

III. Template to facilitate the submission of examples/good practices of strategies, policies and measures employed to implement obligations under any of the protocols to the Convention on Long-range Transboundary Air Pollution

<p>Country:</p> <p>SPAIN</p>	<p>Pollutant(s):</p> <p><i>Please indicate the pollutant(s), emissions of which are being controlled</i></p> <p>AMMONIA, methane (enteric fermentation), NOx, and VOC from livestock production</p>
<p>Protocol(s):</p> <p><i>Please indicate the name of the protocol(s) to the Convention, obligations under which are being fulfilled</i></p> <p>Gothenburg Protocol</p> <p>IPCC</p> <p>NOx and VOC protocols</p>	<p>Sector:</p> <p><i>Please indicate the sector (e.g. agriculture, industry, urban planning, environment, etc.), or sectors (if several) for which the strategy, policy or measure has been mainly designed</i></p> <p>AGRICULTURE (LIVESTOCK)</p>
<p>Type of strategy, policy or measure and the level of implementation:</p> <p><i>Please identify the type of strategy, policy or measure – economic e.g. incentive or disincentive (taxes, funds, subsidies, prices or caps/ceilings, payments, rebates, etc); voluntary (agreements, programmes, contracts), regulatory (legislation), or other measures (educational, informational, other)</i></p> <p><i>Please state at which level (municipal, regional, sub-national, national) the policy, strategy or measure is targeted or implemented</i></p> <p>Improvement of inventories through a TIER II (country specific) approach for the estimation of nitrogen excretion an methane from enteric fermentation for pigs (including Iberian pig), poultry, bovine, ovine, caprine and horses, at national level</p> <p>Formation and information of stakeholders through the publication of Best Available Techniques guide and translation of the UNECE Guidance</p>	<p>Method used for the current analysis:</p> <p><i>Please identify the method used for collecting information and the analysis made</i></p> <p>Data have been obtained from scientific publications, public and private data sources and, where this has not been possible, from experts of recognized background. Methodology used where those recommended by EMEP/EEA air pollutant emission inventory guidebook (2016) and IPCC (2016)</p>

Document on Preventing and Abating Ammonia Emissions from Agricultural Sources of 2014 and the development of an application for on farm calculation of emissions.

What is the main objective of the strategy, policy or measure? When has it been implemented/or will be implemented?

Please describe briefly what the measure attempts to achieve or what has been the result of its implementation. Please also describe since when it is being employed or for when its implementation is foreseen. Please explain whether implementation is/was immediate or gradual. [150 words max]

The main objective is to establish a solid starting point, where the current situation of Spanish livestock farming in terms of ammonia and methane emissions (from enteric fermentation) is known as clearly as possible. The use of robust and, above all, transparent data allows the adoption of the most effective measures adapted to the country.

It is also important to bring knowledge of abatement techniques to the stakeholders involved in the most comprehensible way possible so that each of them can adopt those techniques more suitable for their farms in order to achieve the main reduction objectives.

Background and driving forces:

Please explain briefly why this strategy, policy or measure was implemented; mention the driving forces for its introduction e.g. policy development, legislation (EU, national), action plans, voluntary, incentive, or other [150 words max]

Four years ago, Spain decided to change from a TIER I to a TIER II (country specific) approach to improve the national inventory and to know the degree of penetration of the different mitigation techniques. The results and the interesting technical findings can be very useful for the future policies. In particular, the relationship between emissions and food production efficiency, the relationship between the measures of reduction of ammonia and greenhouse gases, the difficulty of collecting data retrospectively and the importance of transparency in the dissemination of results. No specific regulation was required.

Improvement in the estimation methods, the formation and information of stakeholders through a Best Available Techniques Guide, merging ammonia a GHG techniques, the development of an application for “on farm” emissions calculation and the traduction into Spanish of the Guidance document for preventing and abating ammonia emissions from agricultural sources are essentials tools to make more efficient future actions.

Description of the strategy, policy or measure:

Please explain briefly how the strategy, policy or measure works and why it has been chosen compared to other policies/measures. Please also explain how its implementation is being monitored. [200 words max]

It is strictly necessary that a TIER II criteria is followed in the emission inventory for the main livestock species, to know in a detailed way the “country specific” situation of departure. For

example, in Spain, the main species have already adopted measures of mitigation, for example, the multiphase feeding adapted to the different productive stages. Thus, it would not be possible to propose this abatement technique to achieve the reduction targets. On the other way, it would be difficult to stablish efficacious reduction programmes if a TIER I approach is followed. Data must made public.

