### Building a Renewable Bio-economy

# Strategies that help organics recovery supply chains create products and value



#### Station Goals

- Identify range of potential products
- Achieve consensus on product qualities and a valuable target mix
- Locate strategies that focus or drive valuable developments
- Find elements of a shared framework for facilitating development



Questions to Support Discussion

#### **Organic Material Types and Recovery Methods**

• What types of products come out of organic resource recovery?

#### **Relative Utility of Recovery Technology and Products**

 How can recovery technology and products be differentiated on quality of uses?

#### **Shapers of Product Quality**

- What are the key shapers or drivers of product quality?
- Is there an optimal product mix?

#### **Development Facilitators and Their Readiness**

- Life-cycle thinking and assessments (e.g., modeling transportation impacts; strategies for minimizing VMT)
- Co-location of Recovery and Other Economic Activities (e.g., co-digestion at WWTPs; composting at a nursery/landscaping biz)
- Regional Consensus and/or Cooperative Planning

Upcycling		<ul> <li>Increase in Material + Energy Bioresources</li> <li>Source reduction of organic waste</li> <li>Restoration of degraded or depleted soils</li> <li>Long-term carbon sequestration (e.g., ground injection of bio-CH<sub>4</sub>)</li> </ul>
increasing the	Recycling	<ul> <li>Recovery of Energy and Material Bioresources</li> <li>Recovery of edible foods for human or other animal uses</li> <li>Compost or digestate usage that sustains soil structure and nutrients and that sequesters carbon to net-zero.</li> </ul>
armodynamic quality	Downcycling	<ul> <li>Recovery of Only Energy or Material Bioresources</li> <li>Use in transportation or to make electricity, steam, and/or heat</li> <li>Pipeline injection of bio-CH4 to offset fossil-CH4</li> <li>Compost or digestate usage that increases soil nutrients or carbon (but not both)</li> </ul>
	Discard (Wastage)	<ul> <li>Destruction of Resource Value</li> <li>Interment in landfill</li> <li>Incineration that reduces waste volume (then landfill)</li> <li>Extraction and combustion of fossil fuels</li> </ul>

"Within the circular economy, the role of [recycling / waste management] is to collect, treat, and return secondary resources and recover energy back into the cycle of production and consumption. The principal drivers become recovering [optimal value] and creating markets for the materials and energy we produce from the [used stuff our communities produce]."

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## **Contact Information**