

**Green Solutions**  
for Customers



# **PSE&G Multifamily Housing Program**

*Improving the Energy Efficiency of Affordable Multifamily  
Housing Through PSE&G's Residential Multifamily Housing  
Program*

**Innovative Program Design to Reach a Difficult Market**

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# **PSE&G's Service Territory is an Ideal Target Market But..... Multifamily Housing Faces Steep Market Barriers... or Opportunities?!**

- Thin operating margins & lack of available capital for infrastructure improvements
- Deferred maintenance with poor building conditions, ongoing deterioration
- Market sector consistently overlooked and underserved by existing energy efficiency programs
- Lack of knowledge about energy efficiency
- Relatively high energy usage
- Aging mechanical equipment
- Need to preserve affordability



# *Program Design = GO DEEP*

## *Eliminate Barriers... Dive into Opportunity!*

- Master metered and individually metered buildings accepted- 5 or larger
- Diversity of building types...
- Measures presenting impact to tenants and/or owners energy considered
- Partnership with NJHMFA

### **Common measures considered:**

- Boiler optimization / replacement
- DHW improvements / replacement
- Ventilation improvements
- Air conditioning including in-unit
- Insulation & air sealing
- Refrigerators
- Water saving devices, low flow aerators and shower heads
- Lighting in units (both pin based and screw in)

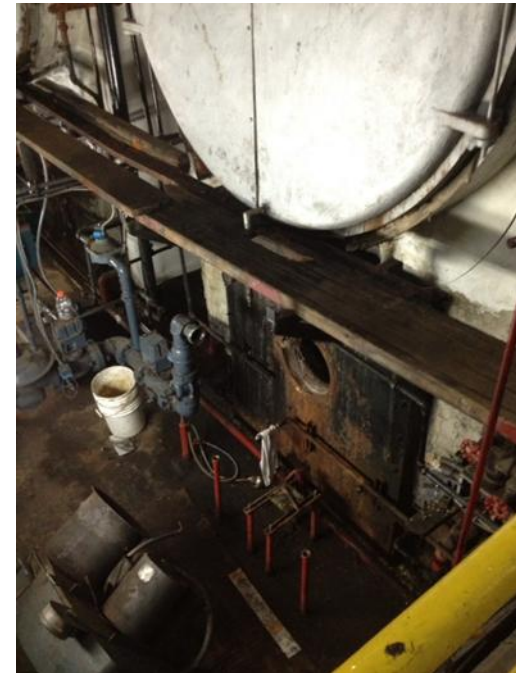


- Common area lighting and lighting controls

# Getting Started.... First Step?

## Determine Opportunity!

- Application and bill payment history review (PS E&G accounts)
- Free on-site energy audit with audit report
- Design / Engineering and bid-ready document support
- Contractor selection review (by Engineer hired by PSE&G)



# Start Construction!

- Multiple payments of cost of Project provided
  - 30% at start – execution of all documents
  - Multiple payments commensurate with progress.
  - 20% held until project close out
- Permanent “buy down” incentive to off-set the cost of energy efficiency upgrades
- On-site inspections to ensure compliance with program requirements
- Commissioning, Inspections and Construction Admin. CM allowance
- PSE&G utility on-bill financing 0% 5 or 10 yr. term



## **Multifamily Program Incentive Structure**

- Eligible measures must have a simple payback of < 15 years and are subject to PSE&G approval
- Project incentive will **buy down** project cost by 7 years, but not to less than 2 years. This is a permanent incentive
- Typical share of the project for the customer is 30%
- Projects must meet cost-effectiveness screening (TRC and UCT at the project level)  $TRC = 1$ .

**Most attractive element:** Program finances project costs; Customer repays share of costs at 0% interest on customers' utility bill over a period of **5 years** (10 years if HFMA mortgaged properties).

Item	Measure Description	Measure Cost (\$)	Measure Savings (\$)	Measure Payback (yrs)	PSE&G Buydown (\$)	Customer Total Share (\$)	Customer Monthly Payment (\$)
1	Apartment CFLs - MATERIALS ONLY, EST qty = 2,349	\$11,714	\$15,558				
2	Common area lighting- T12 to T8 upgrade, occupancy sensors	\$34,567	\$2,183				
3	Exterior lighting upgrade eHID replacement for (35) 1000w MH parking lamps	\$34,842	\$18,764				
4	1.5 gpm hand held showerheads and aerators - MATERIALS ONLY	\$15,968	\$14,609				
5	Thermostatic control valves for apartments (108 valves)	\$66,112	\$6,072				
6	Seal 112 kitchen and bath exhaust risers, add CAR dampers to top four floors, add fire dampers to all registers	\$986,439	\$67,442				
7	Condensing Hw boiler upgrade (8 units)	\$661,754	\$55,343				
8	Condensing DHw heaters, pipe insulation on mains (4 units)	\$176,116	\$11,675				
9	Variable speed DCw booster pump (4 units), Hw pumps (8 units)	\$68,707	\$8,783				
10	Energy STAR refrigerators - Estimated quantity MATERIALS ONLY	\$29,146	\$2,463				
11	Weather-strip stairwell trash room doors, trash chute, repair penthouse exhaust fan thermostat, wire stairwell fans to run only as needed per fire code.	\$77,904	\$6,239				
12	Programmable thermostat for 1st floor AC (4 units)	\$11,300	\$1,058				
13	Seal apartment AC units (916 units)	\$44,967	\$3,939				
<b>Project Total</b>		<b>\$2,219,538</b>	<b>\$214,127</b>	<b>10.4</b>	<b>\$1,498,892</b>	<b>\$720,646</b>	<b>\$6,005</b>

<b>CUSTOMER SUMMARY TABLE</b>	
Customer Payback from Savings	3.4 years
Measure Savings	\$214,127
Annual Repayment	\$72,065
Annual Net Cash Flow	\$142,063
<b>MONTHLY CASH FLOW</b>	<b>\$11,839</b>
<b>Payment Summary</b>	
First Progress Payment	\$581,350.55
Second Progress Payment	\$968,917.58
Third Progress Payment	\$387,567.03
<b>Total</b>	<b>\$1,937,835</b>

## Results to Date...

- Estimated 42-45 projects funded with \$39 million. Represents over 10K units and 280 buildings
- 13 projects currently in repayment
  - 113 buildings and 3072 units
  - 15-18 year average measure life
  - In 2012- kWh savings= 1,858,715 Therm savings = 352,135



# Lessons Learned

- Implement an audit approach best to fit opportunity
- Customer education and owner involvement important
- Dialogue with management firms & owners
- Accurate site energy analysis (baseline energy data)
- Overcoming site / access issues to move project to completion during and after audit and into construction
- Close out Process is Critical
- Accurate documentation
- Commitment to Cx

**Most attractive elements:**

**NO \$ out of pocket during participation**

**Program finances project costs;  
Customer repays share of costs at 0%  
interest on customers' utility bill over a  
period of 5 years**



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**PSEG**

*We make things work for you.*

**Thank you!**

**Questions?**

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