EAST BAY MUNICIPAL UTILITY DISTRICT

EBMUD Food Waste Initiative

EPA Sustainable Materials Management

March 12, 2015

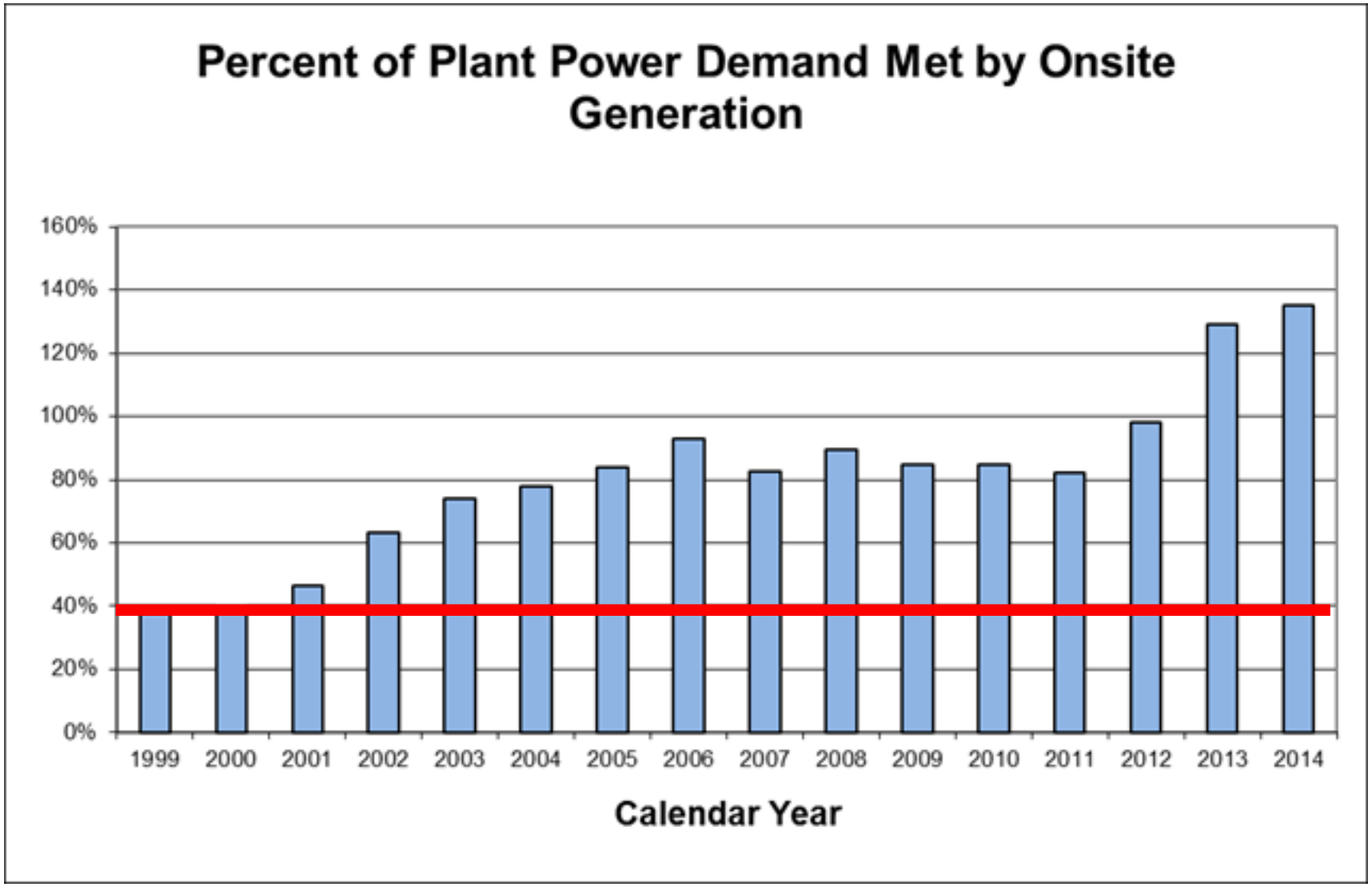
Presentation Overview

- Background
- Why Food Waste?
- Food Waste Pre-processing
- Regulatory Oversight
- Next Steps

Background

- EBMUD has excess digester capacity
  - Plant originally designed to accept waste from 20 canneries in the service area
  - Now there are zero canneries
  - Capacity to treat 168 million gallons/day
  - Average influent flow is 60 million gallons/day

