



# Energy Savers: The One-Stop Shop for Energy Efficiency

*Building America Stakeholder Meeting*

*Austin, TX*

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## Center for Neighborhood Technology

- 33 year-old not-for-profit: 100 employees
- 2009 MacArthur Award Recipient
- **Four issue areas:**
  - Water
  - Transportation & community development
  - Climate
  - Energy
- **Two affiliates:**
  - CNT Energy
  - I-GO Car Sharing





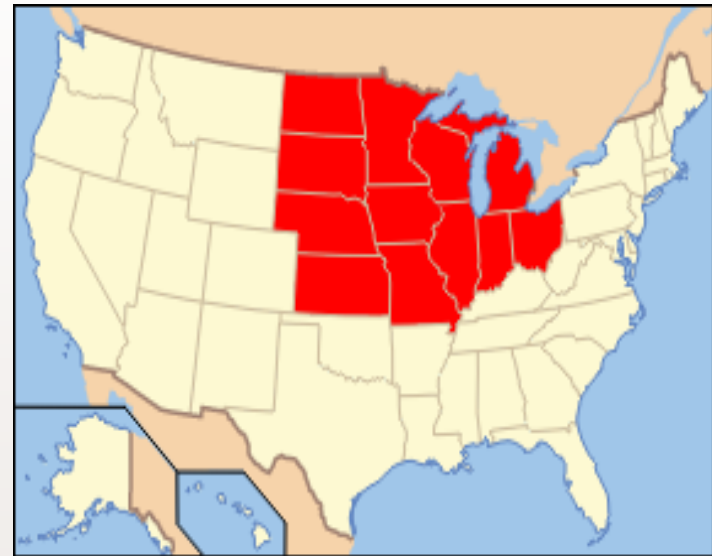
- A division of the Center for Neighborhood Technology dedicated to helping communities and consumers save energy and money with:
- **Dynamic Pricing and Smart Grid**
  - Ameren Power Smart Pricing
  - ComEd Residential Real-Time Pricing
- **Energy Efficient Buildings**
  - Residential
  - Commercial and municipal buildings
- **Regional Energy Planning**
  - Sustainability plans for municipalities



# Region



- 70% of Chicago's global warming emissions comes from buildings
- Chicago Climate Action Plan (CCAP) calls for retrofit of 400,000 residential units by 2020 in order to achieve a 25% reduction in the city's greenhouse gas emissions



# Region



- Chicago's housing stock can be characterized by three words: big, old, and diverse
- Older buildings use more energy through physical deterioration
- Existing buildings will exist in 50 years— retrofits on the existing stock are a good investment!



# Savings Potentials



## Engaging as Partners in Energy Efficiency: Multifamily Housing and Utilities (ACEEE, CNT Energy)

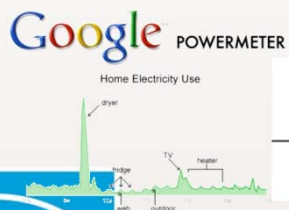
- At scale, comprehensive programs can save 30% of natural gas use and 15% of electricity use
- The nationwide potential savings from multifamily energy efficiency are huge
  - \$3.4 billion per year in savings
- Maximizing energy efficiency is a win-win for residents, building owners, and energy utilities



# Current EE Landscape (Overly Complex)



## Information & Guidance



## Building Owners



## Finance & Rebates



## Workforce



# Key Barriers



- Lack of information
- High transaction costs
- Limited workforce





# Energy Savers



- Started in 2008 as an initiative of The Preservation Compact
- Dual mission:
  - Preserving the supply of affordable rental housing
  - Reducing the carbon footprint of buildings
- Support from:
  - MacArthur and Polk Brothers Foundations, the City Department of Housing and Department of Environment, Illinois Attorney General's Office, Department of Commerce and Economic Opportunity

## The **Preservation** Compact

A Rental Housing Strategy for Cook County

**energy  
savers**

A one-stop energy efficiency shop  
for multifamily building owners

# The One-Stop Shop



A single point of contact to provide building owners with access to:

