

Getting the Money!



**Paying For High
Efficiency
Equipment**

**Through the NJ
SmartStart
Program.**



Introduction of Statewide C&I Construction Program



Rockland Electric Company



South Jersey Gas



www.njsmartstartbuildings.com

September 26, 2005

NJ Clean Energy State-wide Energy Initiatives

Introduced May 9, 2001 (Last revised 5/5/05)

- Money comes from “**Societal Benefits**” of utility bill
- Provisions for residential projects, **commercial & industrial projects**, and renewable energy system projects
- New construction projects (other than K-12 public schools) must be in **Smart Growth** areas to be eligible for incentives
- General web site is www.njcleanenergy.com



Why Energy-Efficiency Programs?

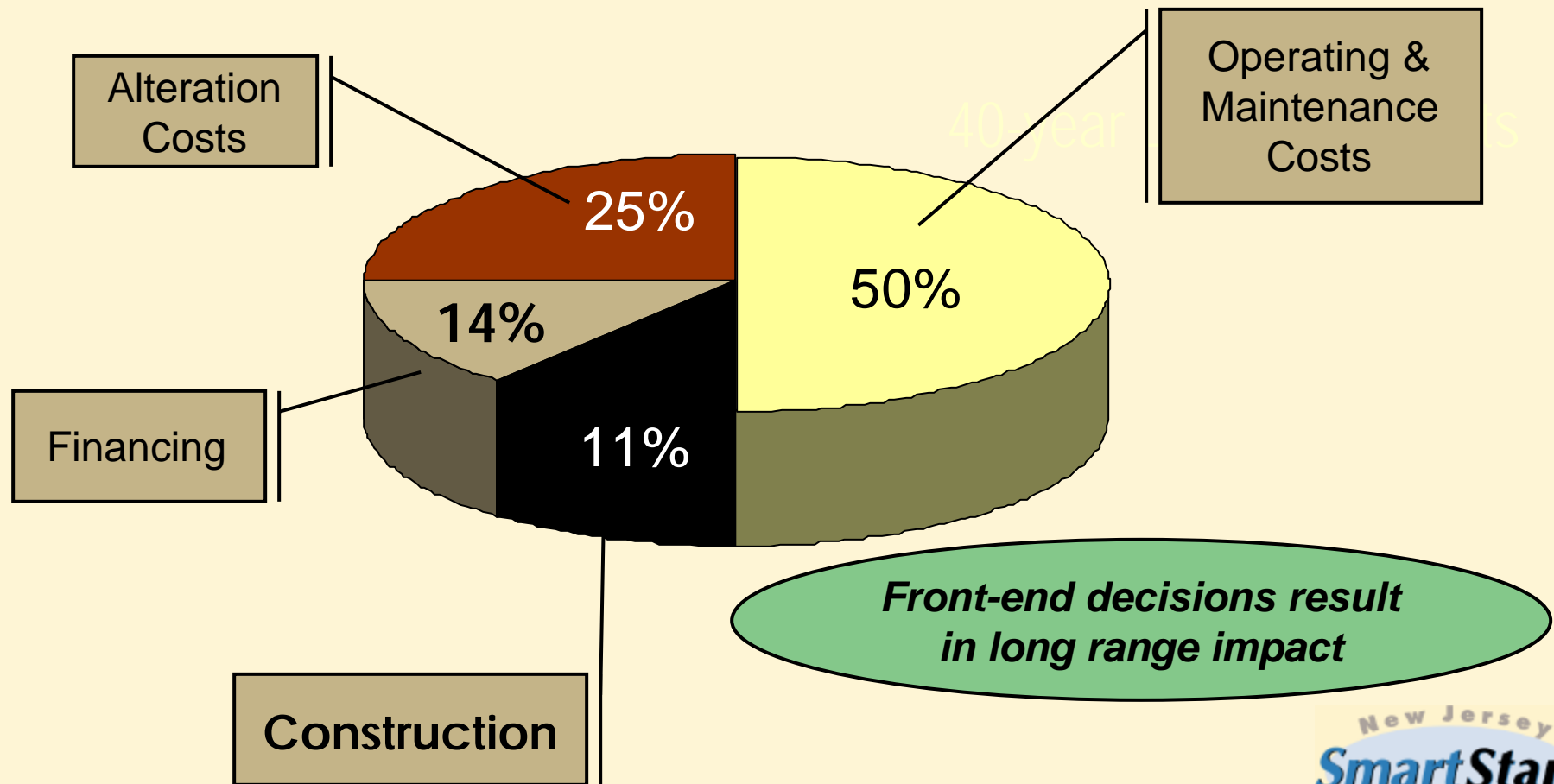
Energy-efficiency programs are designed to:

- Save energy and money by reducing the demand for energy
- Protect the environment
 - Less emissions
 - Cleaner air
- **Transform** the Market Place
 - change behaviors (hi-efficiency equipment)
 - encourage sustainable, efficient practice



