

Energy Efficiency Projects - Alberta Protocol

Overview:

Carbon Offsets from Energy Efficiency Projects in Alberta

This bulletin provides background and summarizes details of the Quantification Protocol for Energy Efficiency Projects in Alberta. An overview of Alberta's Regulatory Framework and offset requirements are given in the overview document in this series.

The Energy Efficiency projects protocol was developed to give project developers/agriculture producers a generic recipe to follow to meet the measurement, monitoring, and greenhouse gas (GHG) quantification requirements when making process changes or retrofitting their pork, dairy and/or poultry operations. These process changes may include mechanical, biological, and/or chemical components of the operation.

Under the Alberta Offset System rules, projects can claim credit back to 2002 onwards, if they meet the requirements of the system and protocols. There is no deadline for which to access these past tonnes so long as verification can be done. If a project developer/agriculture producer, wanted to wait to see how things evolve in the market, they could get involved latter and still gain credit back to 2002 if all requirements are met.

Emission Reductions – What Counts?

By making changes to existing industrial, commercial and agricultural process and/or retrofitting the facilities with more efficient systems that lead to better overall efficiencies in energy use per unit of productivity will result in direct and indirect GHG reductions. The baseline condition for this protocol is defined as the process configuration prior to the changes or facility retrofits. An energy project audit would be the initial step in determining what the energy baseline would be as well as to what direct and indirect emissions footprint/unit of production was before the changes were implemented. The International Performance and Verification Protocol* provides guidance for the energy project assessment.

More specifically, a project must demonstrate:

- The process changes or facility retrofits must rely on functionally equivalent inputs and outputs from the modified process as indicated by an affirmation from the project developer/agriculture producer;
- A suitable unit of production, or other applicable unit that effectively describes any non- production sensitive components, can be defined for incorporating equivalence within the calculation methodology as indicated by reasoned qualitative and quantitative analysis;
- Biological or chemical components of the operation must not yield any increase in non-biogenic GHG emissions compared to the baseline condition, unless these are accounted for under the applicable flexibility mechanisms as indicated by an affirmation from the project developer/agriculture producer;
- The quantification of reductions achieved by the project is based on actual measurement and monitoring (except where indicated in the protocol) as indicated by the proper application of the protocol; and,
- The project must meet the requirements for offset eligibility as specified in the applicable regulation and guidance documents for the Alberta Offset System.



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Coefficients of GHG gain:

GHG reduction rates are also called factors, or, coefficients. Default coefficients from energy efficiency in Alberta account for a baseline and project conditions for emission reduction. The baseline is calculated by the energy and emissions footprint/equivalent unit of production, determined at the initial energy project assessment. This approach accounts for market forces including supply and demand, which may change the defined unit of production. The unit of production needs to be equivalently comparable within the calculation of emissions.

There is some flexibility allowed in how the project developer applies the protocol. If biological or chemical processes are non-existent or not altered, then the project developer/agriculture producer may exclude the sources and sinks; if the baseline energy/unit of production is verified through available records. An energy assessment can be waived if justification of the baseline condition can be made with certainty based on current industry practice; new process and/or facilities may also be included in this flexibility. Equivalent or not applicable sources and sinks can be excluded from analysis; project proponents may link to external ambient temperature data as a means of adjusting for equivalence; the process changes may occur within a single or multiple unit (project developer still needs to justify the units that are altered) And generic emissions factors may be substituted for site specific emissions and the process changes may impact the production efficiency and gross production (developer must be able to justify any changes). Whether the protocol flexibility is applied or not the minimum standard for data quality, frequency, accuracy, and quality must still be met.

Definitions:

Functional Equivalences

The project and the Baseline should provide the same function and quality of products or services. This type of comparison requires a common metric or unit of measure for comparison between the Project and Baseline activity.

Energy Project Assessment

A detailed analysis completed by an independent, competent professional of the efficiency of heating, cooling, ventilation, and other energy systems within a facility. The analysis must be systematic, replicable, verifiable and reasonable encompassing all components of the facility included within, and directly related to, the project unit.

Unit of Productivity

Defined by the project proponent as a basis for incorporation of functional equivalence within the calculation methodology. i.e. – energy requirements for beef/pork/chicken from feeding operations. The unit of production productivity should be defined to account for any non-production sensitive components. In all cases the project proponent must thoroughly justify their assessment of the appropriate unit of productivity.

References:

Alberta Quantification Protocol for Energy Efficiency Projects: www.carbonoffsetsolutions.ca.

*International Performance Measurement and Verification Protocol (IPMVP): www.evo-world.org/



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