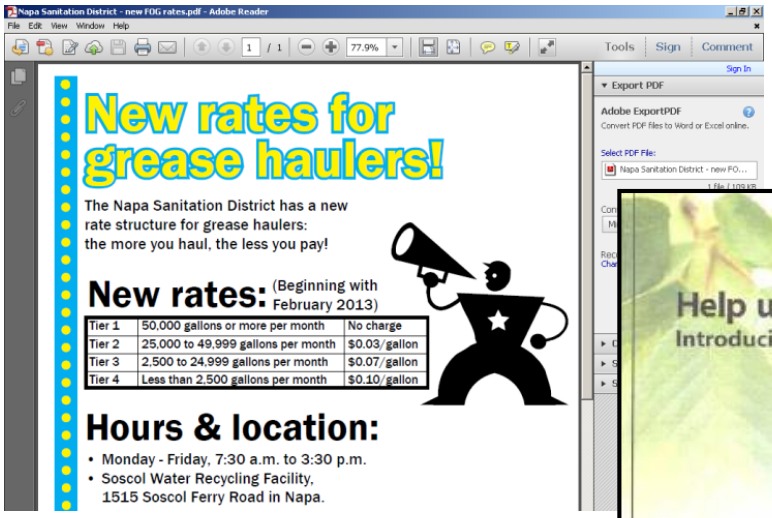
Background: Power Production



Background: Changing Market Conditions

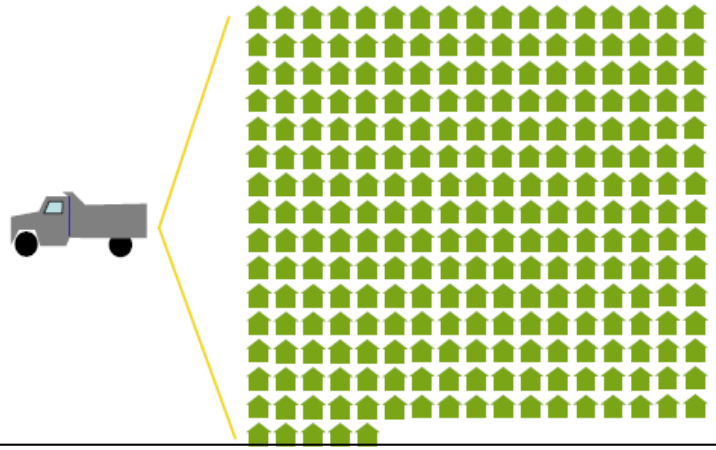
- Increasing energy prices
- Government subsidies/incentives for renewable energy initiatives
- Political focus on GHGs and Climate Change

Increased recognition from potential competitors of the energy value of organic wastes



Why Food Waste?

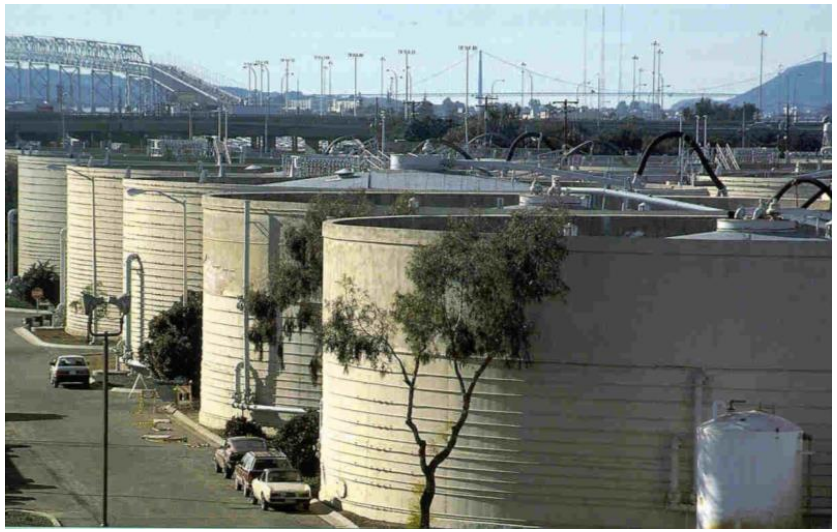
- High energy potential
- Represents a large percentage of solid waste stream to landfill
- Diversion from landfill through food waste digestion
- Digestion may be the highest and best use of food waste



1 truck/day will power 260 homes

Why Food Waste?

- One digester can process ~ 200 ton/day of food waste
- Digester gas to be converted into renewable energy
- 200 ton/day of food waste ≈ 2 MW of energy



Energy Generation

EBMUD Food Waste Pilot History

- 2005: Begin to accept small amounts of food waste
- 2006: Reliable acceptance of 20 tons of food waste per week

- 2011: Contract signed with Recology
- 2014: Oakland votes to send commercial food waste to EBMUD

