

# Biomass Appendix

## Examples of Biogas Generators Using a Variety of Inputs



**Figure 1**

Location: Shafter, Calif.

Project: 90 kW Digester Gas-Fired

Co-generator: Micro turbine (3 x 30 kW)

Year: 2004

Input: sewage

Co-generator: Micro turbine, 4 x 30kW

Designer: Calpwr



**Figure 2**

Location: Devon, England

Project: 90 kW Digester Gas-Fired

Co-generator: Micro turbine (3 x 30 kW)

Year: 2005

Input: cattle manure, abattoir and food  
processing waste

Designer: Rutherford Renewables



**Figure 3**

Gasification plant in Växjö, Sweden for the production of bio-hydrogen and dimethyl-ether (DME), a cleaner-burning synthetic vehicle fuel, from biomass. More than 50 percent of Växjö's energy is from renewables, making it what many consider to be the world's cleanest city.

**Figure 4**  
Location: Saskatoon, Canada  
Year: 2003  
Input: Manure, potatoes  
Digester: Steel tank, 2 000 m<sup>3</sup>  
Co-generator: Micro turbine, 4 x 30kW  
Designer: Krieg & Fischer  
Source of this and following items:  
Electrigaz, [http://www.electrigaz.com/company\\_en.htm](http://www.electrigaz.com/company_en.htm)



**Figure 5**  
Location: Fakler, Germany  
Year: 2005  
Input: Corn, grass and wheat silage  
Digester: Concrete tank, 1 045 m<sup>3</sup>  
Co-generator: Gas engine 250 kW  
Designer: Krieg & Fischer

**Figure 6**  
Location: Hofgut Holland, Germany  
Year: 2004  
Input: Pig dung, turkey dung, grass and corn silage  
Digester: Concrete tank, 350 m<sup>3</sup>  
Co-generator: Gas engine 60 kW  
Designer: Krieg & Fischer





**Figure 7**

Location: Brahm, Germany

Year: 2004

Input: Pig Manure, Kitchen Waste, Fats, Grain

Digester: Concrete tank, 1 205m<sup>3</sup>

Co-generator: Gas engine 2 x 190 kW

Designer: Krieg & Fischer



**Figure 8**

Location: Bluemel, Germany

Year: 1994/1995

Input: Biowaste, separately collected in households

Digester: Concrete tanks, 2 x 800 m<sup>3</sup>

Co-generator: dual fuel co-generators, 2 x 160 kW

Designer: Krieg & Fischer



**Figure 9**

Location: Barz, Germany

Year: 1996-1998

Input: Manure, kitchen waste

Digester: 2-stage-concrete tank, 200 m<sup>3</sup> and 230 m<sup>3</sup>

Co-generator: Dual fuel co-generator, 45 kW

Designer: Krieg & Fischer