

City of Charlotte Energy Efficiency & Conservation Block Grant Project

September 29, 2009

Building a Strategic Foundation for Energy Excellence

CDM



Tonight's Agenda

- 1. Welcome & Introductions**
- 2. Energy Strategy Development Overview**
- 3. Where Are We Now?**
 - Energy and Greenhouse Gas Emissions Overview**
- 4. Where Are We Going?**
 - Developing Charlotte's Energy Strategy**
- 5. Community Program Concept**
 - A community partnership idea**
- 6. Discussion Stations – Ideas and Input**

Energy Strategy Development Overview Rob Phocas Energy Steering Team



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Purpose of the Energy Efficiency & Conservation Block Grant (EECBG) Program

- **Increased energy efficiency, reduced energy consumption and reduced energy costs;**
- **New jobs and increased productivity;**
- **Deployment of renewable energy technologies;**
- **Improved air quality associated with the reduction of fossil fuel emissions;**
- **Improved coordination of energy-related policies and programs across jurisdictions;**
- **Increased security, resilience, and reliability of energy generation and transmission infrastructure;**
- **Leveraging resources of governments, utilities and utility regulators, private sector and non-profit organizations; and**
- **Widespread use of innovative financial mechanisms that transform markets**

EECBG Funds and Process

EECBG: Direct Funding Allocation

- \$6.78M total over 3 years;
- City applies for initial \$250,000 to develop Energy Strategy & energy audits for City facilities;
- Once Energy Strategy approved by DOE, City can apply for ½ of remaining EECBG (\$3.2M) to implement components of the Energy Strategy; and
- Remaining \$3.2M given after reporting on initial results

