



Exeter Agri-Energy	
Owner	Stonyvale Farm
Location	Exeter, Maine
Herd size	600 lactating dairy, 600 dry
Off-farm Substrates	DAF, SSOs, FOG
Design	
Digester Size	2 x 1500 m ³ mesophilic completely mixed digesters
Feedstock Handling	2 x 100 m ³ receiving tanks
Development Time	Feasibility Study by others 2010 USDA Grant Application submitted in June 2010 Biosim [®] Feedstock Assessment in December 2011 Design completed during Winter/Spring 2011 Construction completed in August 2011 Gas production begins in December
Process Volume	120 m ³ /day
Retention Time	25 days retention time
Gas Volume	500 m ³ /hr
Electrical Production	984 kW producing approximately 8,000 MW annually
Digestate Volume	105 m ³ /day
Background	
<p>Stonyvale Farm is a third generation farm located in southern Maine with 8 members of the family involved with the farm and biogas system. The family was motivated to add value to the farm and had researched co-digestion as a feasible and sustainable option to augment their existing operation.</p> <p>CH Four Biogas was chosen due to its extensive experience with farm based biogas systems and the incorporation of mixed substrates. The company was contacted in July 2010, and a feedstock assessment was completed in December 2010.</p> <p>With the positive results of a previously conducted feasibility study as well as the findings of the CH Four Biosim[®] feedstock modeling, Stonyvale Farm decided to proceed with the project. The system design was finalized in the Spring of 2011 and the construction of the project was started in August of that same year. The system started to produce biogas in December 2011 with commissioning being completed in March 2012. The system performs well beyond its originally anticipated capacity and produces 8,000 MW of electricity annually.</p> <p>In retrospect, as this was the first system of its kind in the state of Maine, there were some regulatory hurdles that needed to be overcome such as the onerous process of grid connection. On the other hand, the project also received much appreciated support from USDA as well as representatives from local authorities.</p> <p>Having the biogas project has had an immediate positive impact on Stonyvale Farm as it has opened doors for new business, both in farming and in organic resource management as well as improved the overall operation of the existing farm. The project was taken from idea to realization in a relatively short time frame, which is attributed to a dedicated and motivated developer pairing well with an experienced design and construction team.</p>	