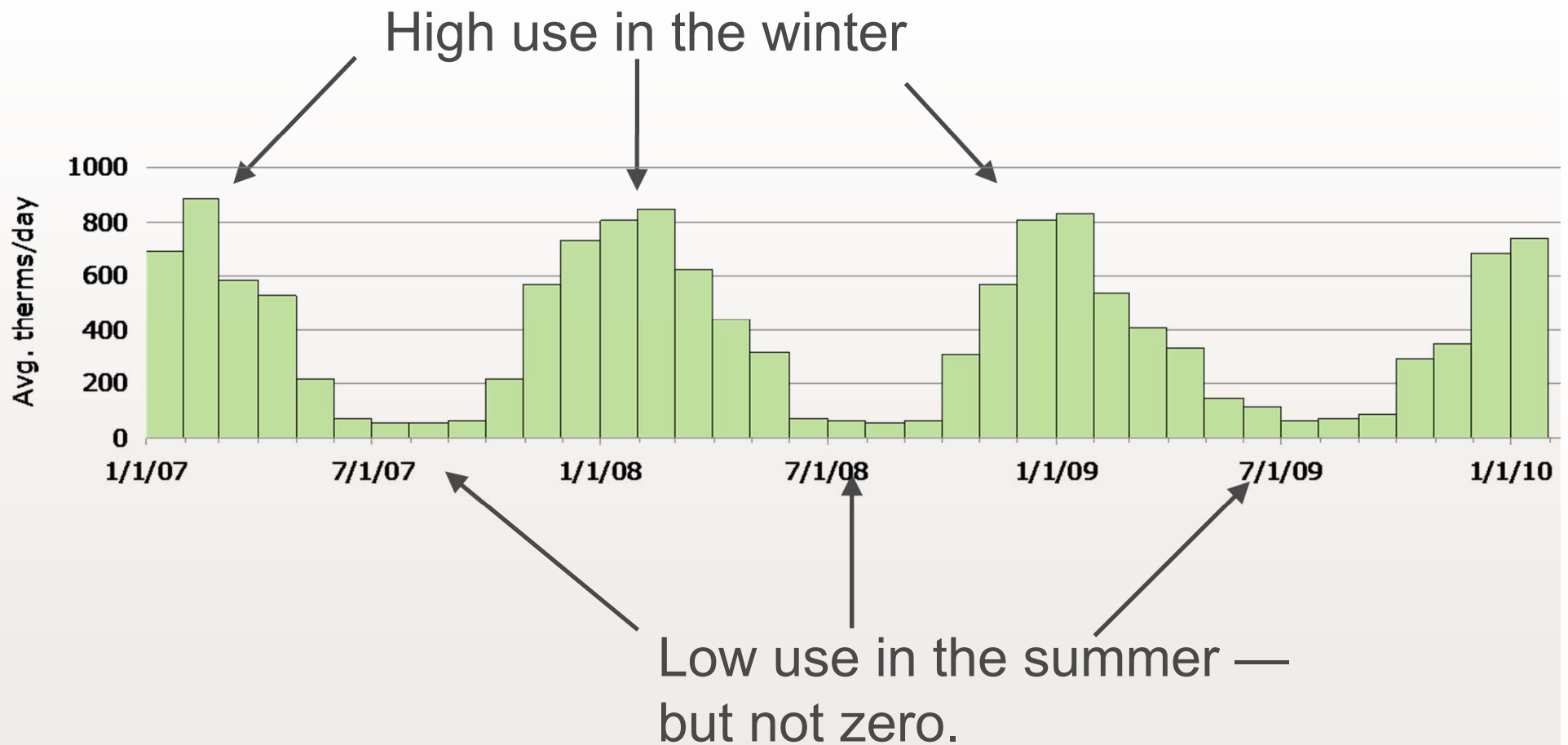
- **Technical Assistance**
  - Utility bill analysis
  - Energy assessment
  - Cost-effective energy-saving recommendations
- **Financing**
  - Low-cost financing through our partner, the Community Investment Corporation
- **Construction Oversight**
- **Annual Performance Monitoring**
  - Two years post-retrofit