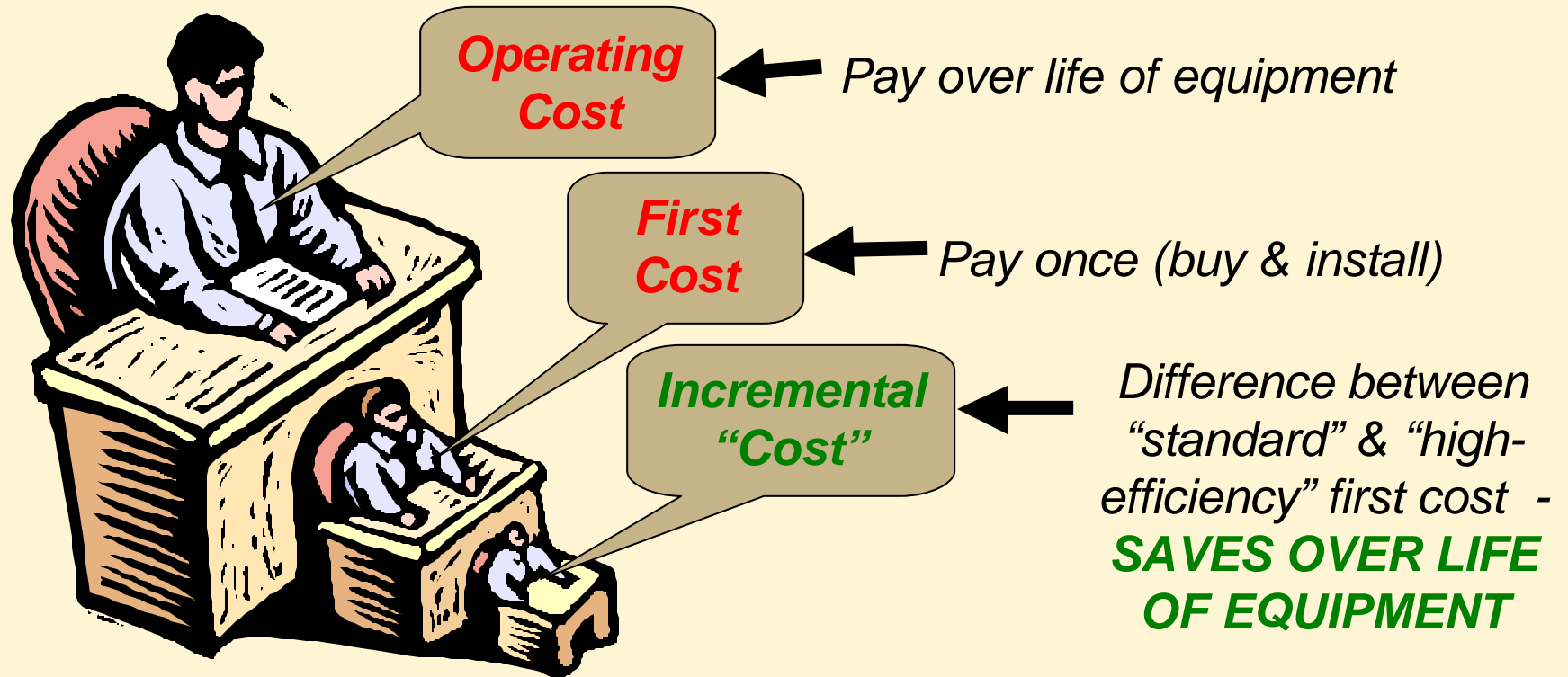
OWNERSHIP COST SUMMARY

(per ASHRAE 40-year building life cycle)



Let's Talk "MONEY"

First Cost - Operating Cost - Incremental Cost



Incentives cover about $\frac{3}{4}$ of the *Incremental Cost*!



Who Can Participate?

All New Jersey C&I electric and gas customers
(who pay societal benefits, i.e., not served by municipal utility)

Opportunities for all size and type projects

- **New construction** - must be in a NJ “Smart Growth” area or be a K-12 public school
- **Major renovation** (gut-rehab) and additions
- **Remodeling**
- **Equipment replacement**

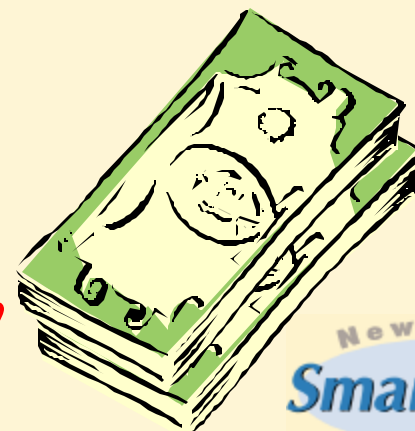


Available Incentives Include

- Design Assistance Grants [...more](#)
- Rebates for pre-qualified equipment [...more](#)
- Rebates for custom (non-pre-qualified) measures with energy-saving potential [..more](#)
- Cost-sharing for studies & commissioning [... more](#)
- Follow the rules [... go](#)

Where's the Real Money? [... more](#)

Long-term Operating Savings!



