

Cambridge Energy Alliance: A Partnership with ESCOs

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Introduction

- **City of Cambridge, MA** – A multicultural community of over 100,000 people located within a 6.5 sq mile area, Cambridge is characterized by its unique mix of cultural and social diversity, intellectual vitality, and technological innovation.
- **Clean Energy Solutions, Inc.** – CES is a consulting services firm offering energy efficiency, engineering, and financial expertise to non-profit and government organizations.
- **Bostonia Partners, LLC** – we are a financial services company and investment bank specializing in developing new credit structures supporting public/private partnerships including energy savings projects, renewable energy projects, and energy outsourcing. To date, we have financed over \$500 million in this arena.



CAMBRIDGE
Energy Alliance
Saving Money & the Planet

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- A groundbreaking \$100 million initiative to implement massive energy efficiency and clean energy generation throughout the city
 - Reduce peak demand by 50 MW & fossil fuel use by 5% over 5 years
 - Reduce Cambridge's carbon footprint by at least 150,000 tons over 5 years
 - A collaboration between the City of Cambridge, Cambridge Health Alliance, and the Henry P. Kendall Foundation

About Cambridge, Massachusetts

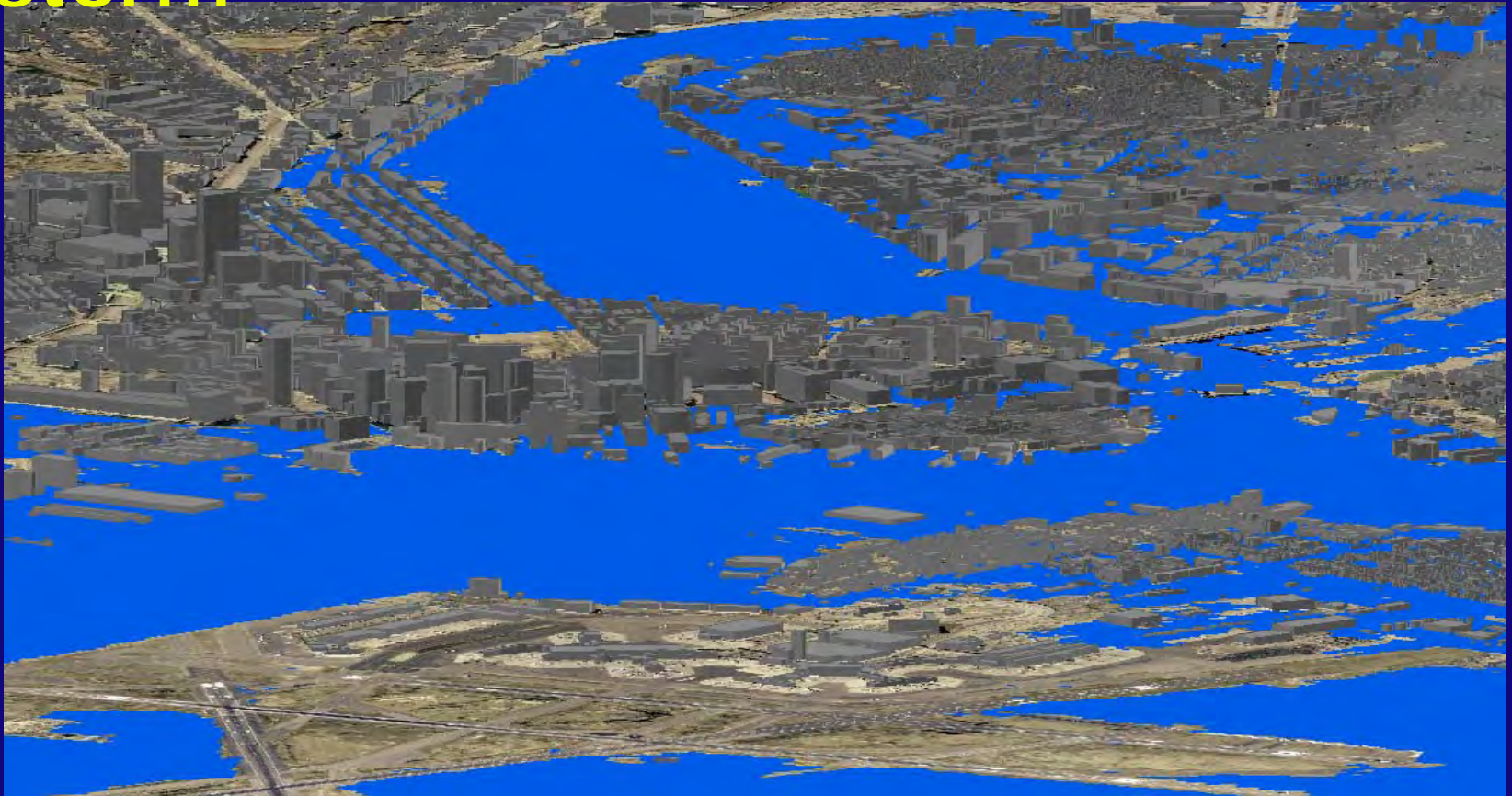
- Population: 101,355 (2000 Census)
- Area: 6.26 square miles
- Home of Harvard University, MIT, Lesley University
- A major biotech center with over 100 companies and a growing cluster of energy innovation and entrepreneurship



