



Clean, premium fertilizers from biosolids

**THE PROBLEM**

Biosolids pose significant challenges for wastewater treatment plants. Transportation costs for disposal are extremely costly, with the bulk of the cost resulting from the high water content of the material; similarly with land application, transportation is limited due to the costs associated with transporting a material with a high water content. Furthermore, as the population increases, land available for application continues to dwindle, leaving municipalities with few options and growing demand.

Each year, an estimated 7 million tons of biosolids are produced in the U.S. alone.<sup>1</sup>

If 15% of that was landfilled, at an average cost of \$35/Ton, that would cost municipalities \$36,750,000 for landfilling each year.

**THE SOLUTION**

The sustainable reuse of municipal biosolids as a fertilizer product or soil amendment offers a multitude of benefits, both economically and environmentally; the recycling of biosolids creates a revenue stream where waste management costs were once incurred. Additionally, biosolids are rich in macro and micronutrients and organic matter, a valuable commodity considering much of the world's soils are depleted of such components.

FEECO is a leader in process design and equipment manufacturing and can offer a unique perspective on the granulation of biosolids based on our decades of experience in granulating organics into marketable products. Our granulation systems are extremely customizable and produce a premium granular fertilizer product\*\* that minimizes odor and has little attrition.

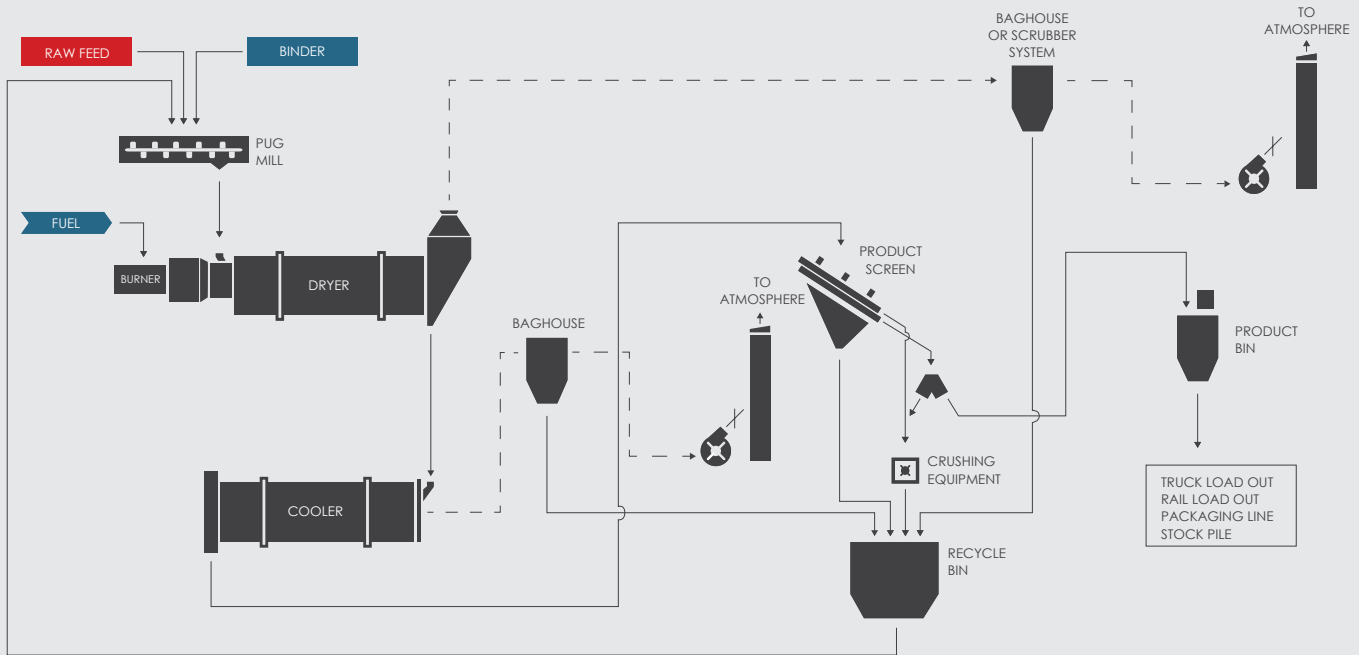
The technologies mentioned here are proven, and backed by our international reputation in providing the best in fertilizer production equipment and complete process systems. Some of our customers are listed at right.



\*\* When heavy metal thresholds are below the set standard in the raw material, fertilizer produced through a FEECO granulation system goes beyond EPA qualifications for pathogen destruction for a **Class A Biosolid**. (According to the EPA's 503 regulations)

## MIXER-DRYER GRANULATION

The FEECO Mixer-Dryer method of granulation is a proven method world-wide. In this process, granulation occurs in the mixer, usually a [pin mixer](#) or [pugmill mixer](#). Granules are then dried and “polished” in a [rotary dryer](#). This approach yields rounded granules.



## BENEFITS TO GRANULATING BIOSOLIDS

### Improved Product Handling

Granules are more easily handled, transported, and applied.

### Reduced Waste Management Costs

Dry granules are much less costly to transport than raw biosolids, because of the reduced moisture content.

### Reduced Runoff

Dry granules aid in the prevention of runoff, because they are used only as needed, and do not add additional moisture to the soil.

### Premium Product

Additives can be included in the process to create custom products and fertilizer blends, allowing the product to be tailored to specific soil needs and nutrient management programs, or to be sold as a premium product.



### Additional Source of Revenue

In addition to reduced waste management costs, a granular fertilizer product can provide an additional source of revenue.

### Enhanced Nutrient Management

Granular fertilizer makes it easier to effectively follow and monitor application rates for a nutrient management program. It is also a valuable tool in precision agriculture applications, where a granular product provides improved dispensing capabilities.

SOURCES:

1. "Biosolids FAQ." *State of Washington Department of Ecology*. Web. May 2016.