Reduction of ammonia and greenhouse gases in livestock are very inter-related, so it is necessary to have a holistic view of the situation. Some of the measures recommended for ammonia abatement are not designed for GHG and *vice versa*. Thus, guidelines integrating the Best Available Techniques for ammonia and GHG must be drafted.

Last but not least, stakeholders must have free access to the technical tools that allows them to know the specific techniques that could be adopted in their farms such as the *Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions* and the IT tools needed to perform these calculations are essential.

Costs, Funding and Revenue allocation:

Please state how much the implementation of the measure costs including its monitoring and how it is funded (national budget, industry, taxes, etc.) If the measure is creating revenue, please also explain how this revenue is being allocated and collected. [200 words max]

Those measures where adopted with national budget only. Technical documentation and IT technology is freely available through the Ministry of Agriculture, Fisheries and Food web page.

Effect and impacts on air pollution abatement:

Please explain briefly the effect of the policy, strategy or measure and how it has impacted the abatement of air pollution. If impacts are known, please quantify, if possible. Please highlight also other effects of the implementation of the measure e.g. with regard to compliance, the acceptance of the measure or its transposition (e.g. from a voluntary to a regulatory or another type of measure). [150 words max]

TIER II approach for the major animal species is not, by itself, a measure to abate pollution, but it is an indispensable tool for designing a rational and effective strategic plan to reduce the main gases, pollutants and GHG, which are emitted by livestock. It will also allow a very detailed assessment of the effects of the measures taken. In short, the transition from TIER I to TIER II is an indispensable tool for taking technically effective and economically efficient decisions that are currently being designed.

Training and information are essential for understanding and facilitating the implementation of the regulatory measures currently being drafted to propose concrete plans for the reduction of polluting and GHG gases.

References/Further information: *Please provide most relevant sources for information such as references for web links, books, other resources.*

<https://www.mapa.gob.es/es/ganaderia/temas/ganaderia-y-medio-ambiente/balance-de-nitrogeno-e-inventario-de-emisiones-de-gases/default.aspx>

https://www.mapa.gob.es/es/ganaderia/temas/ganaderia-y-medio-ambiente/mejorestecnicasdisponiblesparareducirelimpactoambientaldelaganaderia_tcm30-436663.pdf

https://www.mapa.gob.es/es/ganaderia/temas/ganaderia-y-medio-ambiente/ece_ebair_120_espdocumentoorientativosobreelamoniac_tcm30-436094.pdf

<http://prtr-es.es/documentos/metodos-medicion-calculo>

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Additional comments: *Please include any additional information you may wish to provide here.*

The results obtained make it possible to reflect on the suitability of calculation systems and the urgent need to take productive efficiency into account when estimating emissions.

Among the former, it is necessary to highlight the difficulty of obtaining reliable and robust data from the historical series on which the reduction commitments are based. In future regulatory developments, it should be borne in mind that many of the data currently considered easy to obtain are not so easy to obtain when looking back over the years.

On the other hand, the execution of the calculation system using a TIER II system has shown that some techniques, such as multi-phase feeding with protein levels adapted to the productive phase have already been implemented and, therefore, do not allow their subsequent use as a reduction technique. In short, the most effective calculation system (TIER II) penalises the least effective (TIER I), as it limits the reduction options.

It is also necessary to take into account the effect of other policies on emissions, as the ban on antibiotics as growth promoters (or the future ban on antibiotics with a prophylactic effect), restrictions on the use of certain feed materials or restrictions on certain products may make it difficult or easier to achieve the objectives.

The growing concern about climate change and the need to adopt effective measures to reduce greenhouse gases may also influence future ammonia reduction plans, since there are complementary measures between ammonia and methane, but there are also contradictory ones, which may make it difficult to achieve the objectives. In this sense, it would be desirable to adopt a reduction objective for both types of gases in a joint way.

Last but not least, account must be taken of the different climatic and production situations that can make it difficult to implement certain techniques.