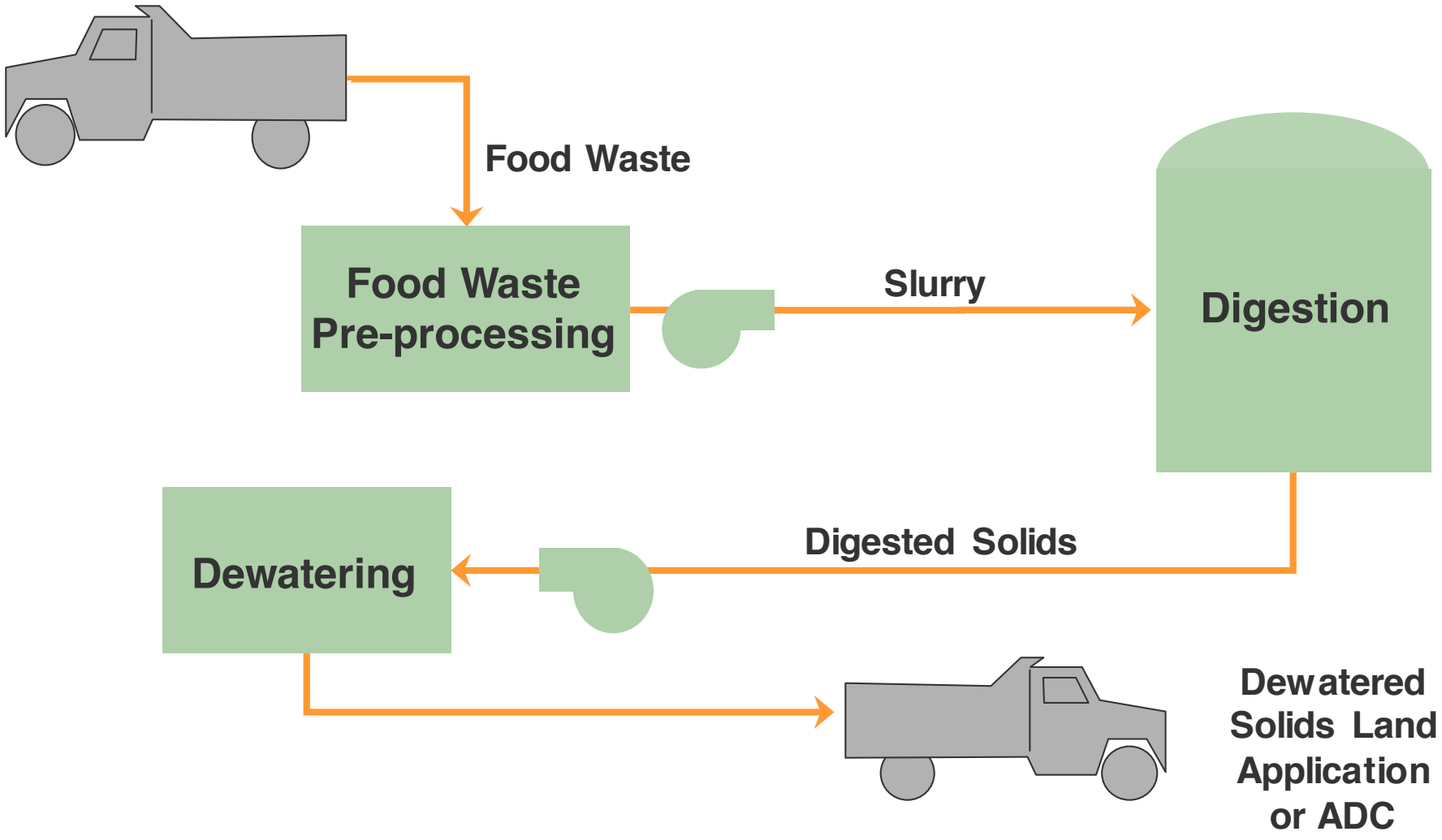
Benefits of Food Waste Digestion

- Local and sustainable digester feed stock
- A renewable energy source
  - High energy value: 1 truck/day (i.e. 20 tons/day) will power 260 homes
  - Potential renewable energy and greenhouse gas credit opportunities
- Supports state goals:
  - CARB / AB 32 - GHG emission reductions
  - CPUC and CEC - Renewable Portfolio Standard
  - CalRecycle – Zero Waste California

Food Waste Challenges

- Contaminants
  - Nature of contamination
  - Variability in control of the waste stream
- Processing technology still evolving
- Permitting
  - No existing regulations fit
  - Current best fit: Biosolids Composting at POTW

Food Waste Processing Schematic



Pre-Processing System

- Near Term – 10 tons/day clean ground CCCSWA material ; RFP process underway for large scale facility
- Long Term - larger scale pre-processing facility ~ 200 tons/day
- Pre-processing system will produce an organic food waste slurry material for digestion and dewatering

Segregation of Food Waste

- Value in segregation of food waste from municipal biosolids
  - Polymer use
  - Isolation of impacts
  - Re-use alternatives for remaining solids
- Near Term Co-Digested Biosolids Uses
  - 50% to land application
  - 50% to ADC

Regulatory Oversight

- Acceptance of new waste types has exposed EBMUD to regulatory oversight by new agencies—CA Dept. of Food and Agriculture (CDFA) for FOG wastes and CalRecycle/Local Enforcement Agency for food waste.

- EBMUD is working, along with others in the state, to address appropriate regulatory pathway.

- EBMUD operations are currently regulated under an existing NPDES program framework administered by the State Regional Water Boards.

The Future - Food Waste

- Commercial Food Waste
  - Bay Area generates approximately 1,700 tons/day
  - Sustainable, local, high methane value feed stock
  - Working to expand pilot with long-term (10+ year) contracts
  - Significant interest from local communities in regards to landfill diversion and renewable energy
  - Potential for green house gas emission credits via destruction of methane gas (as compared to alternative)

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