Why Cambridge is Taking Action

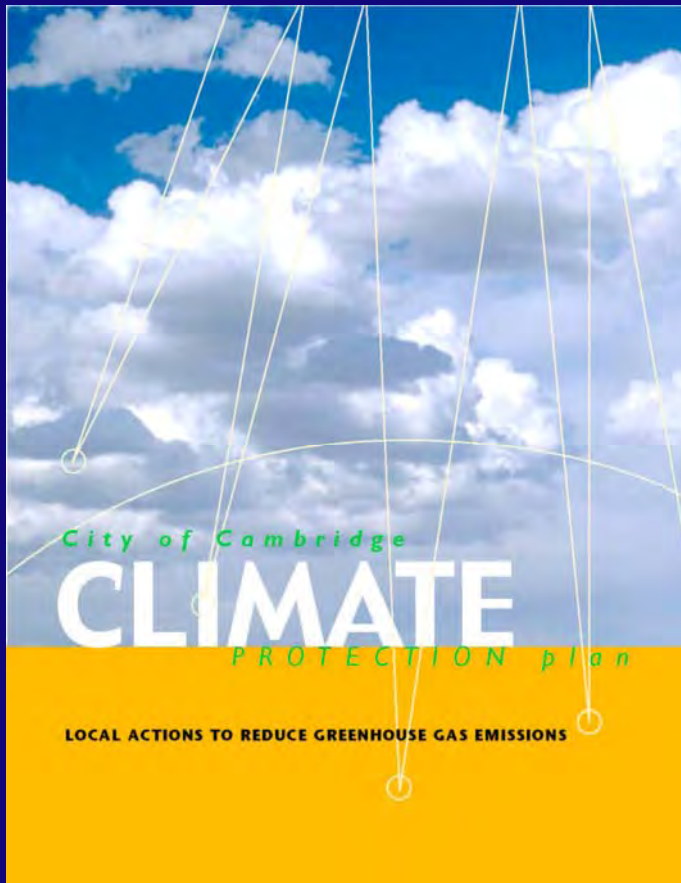
- Local governments will be on the front lines in responding to global warming impacts
- Federal and state action limited
- City Council is committed to reducing carbon emissions, energy efficiency, and clean energy
- Cambridge wants to take responsibility for its contribution to global warming and is in a position to act
- Benefits to the community in terms of new jobs, economic development, stabilized energy costs, reduced pressure on grid