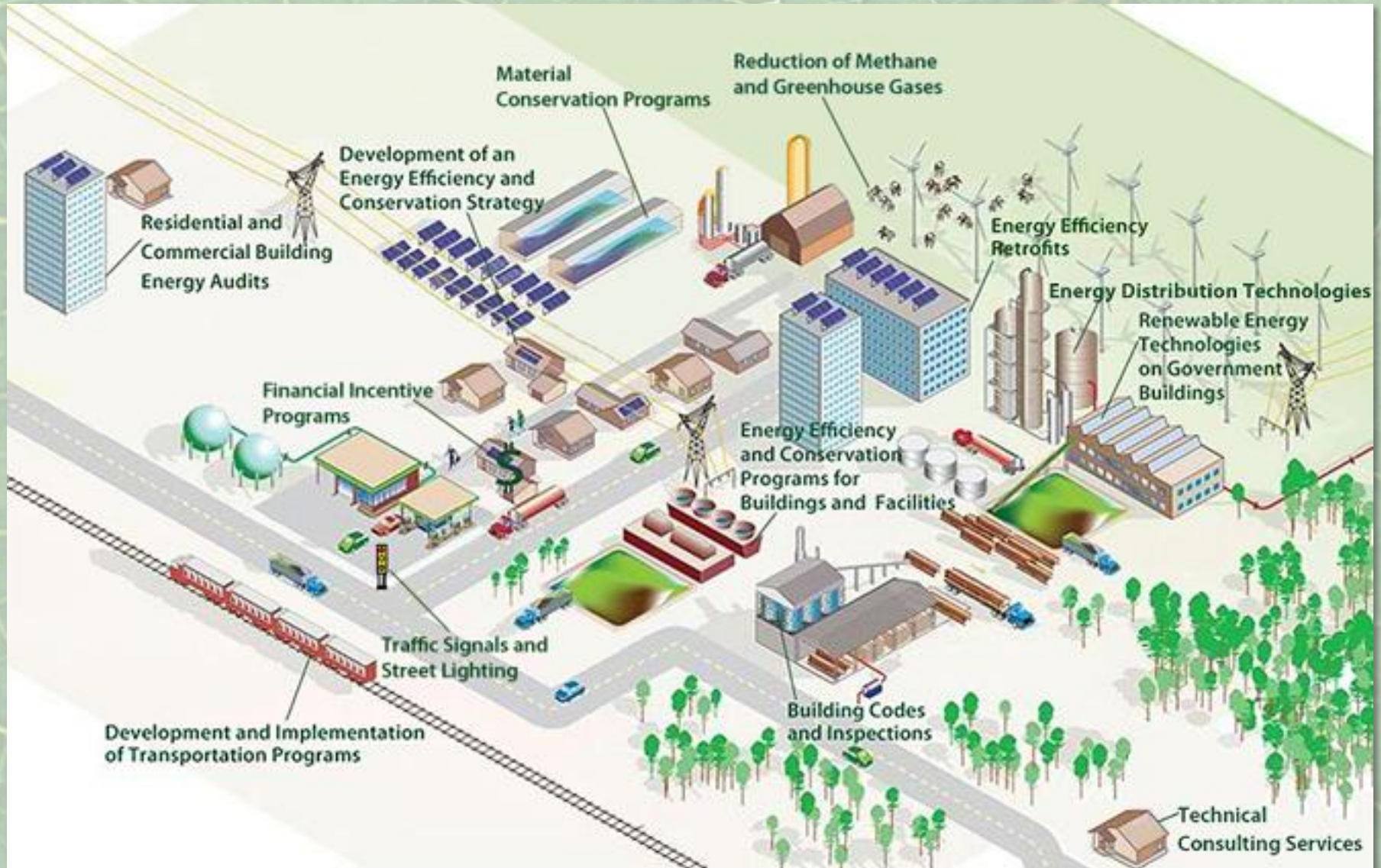
EECBG: Competitive Money

- \$454 Million for “Retrofit Ramp Up” Community Programs

EECBG: NC State Energy Office

- Approximately \$75 million through competitive process

EECBG Eligible Activities



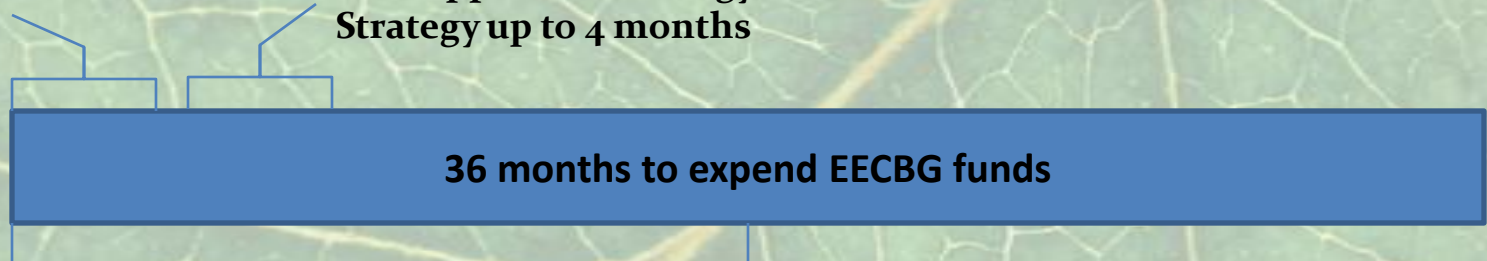
How Does the City Propose to Use the EECBG Funding?

- **Opportunity to look at City facilities and operations for energy efficiency gains, and**
- **An opportunity to work with the Community to begin sustainable energy efficiency projects and programs**

Energy Strategy Timeline

4 months to develop
Energy Strategy

DOE approval of Energy
Strategy up to 4 months



36 months to expend EECBG funds

18 months to obligate all EECBG funds
(\$6.7M)

- Energy Strategy is our plan for spending the \$6.7 million . . . What projects?
- Energy Strategy must be developed within 120 days & submitted to DOE
 - City applied for initial \$250,000 on May 28, 2009;
 - Clock started ticking on August 4, 2009;
 - A lot to do in a very short time

Where Are We Now? Energy & Greenhouse Gas Emissions Overview *Amelia Ravin, CDM*



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Why do we need a baseline study?

- **To understand where our energy dollars are going**
- **To identify opportunities for energy savings and emissions reductions**
- **To be able to measure progress**
- **To position City and the broader community for future funding and programs at the state and federal levels**

What are we measuring?

