

# JEFF FRIESEN, P.E. *Project Manager*

## PROFILE

Jeff Friesen is a project manager and founding member of ENERGYneering Solutions, Inc. (ESI). Mr. Friesen has seven years of experience in development, design, and construction for renewable energy projects including: landfill and digester gas collection and control, biofuel-to-energy, high BTU conversion, woody biomass thermal energy, and hydroelectricity. As a project manager, Mr. Friesen is involved technically and managerially at all stages of a project from feasibility study to startup.

## PROFESSIONAL LICENSES

Professional Engineer – California (No. 35687)

## EDUCATION

BS, Mechanical Engineering, George Fox University, Newberg, OR 2007

## AFFILIATIONS

American Society of Mechanical Engineers  
Solid Waste Association of North America  
Caterpillar 3520 User Group

## PROFESSIONAL EXPERIENCE

### BIO-FUEL UTILIZATION EXPERIENCE

#### *Project Types*

- Landfill Gas Electric Generation
- Digester Gas Electric Generation
- High BTU Conversion
- Woody Biomass Utilization

#### *Professional Service*

- Project Planning/Development
- Engineering and Design
- Construction Management
- Startup Assistance
- Operations Assistance

#### *Equipment Experience*

- Caterpillar
- Jenbacher
- Stirling Cycle Engines
- Biomass-Driven Steam Engines
- Biomass Thermal Systems
- Turbine Systems
- Siloxane Removal Systems
- Gas Cleanup Systems
- Compression Systems
- Flaring/Thermal Oxidizing Systems

### LANDFILL AND DIGESTER GAS COLLECTION AND CONTROL SYSTEM EXPERIENCE

#### *Professional Service*

- Feasibility Studies
- System Design
- System Retrofits
- Construction Management
- Operations and Monitoring
- Compression System Skid Design

### LANDFILL AND DIGESTER GAS COLLECTION AND CONTROL SYSTEM EXPERIENCE

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## SAMPLE PROJECTS

### BIOFUEL ELECTRIC GENERATION PROJECTS

- Lorain II, Oberlin, OH | *16MW Facility Design and Construction Assistance*
- Carbon Limestone, Lowellville, OH | *3.2MW Facility Design and Construction Assistance*
- Energy 2001, Lincoln, CA | *6 CAT3516s, 5MW Facility Design/Retrofit*
- Roseburg LFGTE, Roseburg, OR | *1.6 MW Facility Design, Construction, Operations*
- Baseline, Ocala, FL | *Designed and managed construction for a 3.2MW LFGTE facility*
- Trinity Oaks, Dallas, TX | *Designed and managed construction for a 3.2MW LFGTE facility*
- Otay LFGTE Facility, San Diego, CA | *3.2MW LFGTE Facility with separate utility interconnects with SDG&E.*
- Ostrom Road, Wheatland, CA | *Designed and managed construction for a 1.6MW LFGTE facility with integrated flare/blower system.*
- Finley Buttes, Boardman, OR | *Design for 4.8MW LFGTE Facility with integrated heat recovery system.*
- Santa Cruz Resource Recovery, Santa Cruz, CA | *Designed and managed construction for the replacement of a 1MW Solar Turbine with a 1.6MW CAT3520*
- Three Mile Canyon Farm, Boardman, OR | *4.8MW digester gas-to-energy facility design. Utilizes 3 CAT3520s with heat recovery system.*
- Old Dominion Landfill, Richmond, VA | *EPC Construction and Design for 6.4MW LFGTE facility utilizing CAT3520s*
- Concord Energy, Charlotte, | *Preliminary design for a 10.4 MW LFGTE Solar Turbine expansion project*
- Knott Landfill, Bend, OR | *End use and Feasibility study for a LFGTE Stirling Biopower Engine pilot project*

### LFG HIGH BTU CONVERSION PROJECTS

- SWACO High BTU Facility, Jackson Township, OH | *Mechanical Drawing Package for a 6,000SCFM LFG to High BTU conversion facility*
- Seneca High BTU Facility, Lane County, OR | *Mechanical Drawing Package for a 3,000SCFM LFG to High BTU conversion facility*

### WOODY BIOMASS UTILIZATION PROJECTS

- Sisters High School Boiler, Sisters, OR | *Design and retrofit installation of a 2MMBTU/h woody biomass boiler for the Sisters High School*
- Mt. Bachelor Feasibility Study, Mt. Bachelor, OR | *Feasibility study for using woody biomass to heat over 150,000 sq. feet of building space for the entire mountain base facilities of the Mt. Bachelor Ski Area.*
- Sisters Airport Feasibility Study, Sisters, OR | *Feasibility study for heating a 20,000 sq. foot building with woody biomass*

### LFG COLLECTION AND CONTROL PROJECTS

- Knott Landfill, Bend, OR | *Automated condensate recirculation management system design and construction, LFG well-field design and construction*
- Bethel-Danebo, Lane County, OR | *LFG migration control and monitoring system planning and design*
- Coffin Butte Landfill, Corvallis, OR | *LFG well-field design and construction assistance*



## PRESENTATIONS

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### WORKSHOP PRESENTATIONS

- *Developing Sustainable Energy Projects*, Central Oregon Community College, May 2013.
- *Basics of Renewable Energy Development*, George Fox University, October 2013.
- *Heat Pump Technology Overview*, ENERGYneering Lunch n' Learn, August 2013.