



Pork Operations - Alberta Protocol

Overview:

Carbon Offsets from Innovative Feeding of Swine and Storing and Spreading of Swine Manure in Alberta

This bulletin provides background and summarizes details of the Quantification Protocol for Pork Operations. An overview of Alberta's Regulatory Framework and Offset requirements are given in the Overview document.

This protocol considers GHG reductions from two kinds of activities on swine farms. First, the protocol quantifies GHG reductions achieved by changing feeding practices that decrease emissions (through reducing volatile solids (VS) and Nitrogen content of the excreted manure), and also practices that change the season and frequency of manure spreading to decrease the conversion of VS to CH₄ in storage and to decrease emission of N₂O after spreading. Second, the protocol quantifies reductions associated with pig husbandry practices that increase efficiency by generating less manure per unit of pigs raised. These practices reduce manure excretion by decreasing the feed and/or by decreasing the time needed to raise the pigs under project conditions.

Emission Reductions – Practices that Count:

This protocol does not explicitly provide a set of practices for project developers to follow in order to meet quantification requirements. The project developer is however responsible for providing evidence that less VS and/or N is excreted per unit pig raised, as manipulating these two practices can decrease the amount of VS and N excreted which results in a reduction of CH₄ emissions from stored manure and a reduction of N₂O emissions from land receiving manure.

The protocol quantifies emission reductions based on the number of pigs raised, by pig class (sows, weaners, feeders, finishers, etc) in the project and thus starts all quantifications based on the number and weights of pigs produced by the project. To calculate the VS and N excretions, the Pork Protocol uses a baseline pig performance (supplied by the project developer or taken from provided sector-level standards), and baseline manure storage and spreading practices to estimate the excretions that would have occurred if the pigs in the project had been raised under baseline conditions. During the project, recorded feed and sales information, and documented manure management strategies are used to calculate the project condition levels of excretions and emissions.

By using this approach the protocol ensures that the offsets are not generated from reducing the number of pigs raised and that the focus of the protocol is to encourage practices that decrease GHG emissions per unit weight of pigs raised.

Under the Alberta Offset System rules, Projects can claim credit back to 2002 onwards, if they meet the requirements of the system and protocols. The requirements of the system is that Projects have to start after 2002, therefore, Project Developers must affirm they started changing practices after 2002 to be eligible to earn credits in the Alberta Offset market. There is no deadline for which to access these past tonnes. If a project developer/agriculture producer wishes to wait a year to see how things evolve in the market, they can get involved a year from now and still gain credit back to 2002 if all requirements are met.



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The requirements for this protocol include:

- All farms in the project are currently feeding swine (farrow, farrow to wean, farrow to finish, nursery, feeder operation) as confirmed by an affirmation from the project developer;
- All farms are currently storing liquid manure for a minimum of 9 months;
- All farms are currently applying manure or custom applying manure to land;
- Quantification of reductions achieved by the project is based on actual measurements and monitoring as indicated in the proper application of this protocol;
- All farms can demonstrate a change in practice in at least one of the feeding or storing and spreading components of the Pork Protocol, after 2002;
 - Decreased feed consumption per unit pigs raised may be achieved by a range of practices including, but not limited to:
 - Split-sex or phase feeding'
 - Wet/dry feeders
 - Improved ventilation/temperature control in the barn
 - Improved health status of the swine heard
 - More efficient genetics
 - Additives to improve feed efficiency.
 - Storing & Spreading component – change to spring or spring and fall emptying and spreading, where the baseline for all projects is set as fall emptying.

Some Practical Considerations:

The Pork Protocol is based on the barn where the pigs are raised and the facility where manure is stored in addition to the land where the liquid manure is spread. On a project level, this may include a number of sites, and a variety of enterprises.

The project developer may choose to implement only one component however they would be required to perform the calculations of other components to ensure the net balance of GHG emission reductions is still positive.

If a farm has both solid and liquid swine manure systems, the feed for pig classes under liquid manure can be split out and applied to the Pork Protocol.

The protocol uses a project specific baseline but allows for selection of a sector-level baseline using regional data for feeding.

References:

Alberta Pork Quantification Protocol. at: <http://www.carbonoffsetsolutions.ca>



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