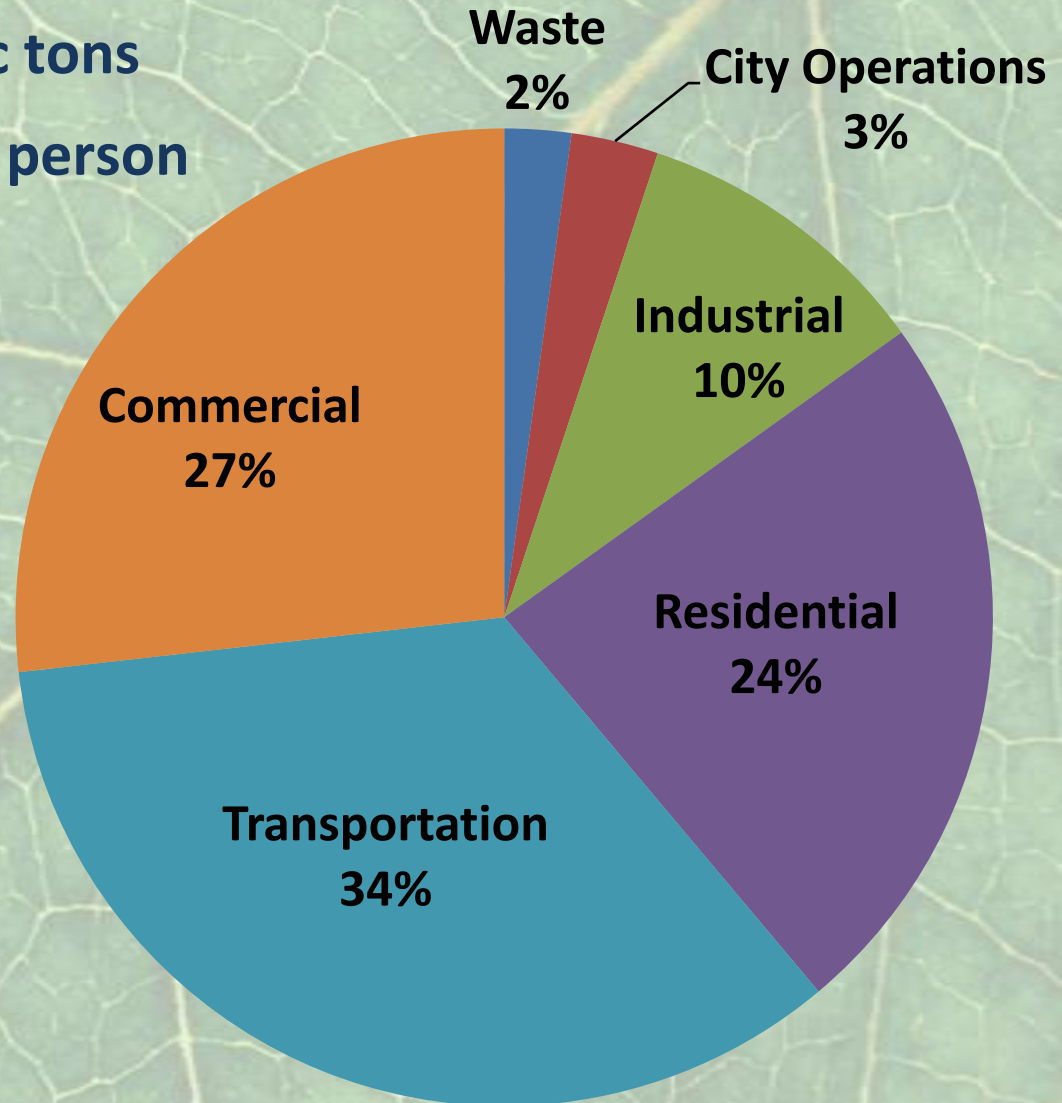
- ☞ **Energy use for the year 2006 within the City**
 - **Electricity in buildings**
 - **Natural gas in buildings**
 - **Fuel oil in buildings**
 - **Gasoline and diesel in passenger vehicles**
 - **Landfill gas from solid waste generated within the City**
 - **All energy used in city buildings, fleet and facilities as a subset of community energy**

AND...