Boston & Cambridge in 2100 with 2-foot sea level rise & 100-year storm



Source: Paul Kirshen, Tufts University; Kelly Knee, Applied Science Associates; National Environmental Trust; Tufts University/University of Maryland/ Boston University CLIMB Study

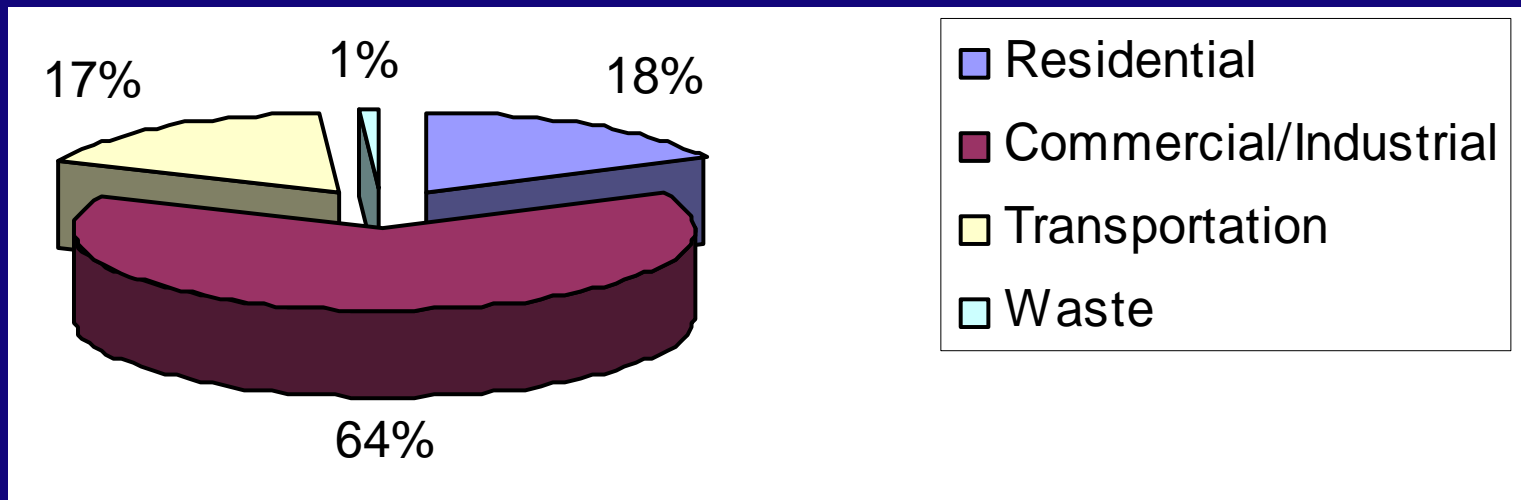
Basis for Action: Cambridge Climate Protection Plan



- Member of Cities for Climate Protection program sponsored by ICLEI-Local Governments for Sustainability since 1999
- Goal to reduce greenhouse gas emissions in Cambridge by 20% below 1990 levels by 2010
- Goal to acquire 20% of municipal power from renewable sources by 2010

Building Energy Use is the Problem

2003 Greenhouse Gas Emissions in Cambridge



- Over 80% of GHG emissions are from building energy use, and about 2/3 is from the commercial, institutional, and industrial sectors; existing building stock is key
- City programs did not match emissions

Partnership Between the Henry P. Kendall Foundation and the City

- Developed the concept for the Alliance
- The Kendall Foundation and the Barr Foundation each committed \$250,000 for technical and financial expertise
- Established an organizing committee
- Began working with local institutions, businesses, & organizations

