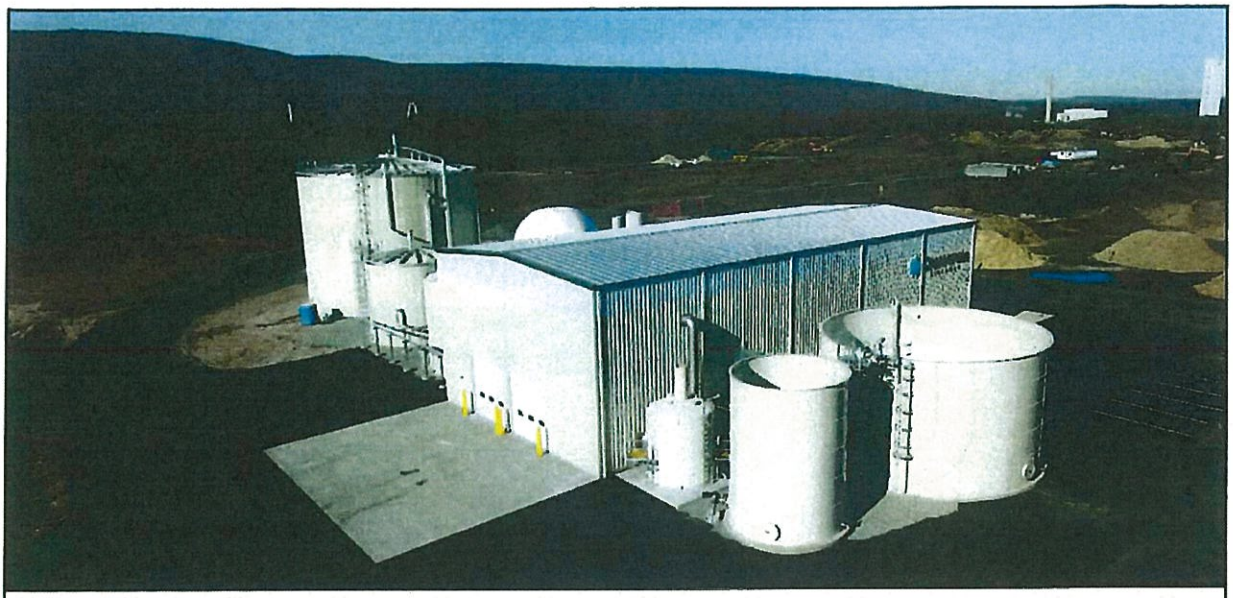


Connecticut's First Anaerobic Digestion Facility

QUANTUM BIOPOWER

Brian Paganini – Vice President

The Garbage Problem in Connecticut

In the 80's

- Connecticut was forward thinking and began a process of shifting from land-filling to incinerating waste.
  - Incineration produces energy from waste and poses less risk to ground water than landfilling

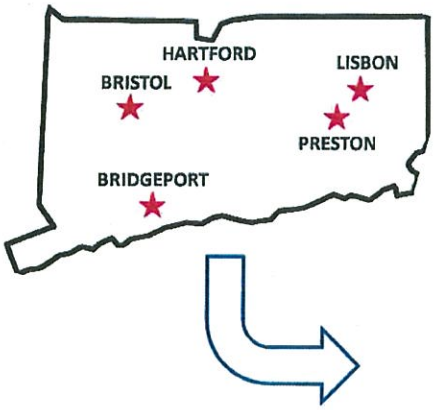
30 Years Later

- Connecticut's policy succeeded – all but one landfill closed
- Today, our WtE plants are nearing the end of their useful lives

Moving Forward

- Policymakers have a unique opportunity to lay out a vision for a Next Generation waste management infrastructure
- The Environment and Energy Committees must work together to articulate a vision that will:
  - Provide sufficient in-state disposal capacity
  - Reduce the state's dependence on incineration
  - Be cleaner and more sustainable
  - Provide residents with reliable, economical disposal options
  - Ensure a source of local jobs and economic growth

Connecticut's Existing WtE Capacity



Greater than 80% of Connecticut's WtE capacity is 30 years old

PLANT	MW	PER DAY	PER WEEK	PER YEAR	IN SERVICE YEAR
LISBON	15	500	3,500	182,000	1995
MID CONN	90	2,800	19,600	1,019,200	1988
SECONN	18.4	689	4,823	250,796	1991
BRISTOL	16.3	650	4,550	236,600	1988
BRIDGEPORT	67	2,250	15,750	819,000	1988
	206.7	6,889	48,223	2,507,596	

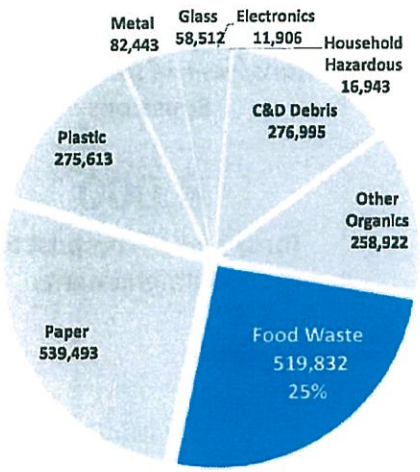
Reducing Connecticut's Dependence on Incineration:

Source Separation

- **Incineration is still the only viable, cost effective technology for mixed municipal waste**
- **Cleaner technologies like anaerobic digestion, and future waste technologies, like gasification and pyrolysis, offer significantly improved emissions profiles but require clean, consistent waste streams**
- **Making cleaner energy requires cleaner fuel (waste)**