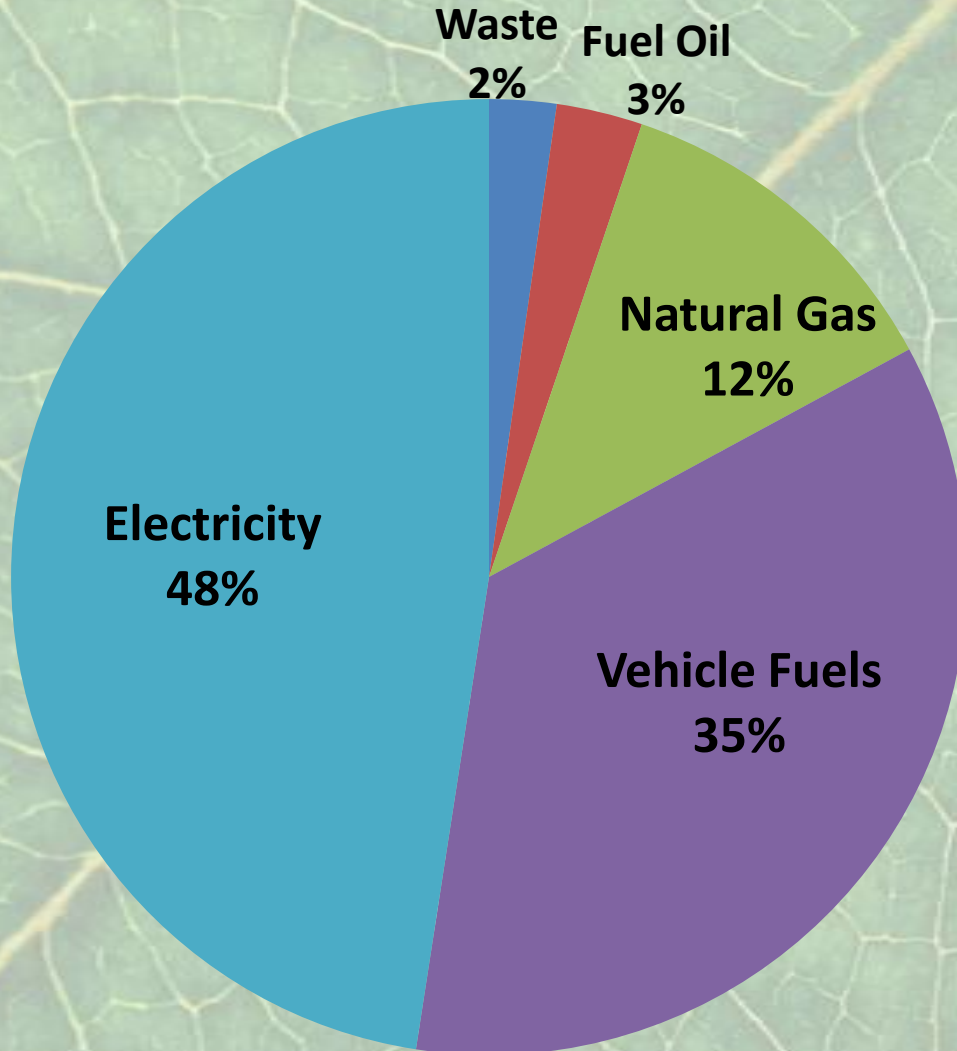
- **The GHG emissions from all of the above energy consumption for the year 2006**

