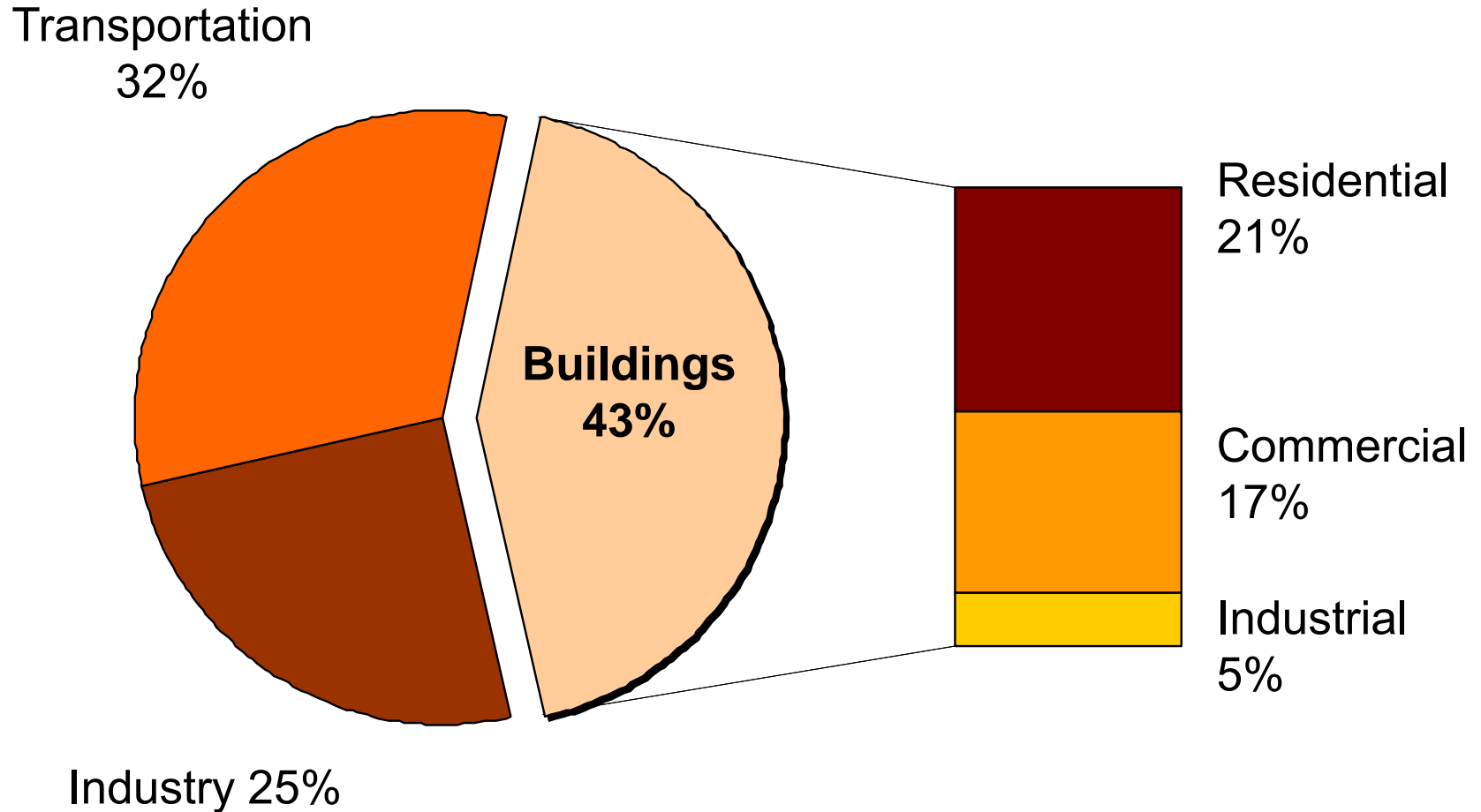


# Retrofitting your state

# Buildings and CO<sub>2</sub>e emissions



Source: Pew Center on GCC

# Benefits of building retrofits

- Climate and public health
- Income to tenants and owners
- Higher property values
- Extended building life
- Tenant/occupant health and productivity
- Jobs

# The unclaimed value



# RRIDDLLS

- Regulatory surround is bad
- Risk aversion among tenants and owners, especially given uncertain duration of tenancy/ownership
- Information problems on everything (benefits, cost, reliable service)
- Disaggregated savings
- Disruption
- Lack of capital
- Lack of interest
- Split incentives (tenants vs. owners)

Me2 example

# Goal of Me2

Comprehensive application of cost-effective retrofit measures to Milwaukee's building stock with maximum community capture of the benefits of doing so.

