BGreen 2020
A Sustainability Plan for Bridgeport, Connecticut

ECO-TECHNOLOGY PARK
Energy Generation Infrastructure Supporting Economic Development

David M. Kooris
Director, Office of Planning and Economic Development
CT’s Most Populous City: ~150k

Spatially Confined: 16.1 Sq Mi

Lower Income: Median HH Income less than ½ that for County
Climate Action in the Tri-State Region
Where We’ve Been

• **2009: From Vision to Plan:**
  - Establishing a Framework
  - Mayor’s Executive Order
  - Carbon Inventory
  - Public/Private Partnership
  - CAC And Five Technical Committees
  - Comprehensive Sustainability Plan

• Developing Stakeholder Relationships

• Identifying Project and Program Opportunities
BGreen 2020

- Land Use / Transportation
- Energy
- Recycling
- Business, Jobs & Purchasing
- Green Spaces
- Water Resources
- Outreach and Education

“Recipient of Governor’s 2010 Climate Change Award”
City Energy Plan Using EECBG (2010)

% Increase
Sector-Based 22% (adjusted 24%)(E)
Population-Based 18% (adjusted 14%)(E)
Sector-Based 11% (adjusted 13%)(BAU)
Population-Based 10% (adjusted 6%)(BAU)
A Quantified Strategy for Emissions Reduction

Green Building
Renewable Energy
Land Use and Transportation
MSW/Recycling & Water

Attainable through Utility, State, Regional, & Federal Actions (not quantified)
Setting Achievable But, Difficult Targets

- Boost Bridgeport’s Regional Train Ridership
- Transfer Auto To Bus Transit
- Carpool, Vanpool, & Car Share
- TOD
- Walk and Bike
- Switch to Alt Vehicle Fuels
- Reduce Municipal Fleet Emissions
- Benefit from CAFÉ Standards
Energy Efficiency & Generation

- Energy Improvement District
- Comprehensive Energy Plan
- Green Energy Park
- Fuel Cell Park
- Biomass Projects to Convert Food Waste & Sludge to Electricity
- Municipal Building Retrofit/Performance Contracting
- Solar Leasing Initiatives
- Residential Aggregation & Weatherization Programs
- First Municipality in CT to Implement C-PACE (Commercial & Industrial Property Assessed Clean Energy)

Total Energy Consumption in $ for all City Buildings
Facilities Consolidation + Retrofits

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Consumption</th>
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<tbody>
<tr>
<td>FY 08</td>
<td>29000000</td>
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<tr>
<td>FY 09</td>
<td>27000000</td>
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<tr>
<td>FY 10</td>
<td>25000000</td>
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<tr>
<td>FY 11</td>
<td>23000000</td>
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FY 08 FY 09 FY 10 FY 11 FY 12
Waste Recovery Plant

- Owned by Waste Management
- ~70 Mw
- Anchor Entity
- Reclassifying Waste
- Opportunities for Carbon Sequestration for Economic Development
Fuel Cell

- Non-Combustion Generation from Natural Gas
- Second Largest in World
- 15 MW
- Developed by Fuel Cell Energy
- Owned by Dominion
- CT Project 150
- Grid PPA with CL&P
Green Energy Park

- ~5 MW Solar (~3MW) and Fuel Cell (~2MW)
- Grid Generation by UI
- City Land – 20 Year Lease
- Legislative Action on Generation
- Regulatory Relief on Return
Sludge and Waste Food Digesters

**Sludge**
- City RFP
- ~1.5MW
- Direct Energy Sale to Facility
- Remove ~200 Trucks

**Food**
- ~3MW
- PPA with City via Virtual Net Metering & Local Industrial Purchase
- Legislative Action (CT & NYC)
- Spinoff ED Potential
Thermal Loop

- Low Temperature
- Capture Waste Heat from Waste-Energy and Fuel Cell
- Eliminate Need for Local Heating Plants for 6 Million Sq Ft of Buildings
- Lower Operating Costs; Competitive Advantage
- CEFIA
- C-PACE
Park City Green

- Mattress Recycling Facility
- Green Team and Family Re-Entry with St. Vincent’s DuPaul
- Legislative Action on Demand
- Books Added in 2013
- City Support via CDBG
Bridgeport Biodiesel & American Oil Solutions

Biodiesel
- DEEP Permits for Yellow and Brown Grease
- EPA Permits for Sale
- Expanding from 1-10 Million Gallons / Year

American Oil
- Recycles Tires
- Oil, Metal
- Gas to Run Process and Power Building
- Water Heated for Facility
Green Workforce Housing

- Adaptive Re-Use
- 375 Units
- LEED Certified
- Public Support in Acquisition
- Public Support on Environmental and Parking
- Remake City Gateway
Microgrid & Virtual Net Metering

Microgrid

• Legislative Action
• PILOT Program – Awarded First Round
• ~1.5 MW
• Natural Gas
• N+1 Redundancy
• State Pays for Interconnect and City Pays for Generation

Virtual Net Metering

• Legislative Action
• Up to 5 Municipal Meters
• Up to 10 Meters if Connected to Microgrid
Resiliency

- Rebuild By Design
- HUD Post-Sandy Initiative
- 10 Communities
- Planning for 2080
- Combination of Soft and Hard Solutions
THANK YOU!

David M. Kooris
Director
Office of Planning and Economic Development
City of Bridgeport

999 Broad Street, 2nd Floor
Bridgeport, CT 06604

David.kooris@bridgeportct.gov
203-576-7221