Diverting Food Waste to AD

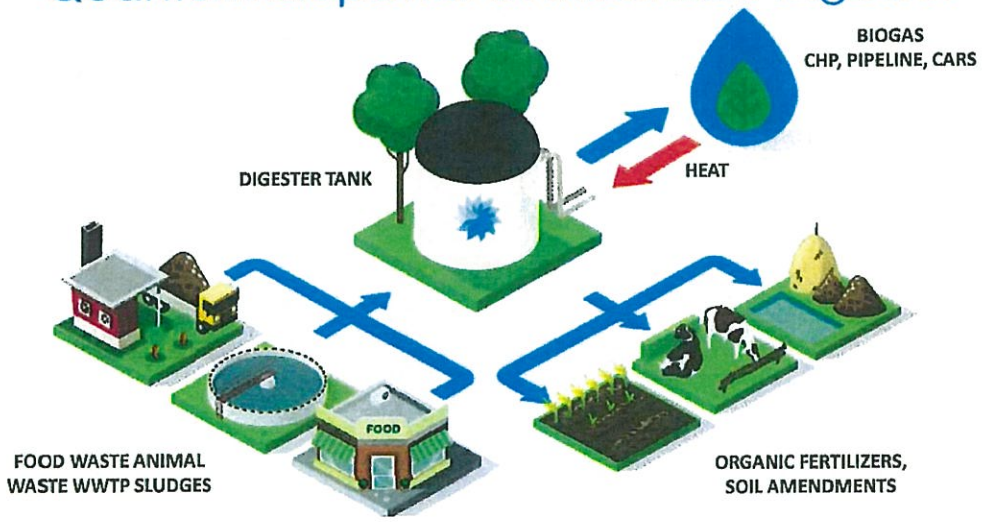
2.5MM Tons/Year



Diverting waste to anaerobic digestion would:

- Reduce our dependence on incineration by up to 25%
- Equivalent to half the capacity of the MidConn plant or both SECONN and Bristol
- Remove the heaviest constituent waste from the waste stream
- Create a post recycled waste stream for incineration (without food waste)
- Increase efficiencies of WtE plants
  - Food waste is larger comprised of water

Quantum Biopower's Anaerobic Digester



Quantum Produces

40,000
Tons/year of food waste processed

1.2MW
of Class 1 Power per hour

1MM BTU's
of Heat per hour

5,080
Tons/year of avoided CO_2 Emissions

8,000
Tons/year of compost and soil amendments

If We Digested all the Food Waste in CT

500,000
Tons/year of food waste processed

11MW
of Class 1 Power per hour

10MM BTU's
of Heat per hour

6,625,000
equivalent gallons of gas

63,500
Tons/year of avoided CO_2 Emissions

100,000
Tons/year of compost and soil amendments

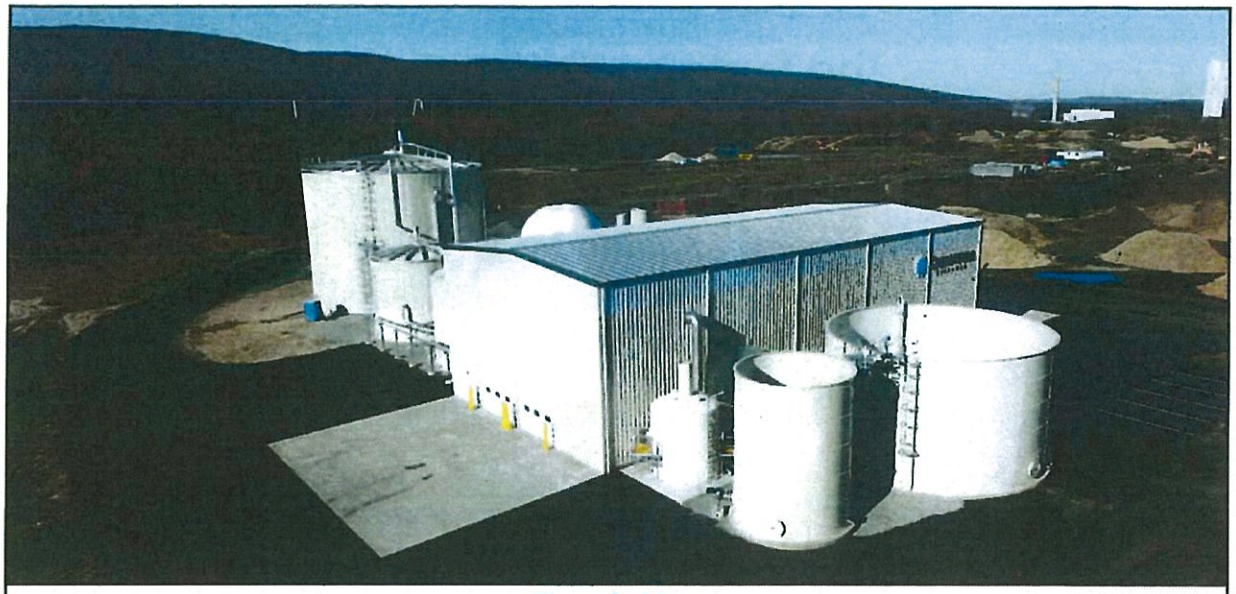
Action

Energy Committee

- Anaerobic Digestion
  - What energy should be produced – Electricity or Renewable Natural Gas?
  - If RNG, for trucks or pipeline injection, or both?
  - Energy & REC procurements for AD or new, similar agreement for RNG

Environment Committee

- Reduce the source separation threshold to ½ ton/week in 2022 and ¼ ton/week in 2024
- Do not allow ban of compostable grocery bags
  - Compostable bags are a critical tool for education and a major component of the process of separating food waste.
- Provide municipal incentives for curbside collection
- Require haulers to offer food waste pickup OR provide information on how to receive services
- DEEP Permitting – must be a maximum application review period, or a not to exceed.



Thank You

Brian Paganini – Vice President
bpaganini@quantumbiopower.com