2006: Community GHG Emissions by Sector

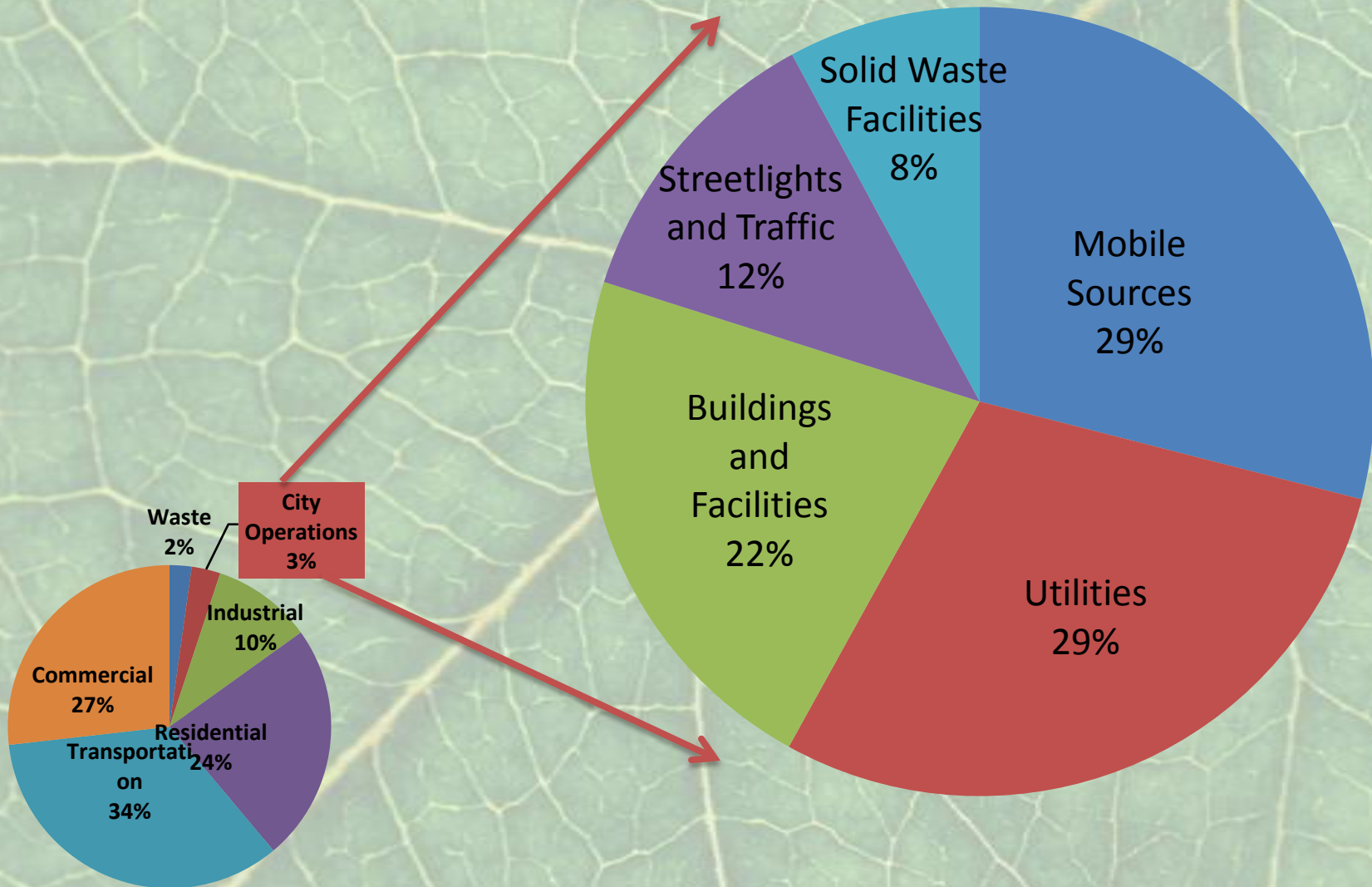
- 👉 **Total = 10.8M metric tons**
- 👉 **16.5 metric tons per person**
- 👉 **Electricity = 47%**