# Technical Assistance



- Natural Gas Use

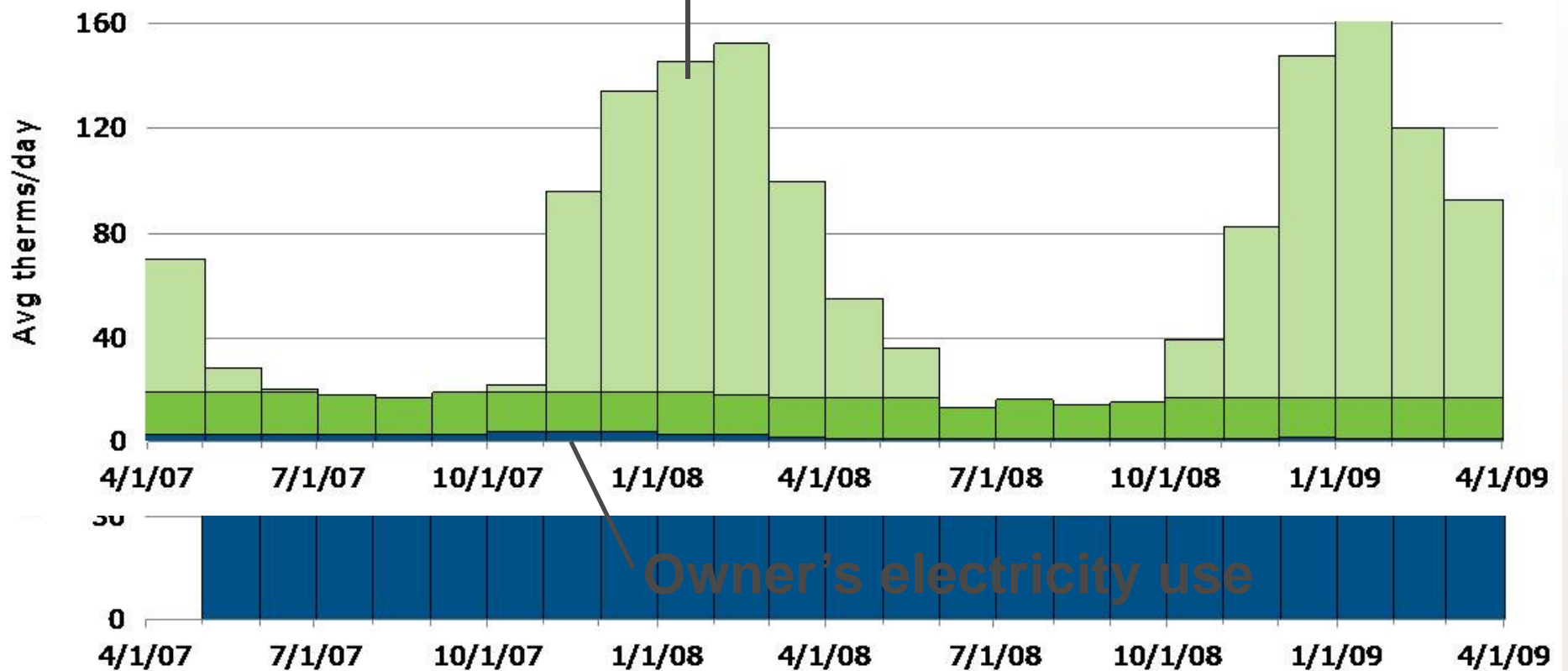


Example: 134,000-ft<sup>2</sup> building with 96 units. All Metretek reads.

# Technical Assistance



## Owner's natural gas use



# Technical Assistance



- Energy Assessment



Boiler turns on

8 minutes later

30 minutes later



# Technical Assistance



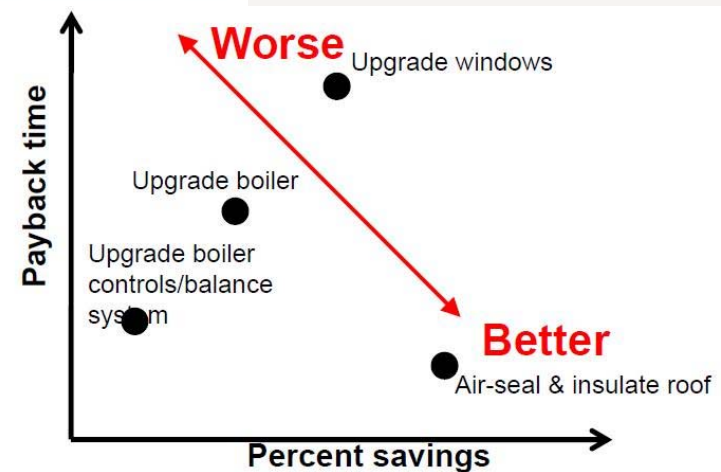
## • Cost-Effective Recommendations

**Table 1** Recommended retrofits

Recommendation	Cost (\$)	Savings (therms/yr)	Savings* (\$/yr)	Simple payback (yr)	Retrofit lifetime (yr)	SIR
1. Air-seal basement exterior walls, windows, doors, plumbing chases	36,000	22,000	29,000	1.7	10	6.0
2. Air-seal apartment exterior walls, windows, doors, chases, chimneys	12,000					
3. Air-seal, insulate roof to R-49	31,000	6,300	8,200	3.8	20	5.2
4. New boiler controls, sensors	10,000	3,400	4,400	2.3	10	4.4
5. Replace single-pane windows with double-pane windows	480,000	23,000	31,000	16	20	1.3
<b>TOTAL**</b>	<b>570,000</b>	<b>55,000</b>	<b>72,000</b>	<b>7.9</b>	<b>19<sup>†</sup></b>	<b>2.4<sup>†</sup></b>

