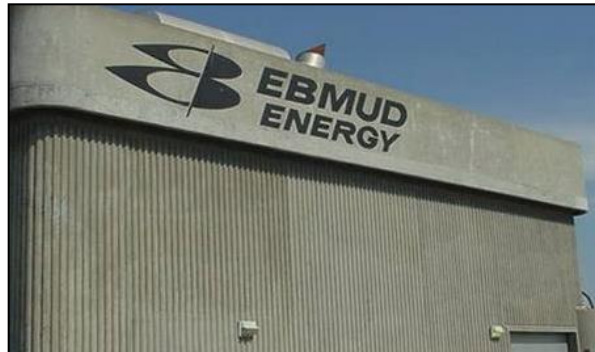


Rethinking Wastewater Facilities as: Net Energy Producers

Ben Horenstein
Director of Wastewater

Presented at:
**Energy and Water Nexus
Summit 2**



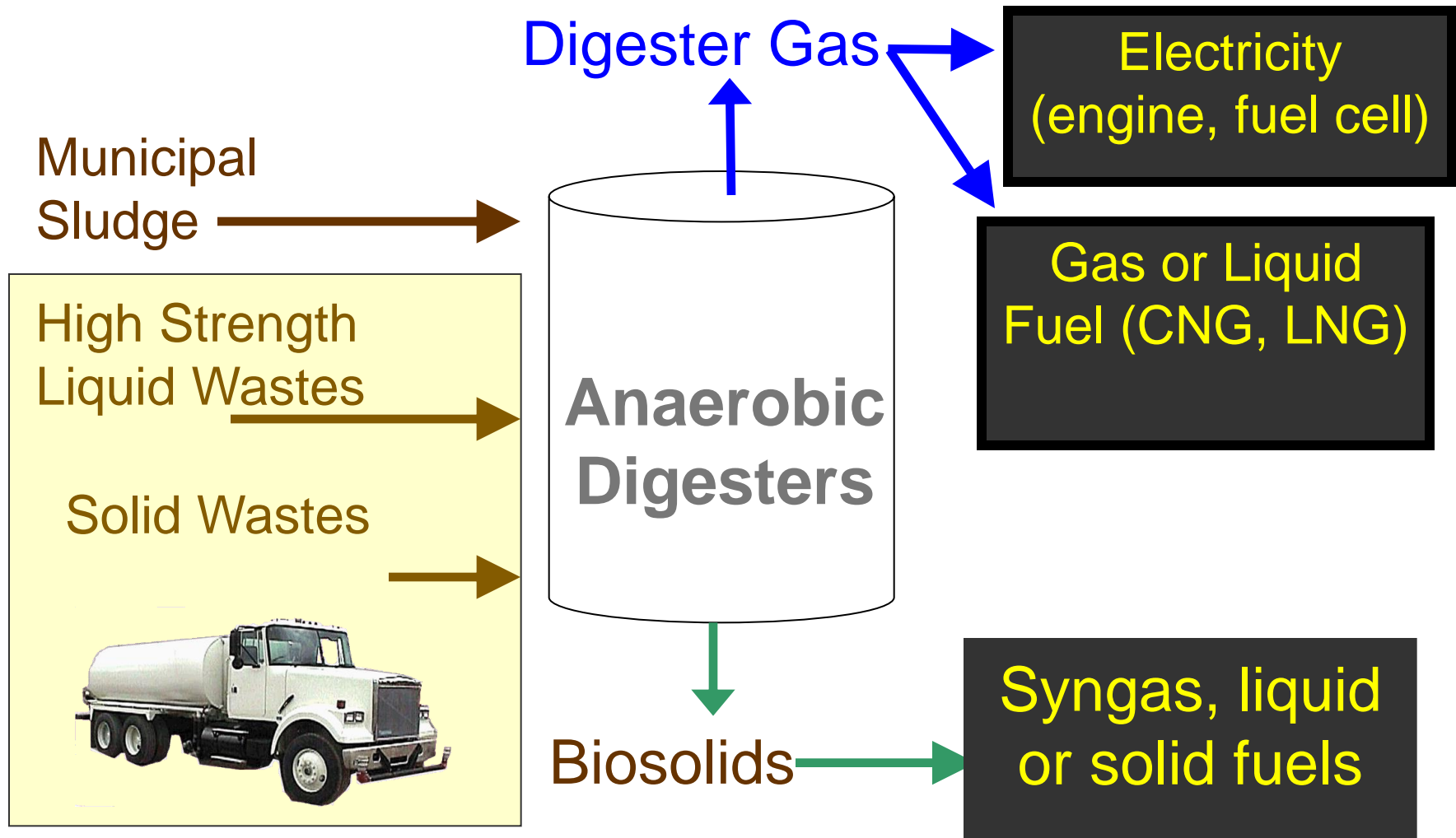
September 12, 2013

Reinventing a WWTP

- An Emerging Role for WWTPs
 - Historically: A protector of public health and environment
 - New Role: A provider of renewable energy and related products
- Driving Forces
 - Sustainability focus
 - Environmental stewardship
 - Economic benefits



