

Clean Energy States Alliance Webinar

Converting Food Waste to Energy

Hosted by
Warren Leon, Executive Director, CESA

May 12, 2014

Housekeeping



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Submit your questions at any time by typing in the Question Box and hitting Send.

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www.cesa.org/webinars

About CESA

Clean Energy States Alliance (CESA) is a national nonprofit organization working to implement smart clean energy policies, programs, technology innovation, and financing tools, primarily at the state level. At its core, CESA is a national network of public agencies that are individually and collectively working to advance clean energy.

Today's Guest Speakers

Amy Barad, Organics-to-Energy Project Director, Massachusetts Clean Energy Center

James Doucett, Deputy Director, Massachusetts Department of Environmental Protection

Dean Foor, CEO, JC-Biomethane, LLC

Matt Krumenauer, Senior Policy Analyst, Oregon Department of Energy



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Food Waste to Energy in Massachusetts

Bringing Everyone to the Table

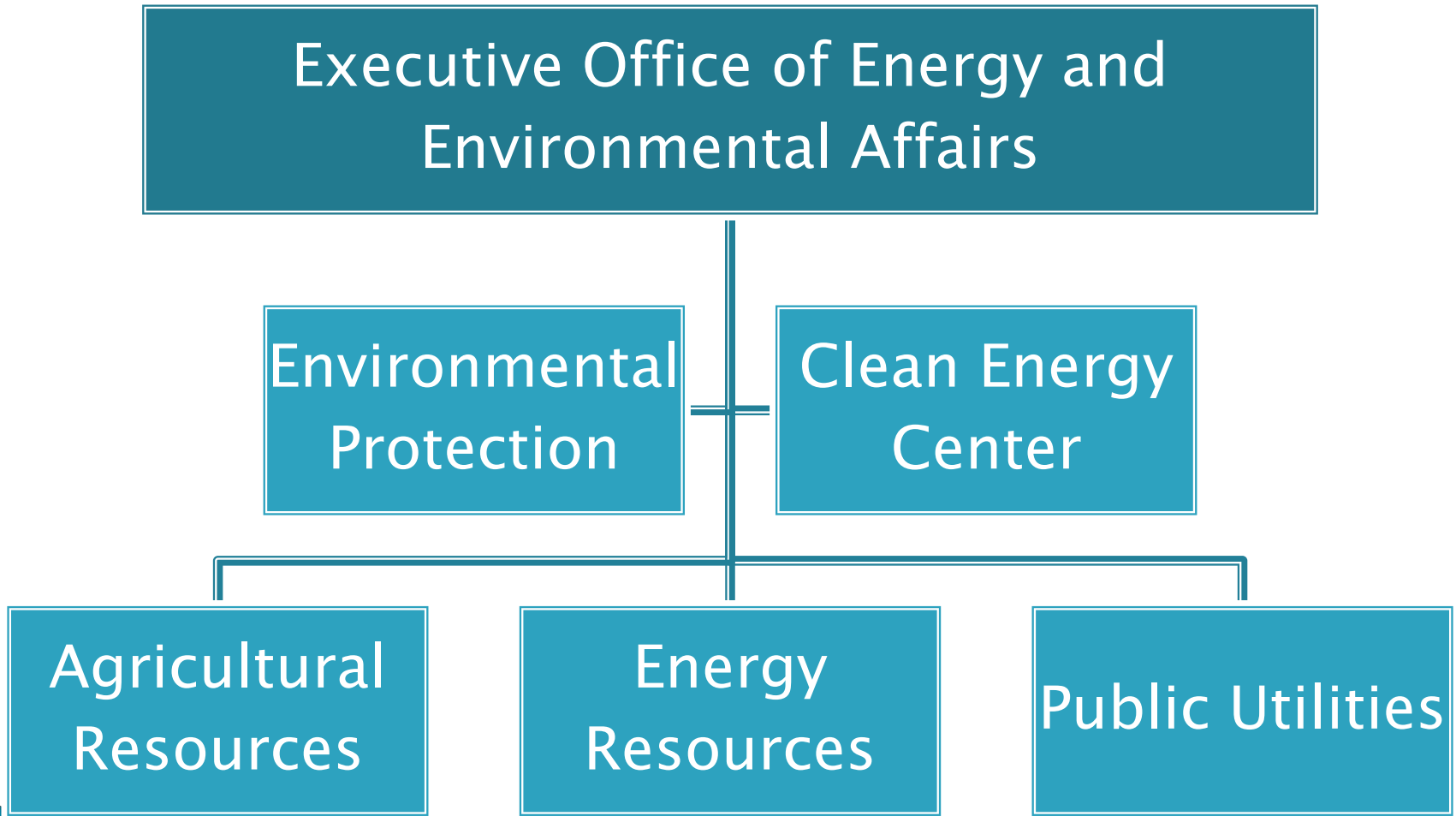
Amy Barad & James Doucett
CESA Webinar May 12, 2014



Many Parties, Many Pieces

- ▶ Turning food waste into energy involves many stakeholders
- ▶ Multiple state agencies have roles to play – including the Legislature
- ▶ Coordination is critical
 - Leverage or modify pre-existing policies, programs
- ▶ Serendipity helps

Interagency Cooperation



2010 Solid Waste Master Plan Goals

- ▶ Reduce solid waste disposal by 2 million tons/year by 2020
 - Reduce disposal of organics (food waste) by 350,000 tons per year
- ▶ Develop infrastructure to support organics diversion
 - Develop 250,000–300,000 tpy of processing capacity and supporting collection infrastructure



▶ Strategy: ORGANICS WASTE BAN

2010 Capacity for Organics

- ▶ Farm-based and commercial food waste composting capacity (100,000 tons/year)
- ▶ 70 composting operations registered with Dept. of Agricultural Resources
- ▶ 200 leaf and yard waste compost sites – municipal and private



2010 Anaerobic Digestion

- ▶ 6 Wastewater Treatment Plants (4 use energy)
- ▶ 4 Food Processors (effluent pre-treatment)
- ▶ 2 Dairy Farms (AD under construction)



Meeting The Goals

What Were the Problems?



