

Biogas Plant PRINCE EDWARD ISLAND



Location:	Prince Edward Island, Canada
Construction Period:	2007-2008
Input:	Potato raw material, oil, potato starch
Fermenter:	Steel tanks, glass coated 4 x 5,500 m ³
Gas utilization:	Generation of process steam for potato-processing production (12.6 MWth, process steam)
Special Features:	Two-stage system (Hydrolysis & Digestion), Four digesters, two secondary digesters with gasholder roof, mesophilic operation and separation of digestate fiber

The PRINCE EDWARD ISLAND biogas plant in Canada is owned and operated by Cavendish Farms. The digestion plant is designed to process potato residues, oil and potato starch under mesophilic conditions. The plant consists of a reception hall, one hydrolysis tank, four primary digesters with central agitators and two secondary digesters with gasholder roofs. The annual capacity is 100,000 tonnes of waste. The fully automated feeding system consists of a storage container with screw conveyor, grinder and eccentric pump. The plant is designed as two-stage system, including an initial hydrolysis step. A decanter is used for solid/ liquid separation of the digestate. The separated digestate liquor is partly used for the dilution of the inputs and during the initial pulping phase. The digestate fiber is used as fertilizer. The majority of the digestate liquor is stored in a anaerobic-lagoon to allow for further degradation of COD. The biogas is used for heat generation (12.6 MW thermal, process steam), which is used in the potato-processing production. Start-up of the biogas plant was in January 2009. The full-load operation was reached in June of the same year.