
# From Good Intentions to Energy Generation

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*By Colleen Ruhter, F&S Safety and Compliance*

Did you know just 60-70 percent of food in the United States is actually eaten? The other part is wasted – either during production, distribution, preparation (peeling, chopping), or is simply not eaten by the consumer.

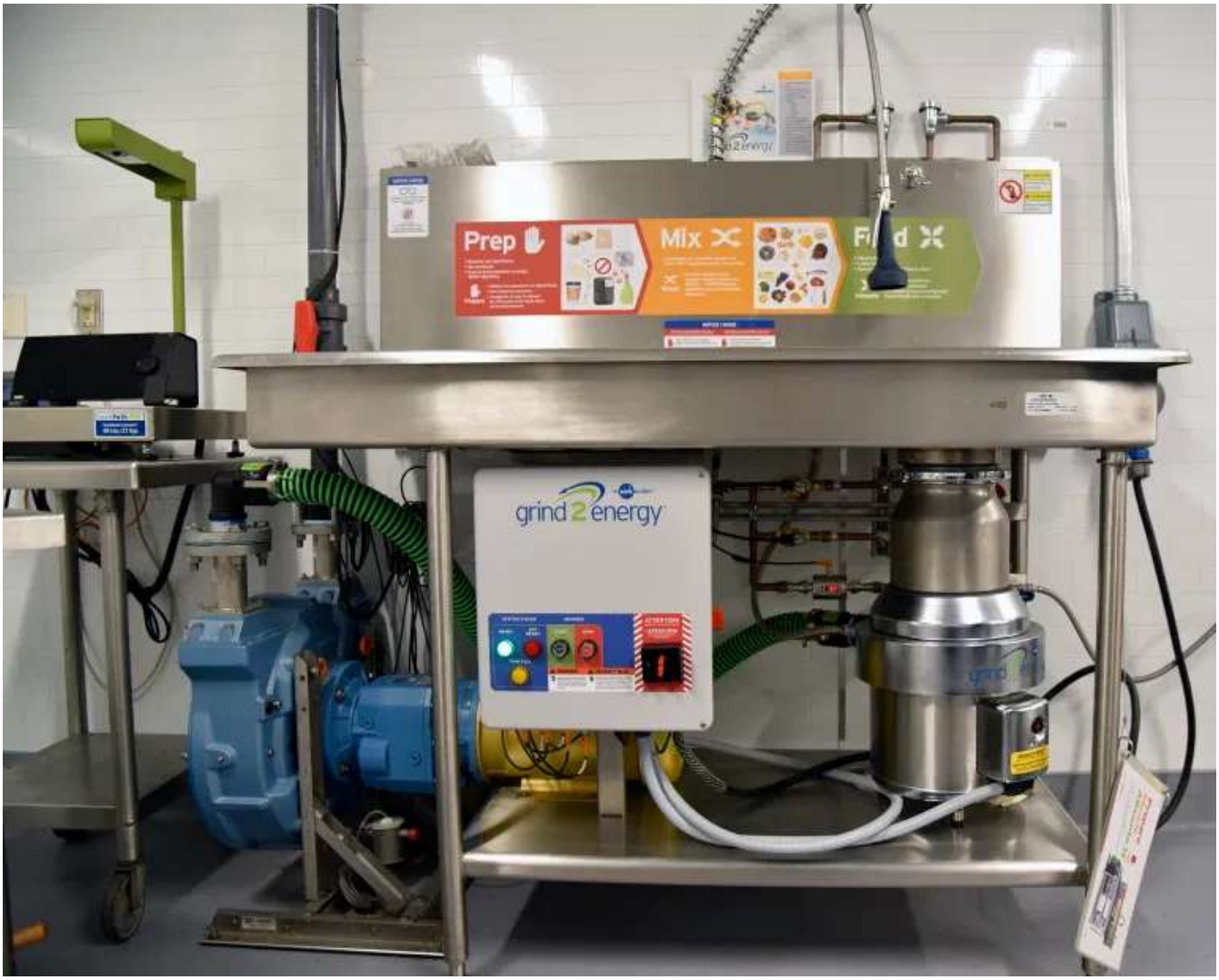
At Illinois' six main dining facilities, over 3,500 pounds of food waste per day is generated (from loss during preparation and what is not eaten by the consumer). That's over 1 million pounds per year, enough to fill a 2,500-square-foot house, with 8-foot high ceilings.

What can be done with all that waste? Most households just throw it in the trash. In 2013, University Housing, responsible for the dining halls, chose to try to do the same, just on a larger

scale. Food digester systems were purchased and installed at each dining hall. Food digesters use microbes to “eat” the organic waste, producing grey water which goes to the sewer. Previous to the digesters, food waste was sent to the landfill.


Sending food to UCSD isn’t all that bad for traditional homes, but the highly-concentrated waste from Housing was not environmentally friendly. The waste was actually about 10 times stronger than normal sewage, which required significantly more resources to treat and clean and could potentially result in regular fines. UCSD met with university leadership to recommend a change in digesters in order to maintain environmental and fiscal responsibilities.

Housing led the way to make a change in operations, so they collaborated with F&S Utilities & Energy Services, Operations, Maintenance & Alterations, and environmental compliance. The committee researched various food waste options, including composting, pulpers, and grinder systems used for anaerobic digestion.




The team researched other options, including Grind2Energy systems. These operate similarly to an industrial garbage disposal. However, it uses significantly less water than the digester system, up to 90-95 percent less. Additionally, it does not send the waste directly to the sanitary sewer. The food waste is pumped into a 5000-6000 gallon tank located on the outside of the building it serves. A tanker truck empties the waste and takes it to the local sanitary district. The industrial-strength waste is processed in an anaerobic digester, where it undergoes treatment without oxygen. The methane produced is collected and used to generate electricity at the treatment plant.

This change in technology means Housing food waste is no longer discharged to the sanitary sewer system, avoiding the $1.5 million permit fee (plus any potential fines). Moreover, the significant reduction in water use helps the university meet the overall sustainability goals outlined in the Illinois Climate Action Plan (iCAP). An additional feature of the Grind2Energy system is an easy-to-use online and real-time dashboard for monitoring usage, with data available for food waste, water usage, peak usage, and monitoring the tank level for hauling. The university hopes real-time data will help further reduce the overall food waste generated on campus.

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