- Regulations did not address AD, only recycling and composting
- No certainty for developers, MassDEP or others
- AD needed a regulatory “home”
 - AD is more like recycling or composting activities than solid waste activity
 - Appropriate permitting pathway and standards
- WWTP regulations needed revision to allow food waste

MassDEP Plans to Ban

▶ Revisions to Siting Regulations

- Two permit levels based on 100 tpd threshold
 - General Permit
 - Recycling, Composting or Conversion Permit
- Only source-separated organic materials
- Design & operations info
- Vector/odor control
- Contingency plans
- Products/residuals

▶ Revisions to Wastewater Regulations: allow source-separated organics @ WWTP

▶ Organic Waste Ban Regulations

- Issued January 2014
- Effective Oct. 1, 2014
- Applies to generators of > 1 ton/week
- ~1700 entities affected
- Must separate food waste, vegetative material at the source
- Does not apply to wastewater residuals
- Does not apply to residences

Waste Ban Guidance Issued 1/14

- ▶ “Commercial Organic Materials Waste Ban Guidance for Businesses, Institutions & Haulers”
- ▶ “Your Business & The Waste Bans: What You Need to Know”
- ▶ “Your Municipality & the Waste Bans: Compliance Guide for Towns & Cities”
- ▶ “Property Managers & the Waste Bans: What You Need to Know”



<http://www.mass.gov/eea/agencies/massdep/recycle/solid/massachusetts-waste-disposal-bans.html#2>

Production Incentives



2002 Renewable Portfolio Standard, RECs

2008 Alternative Energy Portfolio Standard (CHP)

2009 “Virtual” Net Metering for Farm AD

2012 “Virtual” Net Metering for *a//* AD (up to 2 MW)

Grant and Loan Opportunities

2006 Renewable Energy Trust grants

2009 MassSave CHP grants
(DOER, Electric Distribution Companies)

2011 Sustainable Materials Recovery Program
municipal grants (MassDEP)

2011 Commonwealth Organics-to-Energy grants (MassCEC)

2012 Recycling Loan Fund – food waste prioritized (MassDEP)



Technical Support

- ▶ Department of Agricultural Resources
 - Energy Manager/USDA Liaison
- ▶ Department of Environmental Protection
 - RecyclingWorks
 - Clean Energy Support Teams
 - Centralized web resources
- ▶ Department of Energy Resources
 - Green Communities Program Contacts
- ▶ MassCEC roundtables
 - Digestate usage issues
 - New AD and/or SSO at wastewater treatment plants

Long-Term Contracting

“Section 83A Carve-Out” (legislation)

- By end of 2016, MA Electric Distribution Co’s must sign 10–20 year contracts for renewable energy from select “emerging” technologies
- 0.4% of EDC load (~203,000 MWh/yr)
- DOER selected the technologies – included AD
- EDCs developing solicitations
- DPU will review



Recent Results

- ▶ 3 farm ADs operational, all taking SSO
- ▶ 1 farm AD under development
- ▶ 1 pilot AD at a public landfill under construction
- ▶ 1 AD at a public landfill under negotiation
- ▶ 1 supermarket distribution center AD permitted
- ▶ Deer Island WWTP modifications under construction to pilot co-digestion
- ▶ ~4 WWTP's seriously investigating adding AD or adding SSO to existing AD
- ▶ One municipal site out to bid

Challenges

- ▶ Each proposed project has unique challenges
- ▶ Uncertainty regarding feedstock availability, which impacts financing
- ▶ Net metering caps are filling up
- ▶ Education/community response



Ongoing Coordination Needed

- ▶ Good technical proposals
- ▶ Permitting: State & Local
- ▶ Community involvement/education
- ▶ Financing

Questions?

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CESA Webinar: Food Waste to Energy

May 12, 2014

Matt Krumenauer
Oregon Department of Energy

Dean Foor, PE
JC Biomethane, Inc.





Governor's 10-Year Energy Action Plan

“Energy is THE issue of our time – both globally and here in Oregon – and no single issue will have a greater impact on our state’s economy, environment and quality of life in the coming decade. The central question is whether we will shape our energy future through intentional investment and development, or whether it will shape us.”

-Gov. John Kitzhaber, MD

Policy and Regulatory

- Renewable Portfolio Standard
- Interconnection Rules and Standard Contracts
- Conversion Technology Rules
- Food Waste Collection



Resources and Incentives

- Energy Tax Credit
- Energy Trust of Oregon
- Biomass Collection Tax Credit



Program Development and Next Steps

- Analysis of food waste management
- Utility regulatory evaluation
- Case study development

JC-Biomethane Junction City, Oregon



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JC-Biomethane Junction City, Oregon

- 1550 kW biogas cogeneration system – 12,250 megawatt hours annually
- \$16 million
- Feedstock include municipal food wastes, food processing residues, grass straw, grease trap waste
- Co-products include digestate liquid and fiber fertilizer



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Thank You

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Thank you for attending our webinar

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