2006: Community GHG Emissions by Source



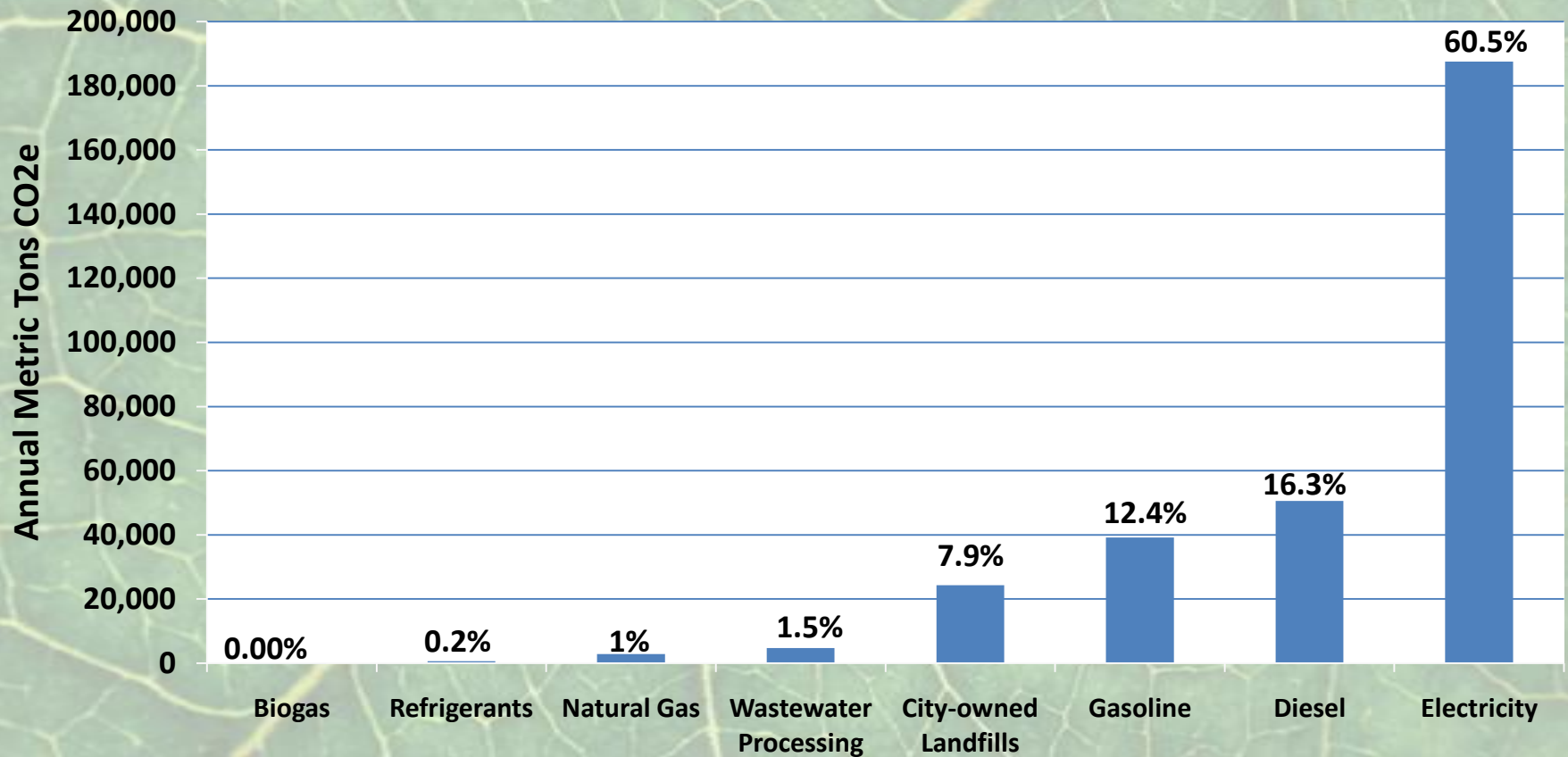
2006: City Operations GHG Emissions



2006: City Operations GHG Emissions by Source

👉 GHG Emissions totaled 310,000 metric tons, 3% of Community

👉 Electricity accounts for 60% of city operation emissions



Key Points

- ✓ Emissions reflect a typical breakdown for local government and community energy use
- ✓ Emissions from transportation are usually the largest single sector
- ✓ Energy use in buildings is largest combined emissions source
- ✓ Reflects a starting point to focus efforts and measure progress

