

## Anaerobic Digestion of Livestock Manure and Organics

Kara J. Steward, Washington Department of Ecology

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*Abstract:* The 2009 Washington State Legislature passed Substitute Senate Bill 5797 which provides an exemption from obtaining a solid waste handling permit for some manure anaerobic digesters. Ecology recently published guidelines for operating an anaerobic digester under the permit exemption conditions. Ecology will be working closely with jurisdictional health departments and the State Departments of Agriculture and Health to provide oversight and technical assistance for these operations. This presentation will provide an overview of the human health and environmental concerns of co-digesting manure with other organic wastes. Collaboration and segregation of responsibilities between Ecology, Agriculture, and jurisdictional health departments will also be explained.

Anaerobic digestion of livestock manure is steadily increasing across the United States. A recent EPA survey identified 135 manure digesters on farms across the US, with over 75% on dairy farms (<http://www.epa.gov/agstar>). Increasing demand for renewable energy production continues to provide interest in anaerobic digestion of manure.

Anaerobic digestion is the process where organic materials are biologically broken down in the absence of oxygen (the aerobic process is composting). This biological process produces a gas, principally composed of methane and carbon dioxide. The methane gas can be used to generate power for sale to a local utility as "green power." Solids and liquids from the anaerobic digestion process are reused on the farm or sold for other uses.

There are currently three operational anaerobic digesters at dairies in Washington, with several more coming online in the near future. Manure digester operations are interested in co-digesting manure with other organic wastes (for example, food processing, cafeteria, or grocery store wastes) as a way to realize more economic benefits. Co-digestion of manure with other organics increases methane production resulting in the sale of more energy and carbon credits. The farm also receives revenue from the delivery of the organic wastes.