



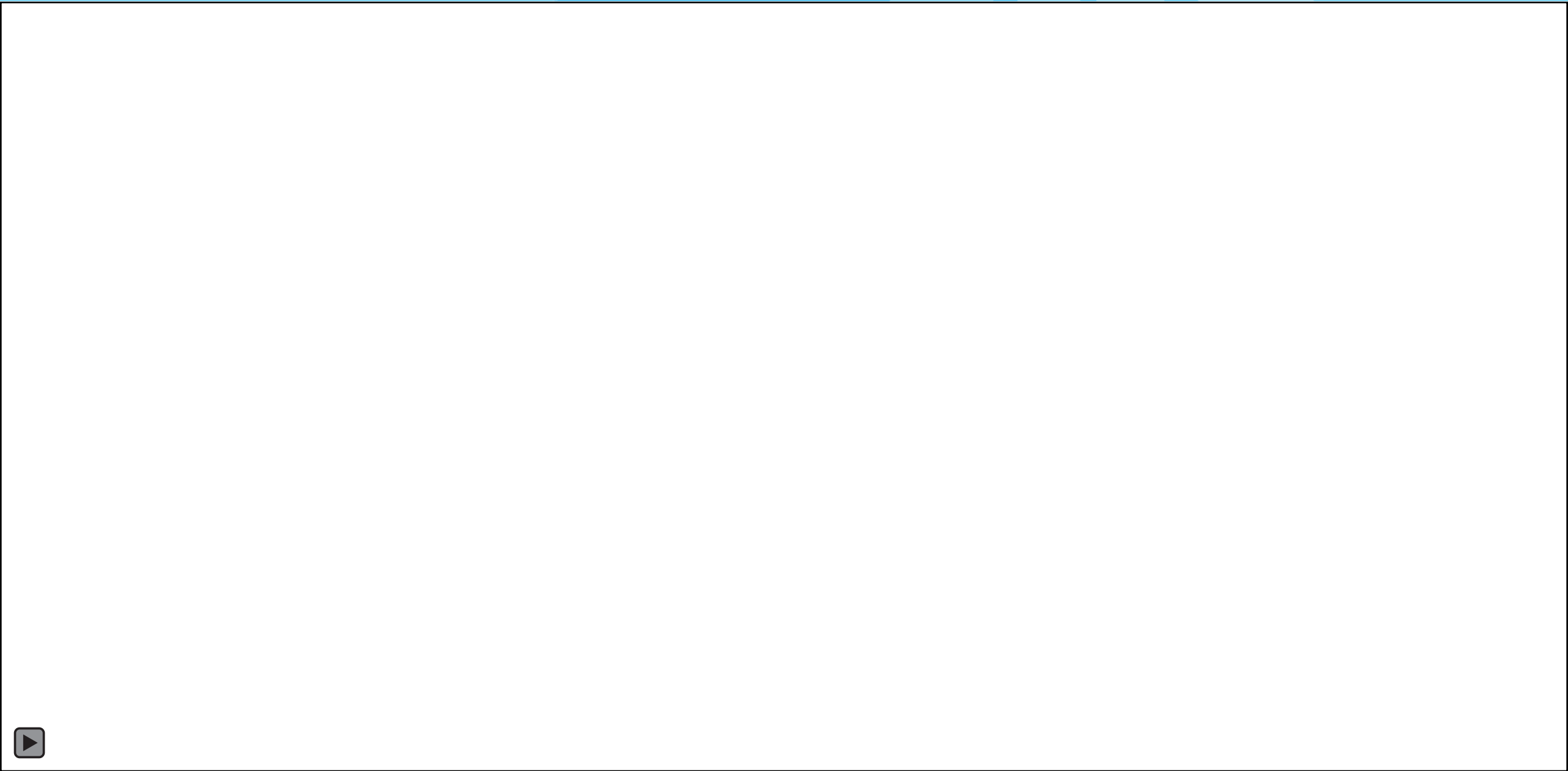
Quantum Biopower

Facility and Business Update



Leading A Recycling Revolution





Quantum Biopower

Founded in 2013, privately owned – Design/Build/Construct/Operate



Integrator of advanced waste & recycling to energy systems.
Owners of the Southington, CT digestion facility.



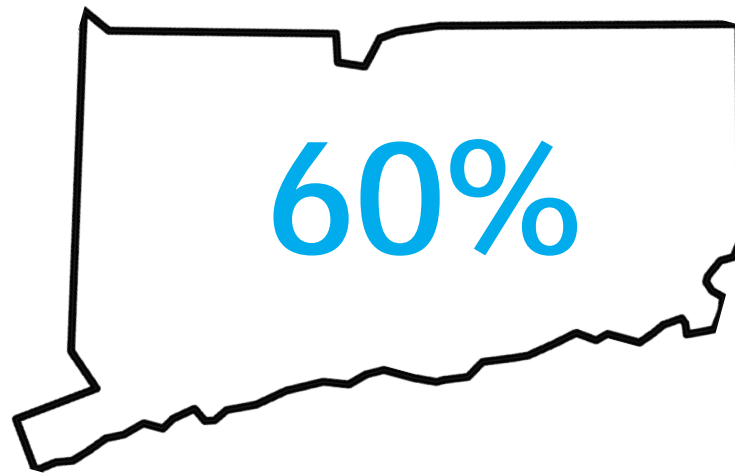
The Connecticut Example

Diversion Programs are Taking Hold in the Northeast, West Coast, and Beginning in the Southeast

CT's 2015 Waste Characterization Report found:

- CT manage **2,300,000** tons of garbage in CT
- **22%** of CT's garbage is food waste; **500,000** tons of food waste generated per year
- Food waste is the largest portion of CT's waste and the least recycled

CT currently
diverts/recycles 32%
of its waste; reduce,
reuse, or recycle



In 2013 the State made a
goal to reach 60% by
2024. Recycling Food
Waste alone will achieve
CT's goal

Adoption of Food Diversion in CT

Now that Quantum's facility is operational, food diversion is happening, albeit, slowly



Generator



Food Separation



Mandate



Hauler



Food Recycling
Center

Food Waste Update:

- Universities, hotels, convention centers, food manufacturers, grocers, restaurants
- Why? – Right thing to do, vector elimination, food safety, sustainability metrics, cost savings
- Food waste geography is expanding – within the diversion radius, outside of radius, and out of State

Primary Operations of the Digester Project



Decontamination/De-packaging

Pulp & emulsify food waste/contamination removal (8-12% solid)

Digestion/Biogas Creation

2-stage digester, biogas collection sphere

Biogas Conditioning & Combined Heat and Power

Drying & H₂S removal & energy creation

Nutrient Recovery & Removal

2-stage digester, biogas collection sphere

Operation's of Quantum's Southington Facility

- Q1 – Inoculated and began bringing in food waste material
- Shakeout period
- Q2 – Ramp up phase & biological maturity
- Strong biogas production; roughly 45% of plant design
- Achieving milestones; month 6 of a 9 month commissioning process



FOOD WASTE



PRE/POST CONSUMER



PACKAGED WASTE



FATS/OILS/GREASES



DAIRY



BEVERAGE

