

Rio Cuarto II

PROJECT INTRODUCTION

The biogas plant Rio Cuarto II was completed in 2018 and won the AD & Biogas World Biogas Expo Award 2020. It is operated by Biomass Crop S.A. (BC) near their bioethanol plant in Argentina. It is an industrial biowaste plant designed to process 130,000 tonnes per annum of thin stillage from corn-based bioethanol production. The thin stillage is delivered with high temperatures of around 65 °C and a low pH value and has other properties that are challenging for AD process. Krieg and Fischer Ingenieure designed AD system technology accordingly.

A continuous stirred tank reactor system was chosen for the digestion system. The standing, glass-coated steel fermenter with a capacity of 8,000 m³ with a central agitator is followed by a secondary fermentation tank with a double-membrane gas storage roof. The operation temperature is mesophilic. The facility's total biogas production is 900 m³/h, utilized for the production of renewable electricity and heat. The electrical energy produced is fed into the power grid. Heat is used in the nearby bioethanol plant.

The scope of services of Krieg & Fischer Ingenieure GmbH included the conception, preliminary, detailed and implementation planning, site management, commissioning and operator service of anaerobic digestion system.



Krieg & Fischer Ingenieure GmbH

PROJECT DATA

- Location: Rio Cuarto, Argentina
- Start of operation: 2018

UNIQUENESS OF THE PROJECT

- Integration of biogas and bioethanol production
- Use of thin stillage from ethanol plant for production of renewable energy
- Reduced consumption of fossil fuels (> 580 Nm³ / h natural gas saved by avoiding evaporation)
- Reuse of digestate from biogas plant in the ethanol plant
- Improvements and lower operating costs in bioethanol production (reduced consumption of water, energy, urea and other components) in cooperation with local developer Bioelectrica

For more information:

 www.kriegfischer.de/en/biogas-plants

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Huntstown Biogas Plant



Krieg & Fischer Ingenieure GmbH

PROJECT INTRODUCTION

The Huntstown biogas plant is state of the art anaerobic digestion plant located in Dublin. Designed to process 92,000 tons of waste annually, owned and operated by Energia Group, it is one of the biggest biogas plants in Ireland.

Following successful cooperation on UK JCBE DERBY Biogas Plant, this is the second AD project by Krieg & Fischer Ingenieure GmbH developed for the general contractor Jones Celtic BioEnergy. Plant is designed to process Municipal Solid Waste (42,000t/a of biowaste) and Source Sorted Organics (50,000t/a waste from supermarkets and restaurants). In two separate lines, the input flows are thermally hydrolysed under pressure (responsibility of JCBE) for hygienisation and reduction of the required digester retention time, followed by grit removal system and input material cooling and buffer tanks.

The anaerobic digestion system includes 4 fermenters with 4,900 m³ in volume each, 2 post-fermenters, a collective external gas storage, gas conditioning. Each of the six elevated tanks can be used as main fermenter, allowing for maintenance of individual tanks without disturbing the overall operation. Production of biogas is 1,700 m³ per hour. Biogas is utilised by 2 CHPs supplying 4,8 MWel of electricity per hour to the grid and heat for the offices.

PROJECT DATA

- Location: Dublin, Ireland
- Start of operation: 2019

UNIQUENESS OF THE PROJECT

- Pretreatment with Thermal Pressure Hydrolyses
- Grit removal systems
- Controlled substrate cooling to maintain digester temperature
- Each of the six elevated tanks can be used as main fermenter
- Temporary sand extraction without complete tank emptying
- External gas storage

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