o water-saturated
 - o flooded
 - o frozen
 - o snow covered
 - o not applying manure to steeply sloping fields
 - o not applying manure adjacent to any watercourse (leaving an untreated strip of land), and
 - o spreading the manure as close as possible before maximum crop growth and nutrient uptake occur.

Decree of 7 February 2005:

Article 7 of chapter II – “Règles d’aménagement” determines which areas of a stock farm need to be equipped with an impermeable floor(ing). The gradient of the floor needs to allow the drainage of effluents for storage or treatment. The walls (on the inside of the stock farm) need to be impermeable on the underside (for a height of min. 1 meter).

According to article 8 of chapter II – “Règles d’aménagement” one needs to install a volumetric water counter (meter) on the drinking-water installation (in order to avoid spills and to keep record of the water use cf. BREF on intensive rearing of poultry and pigs). All measures have to be taken to limit the usage of water (these measures are not specified).

Article 9 of chapter II – “Règles d’aménagement” states that all cleaning water needs to be collected and sent to storage or treatment. The use of high pressure cleaners (cf. BREF on intensive rearing of poultry and pigs) is not mentioned.

According to article 14 of chapter III “Règles d’exploitation” the effluents can be

- spreaded on agricultural fields
- treated in treating system (station) on-site (see also art. 19)
- treated on a specialized site (off-site) (see also art. 20)
- by another way (if authorized)

The emission limit values in case of treatment are fixed based on the best technologies that are economically acceptable (= cf. BAT), taking into account the specific characteristics of the environment.

In case of a breakdown of the treatment system (station), there must be the possibility to store the total quantity of the effluent (article 19).

Article 18 : landspreading conditions

Article 26 of chapter IV “Autosurveillance” determines the parameters that need to be measured in the effluent (and sludge) of a treatment system and the frequency of these measurements. No emissions limit values are determined in this article (cf. BREF on intensive rearing of poultry and pigs).

Nutritional measures

Intensive rearing of poultry

BREF key BAT conclusions:

Nutritional techniques:

Use nutritional management to match feeds more closely to animal requirements at various production stages, thus decreasing the wasted nutrient excretion in the manure.

Feeding measures:

- phase-feeding, formulating diets based on digestible/available nutrients, using low protein amino acid-supplemented diets, and
- using low phosphorus phytase-supplemented diets and/or highly digestible inorganic feed phosphates
- use of feed additives may increase feed efficiency.

Nutritional techniques applied to nitrogen excretion:

BAT is to feed animals with successive diets (phase-feeding) with lower crude protein contents. The BREF provides “indicative crude protein levels in BAT-feeds for poultry”, but these are heavily caveated as examples etc.

Nutritional techniques applied to phosphorus excretion:

BAT is to feed animals with successive diets (phase-feeding) with lower total phosphorus contents. Again “indicative total phosphorus levels in BAT-feeds for poultry” are given, but heavily caveated.

Decree of 7 February 2005:

No specific data on BAT in Decree of 7 February 2005.

Additional information in Decree of 7 February 2005 :

Article 12 of chapter III “Règles d’ exploitation” lays down emission limit values for noise. According to article 12 the emission values for noise may not compromise the health or the safety of “the neighbourhood” or cause nuisance. In the BREF on intensive rearing of poultry and pigs the environmental aspect of noise is not addressed (no BAT or BAT associated emission level are determined).

Conclusion:

The Decree of 7 February 2005 is an integrated Decree and covers most topics discussed in the BREF ILF. Only energy efficiency and nutritional measures, which are worked in detail in the BREF ILF, are not covered by the Decree.

In the BREF, no BAT AELs are determined for the emissions to air from the animal housing. For each type of animal a list of BATs that can be applied have been suggested. Also in the Decree of 7 February, no specific emission values are set. The measures to be taken according to the Decree, Except for some specific technical requirements (e.g. application of impermeable floor in animal housing, spacing between animal housing/manure storage and residential area or others, application) remain very general and difficult to apply as enforceable permit conditions. So, a comparison with the BAT conclusions from the BREF was not possible as the Decree does not refer to a list of technical measures that could be taken to meet the requirements..

Regarding storage, processing and landspreading of manure the Decree states that all precautions have to be taken to avoid direct discharges of sediment and polluted water into (surface and ground) water, public ground and ground of a third party. This is in line with the general conclusions of the BREF. However, no specific measures (exception: incorporation of the manure) have been prescribed in the Decree and a comparison with the suggested BAT therefore is not possible.

The Decree of 7 February 2005 prescribes a large variety of good management practice. These are generally in line with the conclusions of the BREF. However, these measures

could not be applied as enforceable permit conditions and a case by case evaluation is still required.