

Shell New Energies Junction City



WÄRTSILÄ

PROJECT INTRODUCTION

Shell New Energies Junction City in Oregon will utilize locally-sourced cow manure and excess agricultural residues from grass and wheat straw to produce approximately 736,000 MMBtu a year of Renewable Natural Gas (RNG) – enough to fuel nearly 10,000 cars a year in the US. This project is part of a broader portfolio of anaerobic digestion projects in the US supporting the use of low carbon intensity RNG for on-road transport.

3500 SCFM raw biogas from co-digestion of cow manure and agricultural residues are upgraded in a CApure plant provided by Wartsila Biogas Solutions.

GUARANTEED BIOGAS UPGRADING PLANT PERFORMANCE

The Puregas CApure biogas upgrading process selected for this project ensures profitable and reliable operation with a performance guarantee of 99.9% methane recovery and 98% uptime throughout the plant life cycle.

The CApure plant has very low energy consumption compared to other upgrading technologies and can return over 90% of the heat consumed via heat integration with the anaerobic digesters. The CApure plant requires little maintenance.

PROVEN BIOGAS UPGRADING TECHNOLOGY

Wartsila Biogas Solutions has extensive experience with digester biogas upgrading. There are currently more than 40 CApure plant installations globally and 20 years of operating experience.

PROJECT DATA

- Location: Junction City, Oregon
- Start of operation: 2021

ABOUT THE FACILITY

- Plant capacity: 3500 SCFM (6000 Nm³/h)
- Biogas feedstock: dairy manure and straw/grass residues
- Puregas CApure upgrading technology

For more information:

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Threemile Canyon Farms

PROJECT INTRODUCTION

Threemile Canyon Farms is a leading sustainable dairy farm located on 93,000 acres in Boardman, Oregon with biogas produced from anaerobic digestion. The Wartsila CAPure upgrading plant converts 3500 SCFM (6000 Nm³/h) of digester biogas from 33,000 Jersey cows to grid-quality RNG.

Converting the dairy manure to RNG reduces 136,000 metric tons per year of CO₂, which is equivalent to the annual greenhouse gas emissions from 28,875 passenger vehicles or energy consumption of 16,285 homes.

HIGHEST BIOMETHANE RECOVERY IN NORTH AMERICA

The biogas upgrading plant biomethane recovery is higher than 99.93% based on testing by certified laboratories on an ongoing basis. This is the highest biomethane recovery for a biogas upgrading plant in North America, maximizing farm revenue, and reducing harmful methane emissions to nearly zero.

HIGHER REVENUES WITH LOWER OPEX

In addition to reducing greenhouse gas emissions, upgrading to RNG has provided a reliable additional revenue stream to Threemile Canyon farms with minimal operating costs and maintenance time. Employees spend about 15 minutes per week maintaining the CAPure plant since start-up in 2019.

The CAPure plant has very low energy consumption compared to other upgrading technologies and returns 95% of the heat consumed via heat integration with the anaerobic digesters.



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PROJECT DATA

- Location: Boardman, Oregon
- Start of operation: 2019

ABOUT THE FACILITY

- Plant capacity: 3500 SCFM (6000 Nm³/h)
- Biogas feedstock: dairy manure
- Puregas CAPure upgrading technology with 99.934% biomethane recovery
- Farm recognized in 2020 for Outstanding Dairy Sustainability by Innovation Center for U.S. Dairy

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