# Investment and return

<b>Building class</b>	<b>Total cost of measures</b>	<b>Total annual savings</b>
Residential	\$243.1M	\$83.3M
Commercial	\$184.6M	\$38.0M
<b>Total</b>	<b>\$427.7M</b>	<b>\$121.3M</b>

# Value proposition

- For an investment of ~ \$428M, Milwaukee can realize ~\$121M annually, a 28% return that it can borrow on and pay out of savings at no cost to its operating budget
- That's a lot of jobs. \$1M invested  $\approx$  12.5 job years (most in installation, some in production of materials installed), so about  $428 \times 12.5 = 5350 \approx 5.5\text{K}$  job years. With low local multipliers at least twice that, or 11K job years.
- After full installation and payment of loaned capital, that will mean \$1.2B per decade in money that would otherwise have left Milwaukee, with ongoing gains to public health and wealth, quality of life, and productivity.
- Expected improvements in technology and higher energy prices only make this look better.

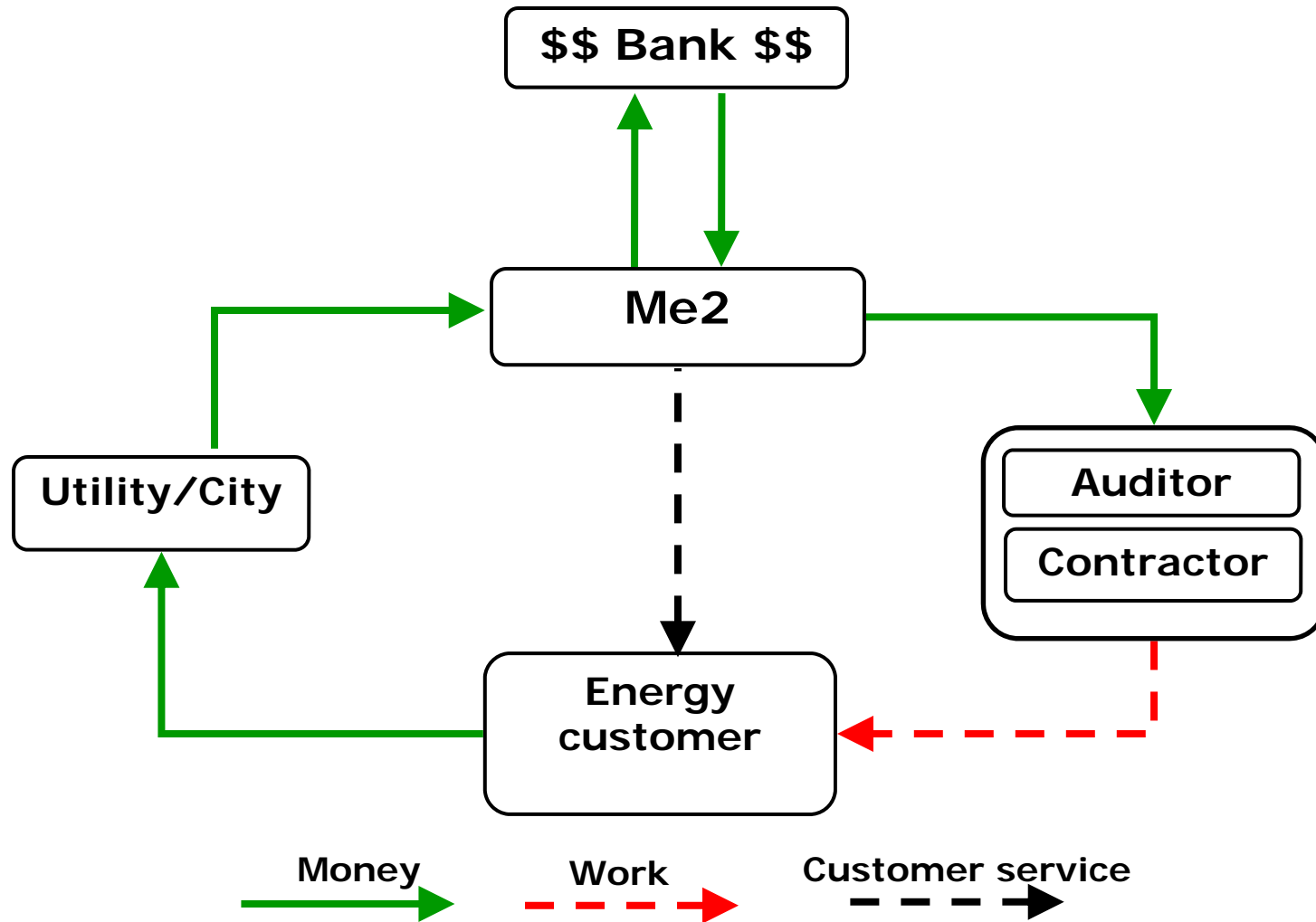
# An offer they can't refuse?

