California Department of Food and Agriculture and California Air Resources Board

Greenhouse Gas Interim Quantification Methodology for the California Department of Food and Agriculture State Water Efficiency and Enhancement Program Greenhouse Gas Reduction Fund Fiscal Year 2013-14/2014-15

A. Introduction

The Air Resources Board (ARB) is required to develop quantification methods for agencies receiving Greenhouse Gas Reduction Fund (GGRF) appropriations per SB 862 (Senate budget and Fiscal Review Committee, Chapter 36, statutes of 2014).

Administering agencies, receiving appropriations from the FY 2013-14 drought bill (SB 103 approved on March 1, 2014), developed interim quantification methodologies in consultation with ARB. The interim quantification methodology will also be used for appropriations from the FY 2014-15 drought bill (AB 91 approved on March 27, 2015). For FY 2015-16 and future years, ARB will continue to develop or update quantification methodologies for GGRF funded programs.

B. Quantification Methodology

The California Department of Food and Agriculture (CDFA) developed the State Water Efficiency and Enhancement Program (SWEEP) to provide financial incentives for farmers to implement GHG reducing water conservation and energy savings measures on farms throughout the State.

CDFA developed the attached interim quantification methodology for use in estimating proposed project GHG emission reductions for SWEEP funded with FY 2013-14 GGRF monies. The interim quantification methodology is a GHG emissions calculator that is used to determine GHG reductions from estimated on-farm fuel and/or energy savings from measures such as:

- Reduced pumping due to water savings from irrigation and scheduling improvements.
- Pump improvements such as installation of variable frequency drive controllers on pump(s) and pump efficiency retrofits.
- Increases in energy or fuel use from irrigation system conversions such as conversion from a furrow or border strip method to a pressurized irrigation system.
- Any other fuel or energy saving measures associated with the proposed project.

The calculator tool can be accessed here: http://apps4.cdfa.ca.gov/eicalculator/.

The CDFA SWEEP GHG emissions calculator allows users to determine GHG reductions from on-farm fuel and/or energy savings as a result of project implementation. The calculator provides fields for users to input annual pre-project fuel usage and estimated annual post-project fuel usage from a number of energy types including electricity, diesel, gasoline, natural gas, butane, propane, and biodiesel. After the user inputs are entered, the calculator displays potential annual fuel savings and the associated potential annual GHG emission savings. The calculator utilizes Environmental Protection Agency (EPA) emission factors for GHG inventories which can be accessed here: http://www.epa.gov/climateleadership/documents/emission-factors.pdf.

ARB reviewed the SWEEP interim quantification methodology for estimating project GHG emission reductions from on-farm fuel and/or energy reductions. Based on the ranking criteria for project funding, the project assumptions, and results provided by the calculator are appropriate for SWEEP for interim use.

C. Next Steps

ARB will continue to evaluate and update the GHG emission reduction quantification methodologies as necessary for future FY appropriations for GGRF projects. Quantification methods are posted on ARB's auction proceeds webpage at: http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/quantification.htm

GREENHOUSE GAS EMISSION CALCULATOR FOR FUEL SAVINGS

Instructions: Use this calculator to determine GHG reductions due to estimated fuel savings in your stationary agricultural equipment such as irrigation pumps. You will need to gather:

- Information on current fuel use from utility bills over the past year.
- Information on the fuel savings from the proposed project.

This information could come from an energy audit or irrigation system design.

When estimating on-farm fuel and/or energy savings to input into this calculator, please consider all of the following that may apply:

- Energy or fuel savings as a result of reduced pumping due to water savings from irrigation improvements and scheduling improvements.
- Energy or fuel savings from pump improvements such as installation of variable frequency drive controllers on pump(s) and pump efficiency retrofits.
- Any increases in energy or fuel use from irrigation system conversions.
- Energy or fuel savings from other reported energy saving measures associated with the proposed project.

Energy Type	Current Fuel Usage/Year	Estimated Fuel Usage After Project Installation/Year	Potential Fuel Savings/Year	Potential GHG Savings/Year (Tonnes CO_2E/Year)
Electricity from Utility Provider (Kwh)			0	0.00000
Distillate Fuel Oil No. 2 Diesel (Gallons)			0	0.00000
Motor Gasoline (Gallons)			0	0.00000
Butane (Gallons)			0	0.00000
Biodiesel (100%) (Gallons)			0	0.00000
Propane (Gallons)			0	0.00000
Natural Gas (SCF)			0	0.00000
**Note that Solar Power and Wind Power do not contribute to GHGs from fuel use*				
Total Ghg Savings/Year (Tonnes CO_2E/Year)				0.00000
Total Acres Impacted By Project				

Total Ghg Savings / Year / Acre (Tonnes CO_2E/Year/Acre)	0.00000

Clear Calculator