

## COVERED MANURE STORAGE PROTOCOL DEVELOPMENT WORKSHOP



**February 24-25, 2010**

**J.G. O'Donoghue Bldg** - Boardrooms B and C  
7000 - 113 Street, Edmonton, Alberta

### **BACKGROUND**

A carbon credit or “offset” generated from the agriculture sector is a compliance option for large greenhouse gas (GHG) emitters in both the Alberta Carbon Offset market and under the Federal “Turning the Corner” Climate Change Plan. In the Alberta Carbon Offset market to date, over 2.2 million tonnes of agricultural offsets have been created and verified. As demand for carbon offset develops, it is in the interest of both industry and government to support the development of innovative and effective GHG offset protocols. Under both systems, **Government approved Quantification Protocols are a requirement for creating compliance-quality offsets in both systems.**

Manure storages related to livestock operations have been identified as a source of GHG emissions. Internationally, and throughout North America, GHG reduction protocols for livestock operations have been created to allow producers to reduce their GHG emissions through biogas capture and destruction process. In Alberta, there are several hundred manure storages with the potential to create agricultural offsets.

Climate Change Central is coordinating this Consultation Workshop on behalf of the Government of Alberta. Alberta Agriculture and Rural Development (ARD) initiated the Covered Manure Storage (CMS) protocol development work to assess whether existing protocols in North America can be adapted to the Prairies. This workshop is designed to gather experts to review and assess the science, methods and elements of these protocols for their applicability to prairie conditions.

A technical CMS Working Group has prepared a Science Discussion Document to lead the discussion at the workshop. The group wishes to bring forward a standardized protocol for CMS based on the best available science on GHG emission reduction potential in the Prairies, and possibly for the rest of Canada. The CMS protocol is following the established process for coordinating scientific information and consensus-building according to the ISO 14064-2 GHG Project-Based Standard and past procedures under collaborative Federal-Provincial-Territorial Offset Quantification Team processes.

### **PURPOSE**

To engage key scientific researchers, technical experts and project developers in Alberta and in North America, to provide advice and agreement on standardized protocols to assess GHG emission reductions from covering manure storages with impermeable material and flaring the captured methane in prairie conditions.

The workshop will:

- Focus on completing the outcomes listed below; either during the two-day workshop or through follow-up work, to support the development of a first generation GHG offset protocol related to covering manure storages, such as by:
  - Identifying an acceptable GHG quantification and reduction methodology that can be confidently advanced for use in a first generation protocol for CMS
  - Understanding standard operating practice for impermeable covers to effectively capture and collect biogas
  - Understanding standard operating practices and the requirements for destruction devices to combust methane effectively and efficiently
  - Review and assessment of additional CMS factors including determination of the extent of leakage issues related to the impact of other GHGs such as N<sub>2</sub>O in the CMS, increased nitrogen levels and their forms in the digestate and secondary storage concerns of released methane, within the ISO 14064-2 framework;
  - Discussion of the preferred baseline approach for the CMS protocol;
  - Identification of and priority for areas where research gaps exist to support development of the next generation of a CMS protocol.

General Process:

- Use a combination of a literature and existing protocol review in the form of a Science Discussion Document that will be circulated for review prior to the Workshop, sharing recent research results, researcher experience and small group discussion with large group evaluation of ideas and recommendations to achieve the workshop outcomes.
- The first day will be spent on understanding the context for carbon offsets and protocols, examining factors that affect methane emissions from manure storages; the quantification approaches used in existing protocols and coming to consensus on what is appropriate for application in Alberta; the second day will focus on the manure cover technologies, capture and collection methods and methane destruction conditions, as well as identifying science gaps for future research.

## AGENDA – FEBRUARY 24

8:30 AM – 4:30 PM

### Focus for the Day

Day One will provide an opportunity to learn about the current policy, quantification and inventory methodologies, various protocol approaches and will suggest proposed options for the best available quantification approaches for a CMS Protocol. Break-out sessions in the afternoon will work on proposed options and develop recommendations.

8:00 **REGISTRATION AND CONTINENTAL BREAKFAST**

8:30 **WELCOME AND INTRODUCTIONS** – Overview of the 2 days and General Approach  
*Karen Haugen-Kozyra, KHK Consulting*

8:45 **SETTING THE SCENE** – (i) Carbon Offsets and the Policy Drivers

*Amanda Stuparyk, Climate Change Central*

**SETTING THE SCENE** – (ii) Overview of Covered Manure Storages in Alberta

*Cody Metheral, Alberta Agriculture and Rural Development*

- 9:30 **HOW GHGs ARE CURRENTLY QUANTIFIED IN CANADA – THE BASELINE CONDITION** – IPCC Methodology and Canada’s Tier II Quantification Approach to Greenhouse Gases from manure storages  
*Dr. Xavier Verge, Agriculture and Agri-Food Canada*
- 10:15 **REFRESHMENT BREAK**
- 10:30 **FACTORS AFFECTING GHG EMISSIONS FROM MANURE STORAGE IN CANADA**  
*Dr. Ermias Kebeab, University of California (previously Uof Manitoba, UofGuelph)*
- 11:15 **WHO’S ON FIRST** – How other Systems/Protocols are addressing the Capture and Destruction of Methane from Storages  
*Rob Janzen, Climate-CHECK*
- 12:00 **LUNCH**
- 1:00 **DISCUSSION OF THE APPLICABILITY OF EXISTING PROTOCOL APPROACHES**  
*Facilitated Discussion*
- 1:30 **WHO’S ON SECOND** - Framing the Basic Elements of the Proposed Approach  
*Dr. Rob Janzen, Climate-CHECK*
- 2:00 **BREAK**
- 2:15 **WHERE DO WE GO FROM HERE?** – Break-Out groups, facilitated by Discussion Guides
- 4:15 **SUMMARY AND CLOSE OF DAY ONE**  
*Karen Haugen-Kozyra, KHK Consulting*

## **AGENDA – FEBRUARY 25**

**8:00AM – 12:00 PM**

### **Focus for the Day**

Confidently advance GHG protocol recommendations that address the desired components of a CMS Protocol. Day two will engage participants in developing, evaluating and recommending criteria for the practical side of biogas collection, capture and destruction elements for inclusion in the protocol.

- 8:00 **CONTINENTAL BREAKFAST**
- 8:30 **WELCOME** – Recap from Day one and Review agenda for Day Two  
*Karen Haugen-Kozyra, KHK Consulting*
- 8:45 **COLLECTING BIOGAS FROM COVERED MANURE STORAGE – PROPER APPLICATION OF THE SYSTEM**  
*Andrew Mills, Layfield Environmental Systems*
- 9:15 **DISCUSSION OF CRITERIA TO INCLUDE FOR COVERS/COLLECTION SYSTEMS IN THE CMS PROTOCOL**

*Facilitated Discussion - Plenary*

10:00 **BREAK**

10:15 **PROPER CARE AND FEEDING OF FLARES AND FLARE DESIGN**

*Dr. Peter Gogolek, Natural Resources Canada*

11:00 **DISCUSSION OF CRITERIA TO INCLUDE FOR FLARES/METHANE CONVERSION IN THE CMS PROTOCOL**

*Facilitated Discussion - Plenary*

11:30 **COMPILATION AND PRIORITIZATION OF RESEARCH GAPS/EVALUATION OF WORKSHOP**

*Karen Haugen-Kozyra, KHK Consulting*

11:50 **USE OF WORKSHOP RESULTS AND NEXT STEPS**

*Sheilah Nolan, Alberta Agriculture and Rural Development*