Two Key Concepts

- Together We can Make a Difference
- “No Cost” Debt to Invest in Efficiency

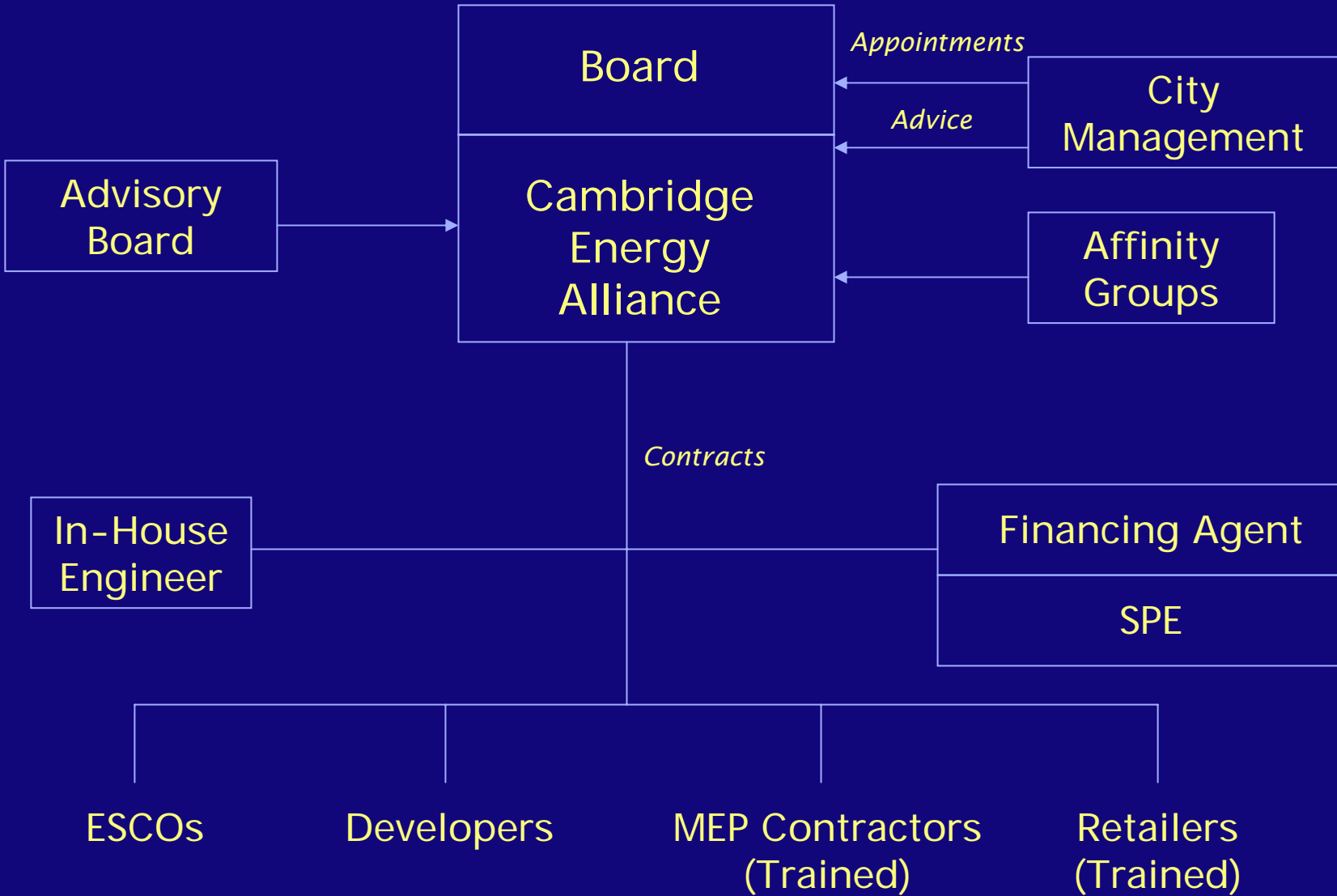
Using the City as an Aggregator

- City is a natural aggregator of energy demand, public incentives, & private investment
- City uses its “brand” to rally businesses, institutions, & residents to reduce energy use, reduce carbon emissions, and reduce reliance on foreign energy sources
 - Stakeholders have a trusted relationship with the City
 - The City has authority to deal with all sectors