The Me2 energy efficiency service will buy and install cost-effective energy-efficiency measures in your home or business with no up-front payment from you and no new debt obligation. Costs of the service will appear as a new item on your monthly (energy/municipal services) bill. Even with these costs included, your energy costs will be lower than they otherwise would have been and you should start saving money immediately. Your payment obligation ends when you quit this property. It is also suspended during any period of measure malfunction, which we will repair at no cost to you.


# Elements of design

- Measures installed at no cost to customer and limited to those (a) with full payback  $\leq 75$  percent of useful life and (b) with annual costs (less rebates)  $\leq 75$  percent of annual savings. This ensures general cost-effectiveness and immediate benefit.
- Customer pays fuel-blind tariff on utility (or property services) bill, with standard penalties for non-payment. This lowers the cost of capital.
- Payment obligation for permanent measures assigned to property, not person (“runs with the meter”). This eliminates the transience problem.
- Lots of social marketing. This, we hope, builds community interest.
- Run like a business (with soul), to reassure both creditors and the community that their money’s both safe and well invested.

# Money and work flows



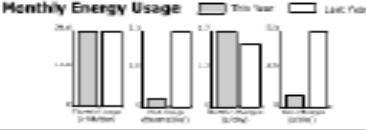
# Sample utility bill

**WE Energies** 

**JOHN Q PUBLIC  
JANE V PUBLIC  
123 MAIN ST  
MPTOWN WI 53110**

ACCOUNT NUMBER	DATE DUE	AMOUNT DUE
945-345-451	11/01/2005	\$170.40

**Monthly Energy Usage**



**Billing Summary**

Previous Balance 02/01/05 ..... \$128.24  
 Payment Received No 01/02/05 ..... \$135.04 CR  
 Balance As of 11/01/05 ..... \$ 88  
 Current Energy Charges 11/01/05 ..... \$182.45

**Total Amount Due** ..... **\$160.45**

---

**Electric Service for 02/01/05**

**Electricity Used**  
 Meter Serial No .....  
 Estimated Reading as of 11/01/05 .....  
 Actual Reading as of 11/01/05 .....  
 Total Electricity .....  
 Next Scheduled Meter Reading .....

**Gas Service for 02/01/05**

**Gas Used**  
 Meter Serial No .....  
 Actual Reading as of 11/01/05 .....  
 Actual Reading as of 11/01/05 .....  
 Difference .....  
 Heat Factor Adjustment (14 x 1) .....

**Total Gas Use** .....  
 Next Scheduled Meter Reading .....

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**Messages**

No Stamp? No Check? No Problem! Consider Online Bill or Automatic Pay Plan for free, fast, and money-saving ways to pay your energy bill. Visit our options for convenience and visit our e-mail in both programs! Sign Up today at [www.wi-energies.com](http://www.wi-energies.com) or 1-800-242-9137.