\* Assumes \$1.30 per therm of natural gas and \$0.10 per kilowatt-hour of electricity

\*\* Totals may not match due to rounding † Weighted average





## ● Financial Institution

- Revolving loan fund
- Interest rate fixed at 3% for energy-related improvements
- Can combine with grant and/or rebate sources
- Can combine with rehab
- Can combine with acquisition
- Creates a more flexible program

## ● Technical Assistance

- Provides information that allows owners to make smart investments
- Assures quality installation
- Monitors the building post construction to assure savings and encourage additional investment and/or maintenance

# Case Study

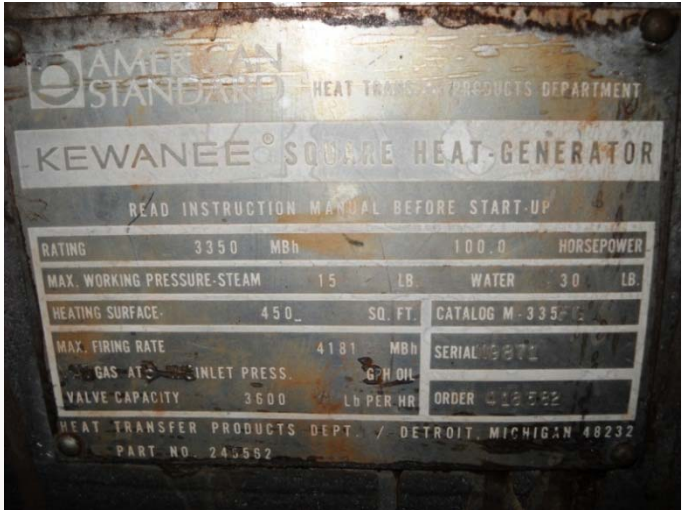


- Year of construction: 1928
- Seven-story brick building with 55 units, mostly studios
- Steam boiler
- Energy assessment performed by CNT Energy in September 2009





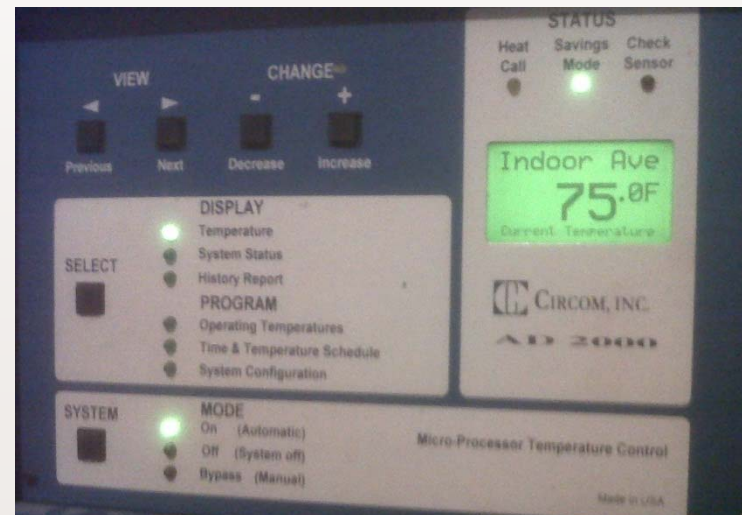
# Before



# Energy Saving Improvements



- New steam boiler
- New boiler controls with indoor temperature sensors



# Energy Saving Improvements



- Replaced hot water heaters with high efficiency model
- Insulated heating pipes



# Savings



- 45% natural gas savings
- \$21,600/year cost savings
- Simple payback based on actual savings to date: 4 years



# Program Results



- 7,500 units upgraded for efficiency
- 1,700,000 gas therms saved
- 350 jobs created
- Collective savings of over \$6 million
- Preservation of affordable rental housing through reducing energy bills
- High rate of customer satisfaction

# Key Findings/Lessons Learned



- Building relationships with property owners and contractors– importance of drawing on community relationships
- Cost-effective upgrades (not necessarily latest technology) should be communicated to building owners
- Quality installations are crucial
- Tenant, building owner, and maintenance staff education



Questions?

Thank you!



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