Where Are We Going? Developing Charlotte's Energy Strategy *Dave Zimmer, CDM*

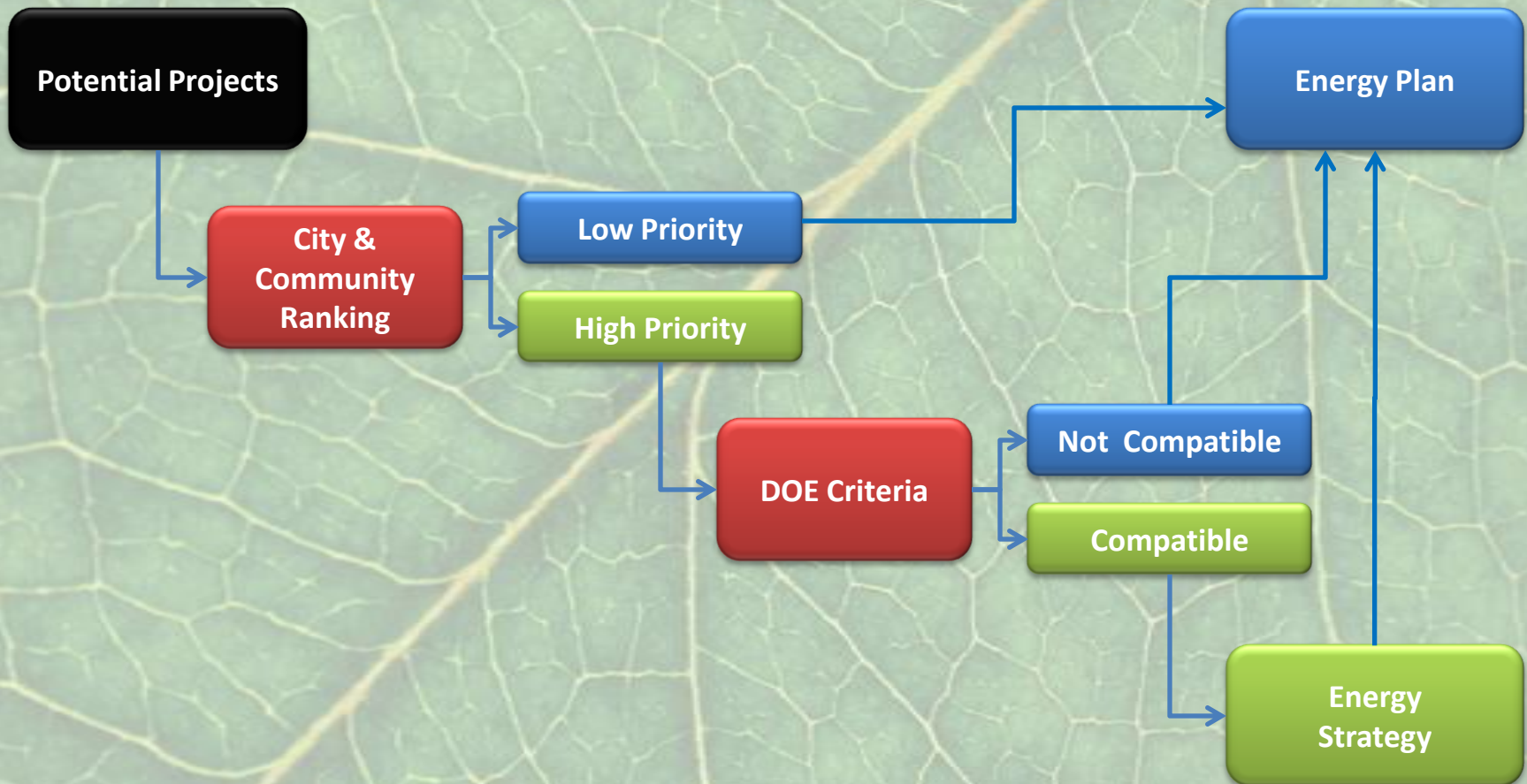


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Project Development, Planning, and Prioritization Framework



Project Prioritization Framework



Energy & GHG Action Plan

Energy
Strategy
for DOE

Prioritization Criteria

- City and Community
- DOE

City and Community Project Prioritization Criteria

- **Air Quality and GHG Emissions**
- **Community Catalyst**
- **Return on Investment**
- **Job Creation Potential**
- **Innovation and Leadership**
- **Implementability**
- **Leveraging Programs and Partnerships**