Waste to Energy Scenarios



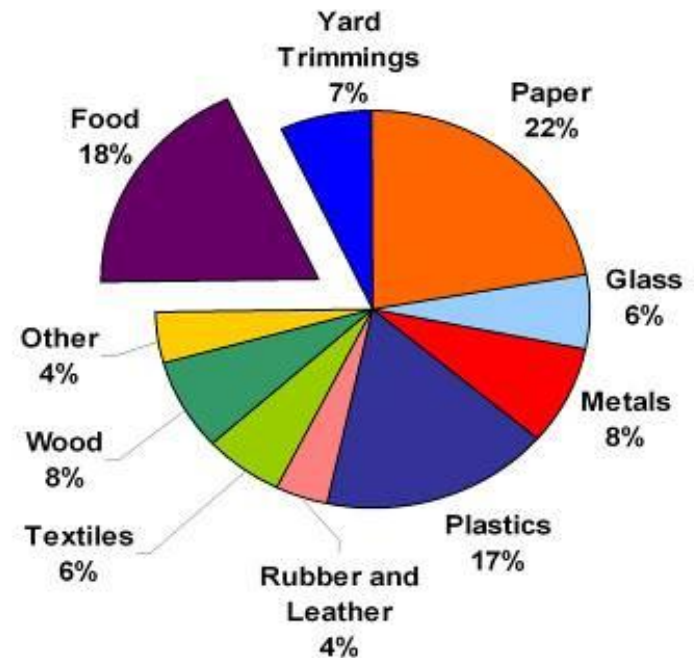
Food Waste

- Food waste is the second largest category of municipal solid waste to landfills

- Less than 3% currently diverted
- Diversion from landfill conserves space and reduces GHG emissions

- Anaerobic digestion of food waste → renewable energy

Municipal Solid Waste Sent to Landfill, 2007



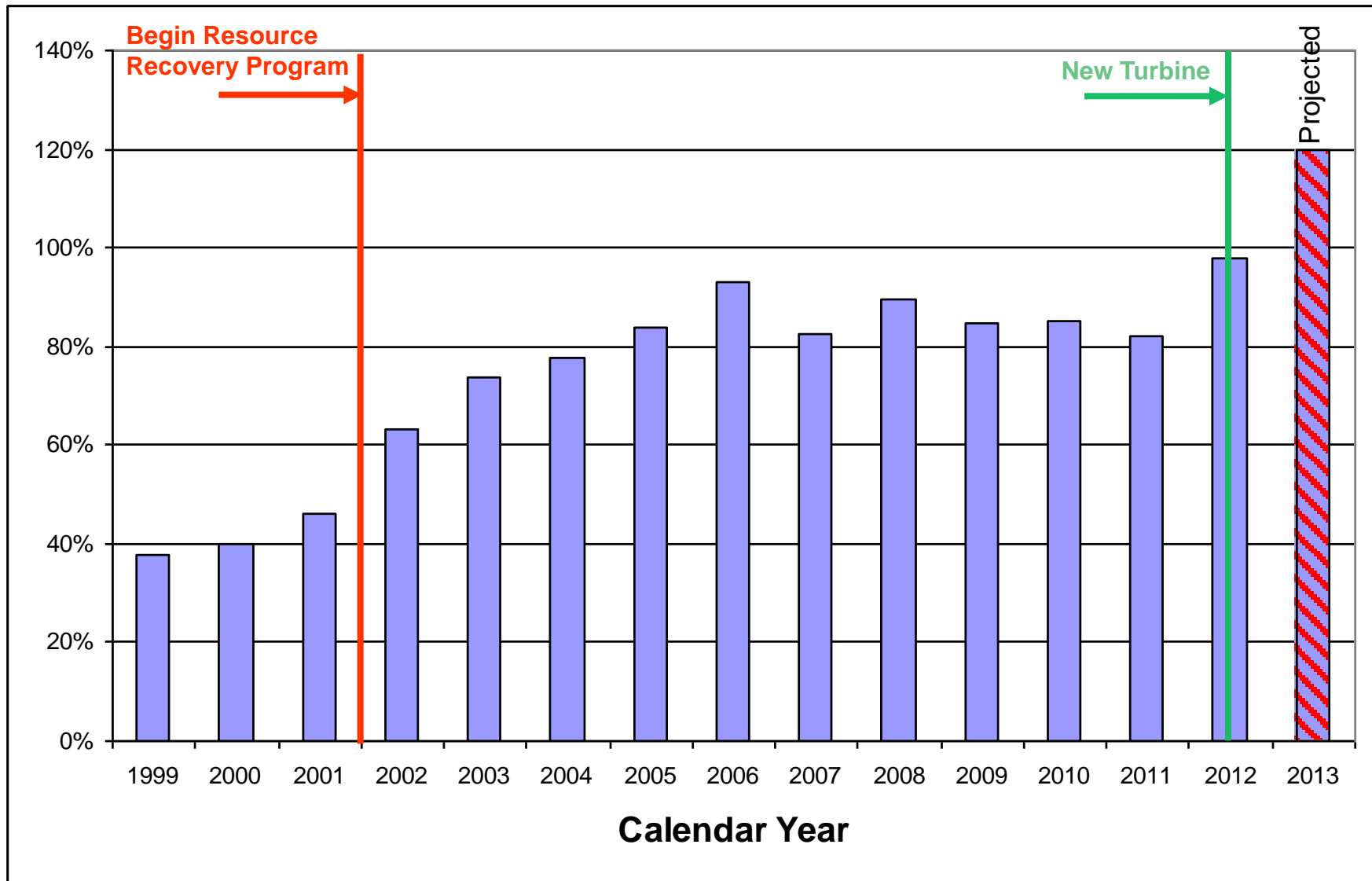
Commercial Food Waste Challenges Contamination



Food Waste Delivery



Percent of Plant Power Demand Met by On-site Generation



First WWTP in U.S. to Become a Net Electricity Provider



Net Electricity Provider



Electrical
Grid



Wastewater
Treatment Plant

2013 to-date

Generation: 6MW

Demand: 5MW

Net Sales = 1MW

Looking Forward

- 1% of CA energy demand is for wastewater treatment
- Many WWTPs have infrastructure in place to implement resource recovery
- Emerging regulations (e.g., nutrient removal) may increase energy demand
- Innovative technologies now being tested (e.g., nutrient harvesting) may mitigate some/all increase in energy requirements

