

# Qualco Energy Bio-Gas Project



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<http://www.Qualco-Energy.org>

# Introduction

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- ⌘ Description of Project
- ⌘ Current status of Project
- ⌘ Future Expansion
- ⌘ Funding
- ⌘ Power Purchase Agreement
- ⌘ Benefits of Digester Project
- ⌘ Questions

# Project Description

## ⌘ Sewage Treatment for Cow Manure

- ☑ Collect Cow Manure from Dairy
- ☑ Collect Ag. Waste and Pre-Consumer food Waste
- ☑ Pump into Anaerobic Digester
- ☑ Capture Methane Gas
- ☑ Burn Gas to Produce Electricity
- ☑ Compost Bio-solids
- ☑ Return Effluent & Compost to Farms

# Biogas Project



- ⌘ Started Operation December 2008
- ⌘ Currently Operating with 1300 cows, other agricultural substrates and pre-consumer food wastes.
- ⌘ Washington State Law exempts dairy digester operations from waste handling permits. Digesters must use at least 50% manure, may use other agricultural wastes and use up to 30% Pre-consumer food waste.
- ⌘ Generator capacity is 450 KWh and has operated approx. 92% of the time since start-up.
- ⌘ Revenues
  - ⌘ Approx. \$12,000/month electricity sales.
  - ⌘ Approx. \$35,000/month tipping fees for food wastes.
  - ⌘ Carbon Credits – California Market estimate \$45,000/year



# Expansion Opportunities

- ⌘ Concentrating nutrients from liquid effluent for farms to use instead of commercial fertilizers.
- ⌘ Add additional digester capacity.
- ⌘ Add additional generator capacity (750 – 800 KW)
- ⌘ Clean gas to pipeline quality and compress for RCNG market (Transportation/Heating Fuel).
- ⌘ Use digester gas for drying facility.
- ⌘ Use waste heat for other uses on site (i.e. green houses/hot houses).

# Funding

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- ⌘ Department of Energy Grant for Feasibility Study and Business Plan (\$250K)
- ⌘ Department of Agriculture Grant for Construction (\$500K)
- ⌘ Energy Bill through IRS - Clean Renewable Energy Bonds (\$2.6M)
- ⌘ Tulalip Tribal Funds (\$350K)
- ⌘ Volunteered Time by Qualco Board
- ⌘ Land Donated by State of Washington (Former Corrections Honor Farm)

# Power Purchase Agreement

- ⌘ SnoPUD Small Renewables Program
  - ☑ Peak/Off-Peak Rates
  - ☑ Transmission & Distribution Line Loss Credit
  - ☑ Tradable Renewable Energy Credits
  - ☑ Deferral of System Upgrades Credit
  - ☑ Distributed Generation Credit
  - ☑ Generation Capacity Credit (Peak Hours October – March Only)
  - ☑ No Wheeling Fees from old PSE contract

# Benefits of Project



- ⌘ Improved Water Quality from Stormwater Run-Off
  - ☑ 92-98% Pathogen Reduction in Effluent for Irrigation
  - ☑ Converting Nutrients from organic to inorganic forms
- ⌘ Reduced Waste going to Landfills and Wastewater Treatment Facilities
- ⌘ Creation of Renewable Energy
- ⌘ Recycling Nutrients for use on Neighboring Farms
- ⌘ Reduced Methane Emissions
- ⌘ Improved Economic Viability for Farms





**Questions?**

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