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**Contact Us Anytime**


Customer Service: 1-800-242-9137      Web Site: [www.wi-energies.com](http://www.wi-energies.com)  
 Electric Emergencies: 1-800-542-4797      Gas Emergencies: 1-800-242-9137

Please Recycle. Separate garbage and return with your payment made payable to WE Energies. Please mail 7 days after business hours.

0329669403265451 0001001 0243 0001001 02430

ACCOUNT NUMBER	DATE DUE	AMOUNT DUE	AMOUNT PAID
945-345-451	11/01/2005	\$160.45	

JOHN Q PUBLIC  
 JANE V PUBLIC  
 123 MAIN ST  
 MPTOWN WI 53110

**WE Energies** 

00001 0 0 945-345-451

*Your pre-Me2 average energy bill*

**\$170**

**Your energy consumption this month  
Me2 service charge**

**\$135**

**\$ 25**

**You owe**

**\$160**

# Effective Leveraging

Energy costs for 2,252,800 Wisconsin households		20% savings
Total cost of residential energy (gas, electricity, fuel oil, propane) consumption	\$4,572,463,104	\$914,492,621
Average <i>monthly</i> cost per household	\$169.14	\$33.83
Available capital under Me2-styled program		
Average available capital per household if amortized over 10 yrs at 6% interest and \$33.83/month		\$3,047
Total available capital (2,252,800 X \$3,047)		\$6,864,281,600
Current direct WI public spending on residential energy efficiency		~ \$70M
Ratio of available capital under Me2-styled program to current WI public spending		~ 100/1

# Future utility bill ☺

**Account Information:**  
 ACCOUNT NUMBER: 9463-345-491  
 DATE DUE: 02/09/06  
 AMOUNT DUE: \$170.00

**Customer Information:**  
 JOHN Q PUBLIC  
 JANE Y PUBLIC  
 123 MAIN ST  
 #MPTOWN WI 53110

**Billing Summary:**  
 Previous Balance 02/06/06: \$128.24  
 Payment Received No 01/02/06: \$133.24 CR  
 Balance As 01/06/06: \$1.88  
 Current Energy Charges 02/06/06: \$182.45  
**Total Amount Due \$181.45**

**Electric Service for 02/07/06 to 03/06/06:**  
**Electricity Used:**  
 Meter Serial No: J0894294  
 Estimated Reading as of 02/06/06: 5047  
 Actual Reading as of 02/07/06: 5154  
**Total Electricity Used 107 kWh**  
 Next Scheduled Meter Reading Date: 04/06/06

**Gas Service for 02/06/06 to 03/07/06:**  
**Gas Used:**  
 Meter Serial No: W0130395  
 Actual Reading as of 02/06/06: 938  
 Actual Reading as of 02/06/06: 938  
 Difference: 04  
 Heat Factor Adjustment (14 x 1.022): 14.308  
**Total Gas Used 14 Therms**  
 Next Scheduled Meter Reading Date: 04/06/06

**Messages:**  
 No Stamps? No Checks? No Problem! Consider Online energy bill. Visit our website for information and visit us 1-800-242-9137.

**Contact Us Anytime:** Customer Service Electric Energy

**Account Information (Bottom):**  
 ACCOUNT NUMBER: 9463-345-491

**Footer:**  
 WE Energies logo  
 JOHN Q PUBLIC  
 JANE Y PUBLIC  
 123 MAIN ST  
 #MPTOWN WI 53110  
 00001 2 3 9463-345-491

**Your pre-Me2 average energy bill** **\$170**

**This month's gross energy consumption** **\$135**

- Energy sold back to grid (\$ 30)
- Demand response savings credit (\$ 30)
- Negawatts credit for forward capacity (\$ 30)
- Climate exchange credit (\$ 30)

**Your net energy bill this month** **\$ 15**

**Me2 service charge** **\$ 25**

**You owe** **\$ 40**

# What you need to get started

- Some political leadership and regulatory cooperation
- A partner (utility or other service provider) with a bill running to property
- Some people looking for work
- A training provider willing to train those who need it, ideally integrated with social services
- Competent and experienced management
- A bank willing to loan, or somebody to bond

# For more information

[www.cows.org/me2](http://www.cows.org/me2)

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