Organization of the Alliance

- A new non-profit organization has been established separate from the City but affiliated through the Board of Directors
- A staff will be hired to manage projects and financing
- An advisory committee to involve a broad spectrum of stakeholders
- Will address 3 key obstacles for building owners
 - knowing what to do
 - identifying competent contractors
 - paying for improvements

Governance of the Alliance



How the Alliance Will Operate

- Will provide a full range of engineering, technical, installation, project management, monitoring, and financial services
- A stable of private energy service companies and contractors will be hired to perform energy assessments and implement measures
- Independent engineers will monitor and verify the work of the ESCOs and contractors
- A revolving loan fund will be used to finance work and customers will pay back from their savings. Retrofitting will be emphasized
- Will enable consumers to take measures with longer paybacks, e.g., combined heat & power and solar

Status of the Alliance

- The Alliance is incorporated and Board of Directors formed
- Pilot engineering assessments launched
- Coordinating with NSTAR Gas & Electric on marketing and incentives
- Partnering with universities, property owners & managers, businesses, & citizens
- ESCO proposals currently under review
- Financing arrangements in progress
- Full services to be launched in Fall 2007
- Technical consultants key in shaping initiative

Key Elements of Energy Efficiency Initiative

- High penetration rates
- Critical Mass for financing; reduced marketing and transaction costs
- Retrofitting and new construction
- Include all energy measures
- Use DG, renewable energy, and CHP where possible
- High profile campaign involving government, private sector and citizen leadership

ESCOs: the Services Delivery Agent

- One-stop shopping for customers
- ESCOs pre-qualified for 4 market sectors
- Large customers can choose from 2
- Financing new to small customer ESCOs
- CEA inspections bolster customer confidence
- Marketing Assistance provided by CEA
 - Marketing campaign for small customers
 - Introductions for Large Customers

ESCO Contracts/Responsibilities

- 1) With Customer: Typical ESA
- 2) With CEA: Marketing Division of Responsibilities, CEA Quality Control, Fee Thresholds
- 3) Some of ESCOs also have NStar Contracts
- 4) Financing Between Lender & Customer
- 5) CEA Arbiter on Utility Incentives

ESCOs Selected

- Small Residential:
- Small Commercial:
- Large C&I: Not Yet Announced
- Large Residential: Not Yet Announced

Must Change Behavior of all Parties

- Non MUSH Customers: Accept ESCOs, Enter into non-recourse loan, accept measures not otherwise a priority
- ESCOs: Serve smaller customers, work under rules set by City, accept outside financing, 3rd party quality control
- Lenders: An aggregated pool of smaller loans, flexible terms, some uncertainty on total demand
- Utilities: Loss of revenue, flexibility with incentives, need for Decoupling relief
- City: All Buildings out to bid for EPC, Aggregation of Incentives, Marketing Partnership with ESCOs, Quality Control Manager

Finance Plan for Different Markets

- Finance Plan must be tailored to meet specific needs of the end user
 - State & Municipal Buildings
 - School Systems
 - Hospitals and Universities
 - Commercial & Industrial
 - Residential