Air Quality & GHG Emissions

👉 Projects that improve air quality and reduce GHG emissions



Community Catalyst

- 👉 Provides public educational opportunities and brings community support
- 👉 Is a catalyst for future energy efficiency improvements



Return on Investment

- 👉 **Comparing initial project costs with long-term energy savings**
- 👉 **Short payback period**
- 👉 **Example – home insulation or solar panels**



Job Creation Potential

👉 Potential to create or retain local jobs



Innovation and Leadership

- 👉 Charlotte can be an energy leader
- 👉 Innovative projects and visionary approaches
- 👉 Example – Community Partnership Program



Implementability

- 👉 **“Shovel ready” projects**
- 👉 **1-3 year implementation timeframe**
- 👉 **Proven track record of successful implementation**



Leveraging Programs and Partnerships

- 👉 Ability to leverage Charlotte public, non-profit, and private sector expertise, resources and funding



Your Opinion and Ideas are Encouraged

- 👉 **Community Input Survey**
- 👉 **Project Idea Form**
- 👉 **Go to www.charlottenc.gov – City's Energy Strategy**
- 👉 **October 5 deadline**





Community Partnership Project Concept

*Rob Phocas
Energy Steering Team*

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Community Partnership Project Concept

👉 **Defining and selecting energy efficiency and conservation projects for a targeted area.**

👉 **For example:**

- **Weatherization projects on the residential level**
- **Commercial building audits and retrofits**
- **Apartment complex audits and improvements**

DOE \$400M Competitive EECBG Program Grants – Just announced

- **“RETROFIT RAMP-UP PROGRAM”**
- **DOE is seeking to fund a select group of showcase community projects:**
 - **Innovative and “special” projects**
 - **Leverage significant external funding**
 - **Sustainable beyond 3 years**
 - **Replicable beyond immediate geography and scope**
 - **Large scale projects**
 - **Only 4-8 Awards (\$1M-\$150M)**
 - **Strong partner relationships and commitments**

Examples of a Retrofit Ramp-Up Program

- 👉 **Develop a Community Partnership Project by partnering with local banks and a construction firm.**
- 👉 **Retrofit homes and retail buildings in a mixed-use neighborhood.**
- 👉 **Project funds are used to leverage additional 5:1 outside funds.**
- 👉 **Program is marketed to customers of the banks through the ATM networks.**

Example of Community Program

Kansas City “Green Impact Zone”:

- 150 city blocks.
- The weatherization program will conduct energy audits in 2,500 homes.
- Job training and assistance programs.
- Includes bus rapid transit and many more sustainable energy approaches.



Discussion Stations

Ken Kearns

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Discussion Stations

- 👉 **Energy Efficiency and Conservation**
- 👉 **Renewable Energy**
- 👉 **Transportation**
- 👉 **Community Partnership Project**

Discussion Stations

👉 **Energy Efficiency and Conservation Station:**
increase energy efficiency and conservation in buildings and homes.

- Upgrade streetlights with light emitting diode (LED) fixtures
- Commissioning of commercial building equipment: Checking energy using equipment to make sure that it is running correctly and efficiently

Discussion Stations

👉 **Renewable Energy Station: increase the use and purchase of solar, wind, hydrogen, biomass and other non-fossil fuel energy.**

- **Install Solar Thermal Hot Water Systems at 25 Fire Stations: a renewable energy project to reduce natural gas consumption in public facilities' hot water systems.**
- **Develop a Clean Energy Revolving Loan Fund, providing capital to finance renewable energy projects.**

Discussion Stations

- 👉 **Transportation Station: reduce energy and emissions from personal and commercial vehicles.**
 - **Improve bicycle and pedestrian access within the City and focused on access to mass transit.**
 - **Purchase of hybrid buses for the City's fleet.**

Discussion Stations

👉 **Community Partnership Project is a developing Community project idea. Please come by and give us your feedback and ideas for partnerships, resources and project types.**

- **Weatherization projects on the residential level**
- **Commercial building audits and retrofits**
- **Apartment complex audits and improvements**

Thank You for Participating!

- 👉 **Community Input Survey**
- 👉 **Project Idea Form**
- 👉 **Deadline: Monday, October 5**

www.charlottenc.gov

City's Energy Strategy