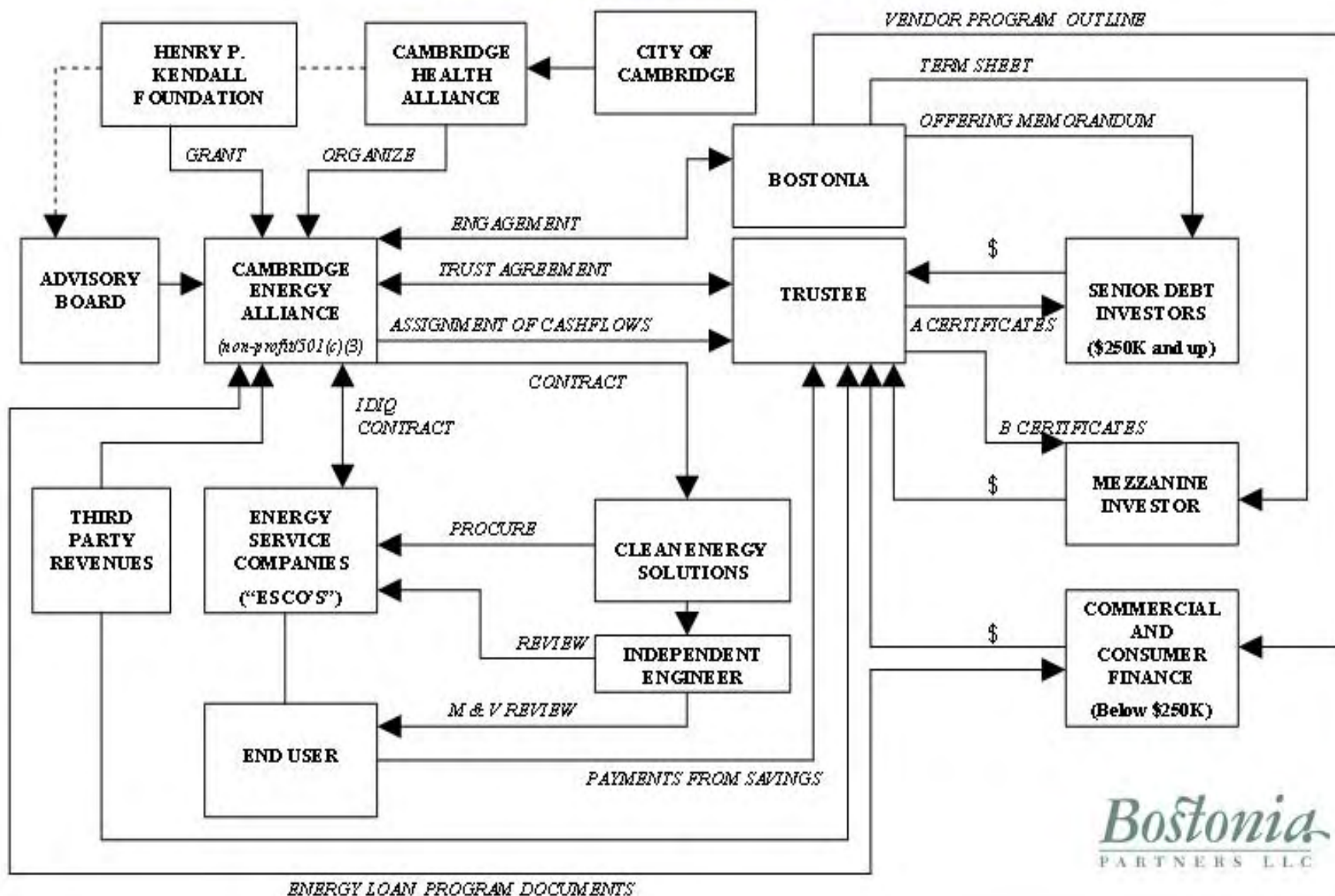
Financing the Alliance

- Assembling up to \$70 million revolving line of finance
 - \$50M raised from pension & annuity providers, life insurance companies
 - \$5M from private equity or subordinated debt
 - \$15M +/- from public & utility-related sources
- No municipal funds directly involved
- Because savings are paid into a revolving fund, \$100 million in energy efficiency implementation will result over 5 years

Potential Annual Public & Utility-Related Sources in 2008-2012

- Regional Greenhouse Gas Initiative
- Forward Capacity Market of the Independent System Operator of New England
- Energy efficiency & renewable energy system benefit charges collected by the private utility
- Carbon offsets, renewable energy credits, pollution credits

Transaction Structure



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