Design Assistance Grants

For Facilities of 50,000 s.f. or Larger

Comprehensive Design Support

At conceptual design stage of construction project

- Brainstorming: \$1,000 grant
- Energy Modeling (\$.10/sf to 50K/sf, then \$.03/sf)
- Incremental design costs up to \$5,000

Modified Design Support

After design complete, but before bidding

- Goal to re-consider energy saving potential
- Up to \$5,000 on case-by-case basis



Pre-approved Technologies

Categories:

- Electric Chillers
(\$8 to 170/ton) [...more](#)
- Natural Gas Cooling [...more](#)
(\$185 to \$450/ton)
- Electric Unitary HVAC Systems
(\$40 to \$125/ton) [... more](#)
- Ground Source Heat Pumps [... more](#)
(\$370/ton)
- Gas Heating (\$300 minimum /furnace or boiler)
& DHW Heating (\$50 minimum/heater) [... more](#)
- Variable Frequency Drives [... more](#)
VAV Systems or ChW Pumps (\$60 to \$155/hp)
- NEMA Premium Motors - 1 to 200 hp
(\$45 to \$700/motor) [... more](#)
- Prescriptive & Performance Lighting
(\$10 to \$75/fixture) [... more](#)
- LED Traffic Signal Lamps (retro-fit)
(\$35 for 8" and \$50 for 12" lamps)
- Lighting Controls
(\$20 to \$75/unit) [... more](#)

Prescriptive Chiller Incentive Range

Type	Size (tons)	Max kW/ton	Incentive Range per ton
Air-cooled	<= 150	1.20	\$14 - \$52
	> 150		\$8 - \$46
Water-cooled	< 70	0.75	\$16 - \$54
	70<150	0.75	\$25 - \$60
	150<300	0.62	\$16 - 141
	>= 300	0.53	\$12 - \$170

Notes:

1. May qualify under full load or partial (PLV) kW/ton, but not both.
2. Incentive for chillers with factory-installed VFD to be calculated at the appropriate PLV kW / ton - No extra incentive for VFD.
3. Appropriate ARI data must be supplied with application.

Natural Gas Cooling

Gas Absorption Chillers (based on full or part load COP)		
Size (tons)	Indirect-fired	Direct-fired
< 100	>= 1.1 F.L. COP \$450/ton	>= 1.1 F.L. COP \$450/ton
100 to 400	>= 1.1 F.L. COP \$230/ton	>= 1.1 F.L. COP \$230/ton
> 400 (only 2-stage)	>= 1.1 F.L. COP \$185/ton	>= 1.1 F.L. COP \$185/ton
Regenerative Desiccant Units		
Based on Process Airflow	Eligible when matched with core gas or electric cooling equipment. Incentive is \$1.00 per CFM	
Gas Engine-driven Chillers – Custom measure with efficiency levels and incentives determined on a “case-by-case” basis		



Electric Unitary HVAC Incentive Summary

Capacity (tons)	Unitary/Spit Air Conditioners and Heat Pumps *	
	Minimum Qualifying Efficiency	Incentive Amount
< 5.4	13.0 SEER	\$92/ton
>= 5.4 to 11.25	11.0 EER	\$73/ton
>= 11.25 to < 20	10.8 EER	\$79/ton
>= 20 to 30	10.0 EER	\$79/ton
	Packaged Terminal Systems (PTAC's)	
< 0.75	12.0 EER	\$65/ton
0.75 to 1.0	11.0 EER	\$65/ton
> 1.0	10.0 EER	\$65/ton
	Water Source Heat Pumps	
All Capacities	14.0 EER	\$81/ton
	Central DX Air Conditioning Systems	
> 30 to 63	9.5 EER	\$40/ton
> 63	9.5 EER	\$72/ton

* Note: Dual Enthalpy Economizer Controls Incentive @ \$250 per unit



Ground Source Heat Pump Systems

- Environmentally friendly and high-efficient way to heat and cool
- Uses thermal reserve of earth to exchange BTU's with the building

Ground source heat pumps	
Open Loop	16.0 EER (min) \$370 per ton
Closed Loop	

Natural Gas Space & DHW Heating

Gas-Fired Boilers		
Capacity	Minimum Efficiency	Incentive
< 300 mbh	85% or better AFUE	\$300 minimum
>300 mbh	Varies based on whether system produces hot water or steam - see web site for details	
Gas Furnaces		
All Sizes	90% or better AFUE	\$300 per furnace
Gas Water Heaters		
<= 50 gal.	0.62 or better energy factor	\$50 per heater
> 50 gal	Minimum efficiency and incentive varies based on unit capacity - see web site for details	
Gas-Fired Water Booster Heaters		
<= 100 MBH	\$35 per MBH	
> 100 MBH	\$17 per MBH	



Variable Frequency Drives

Centrifugal Fan Applications in Variable Air Volume HVAC Systems	
Controlled Motor HP	Incentive per total HP controlled: <u>retro-fit only</u>
Less than 10	\$155
10 < 20	\$120
20 and up	\$65
Chilled Water Pump Motors for HVAC Systems	
20 HP and up	\$60 per VFD rated HP
All other VFD applications must be submitted under Custom Measures with incentives determined on a case-by-case basis	

Notes:

- VFD must have an input line reactor or isolation transformer.
- VFDs must be installed in a system with pressure sensors (or other applicable sensor devices) in the flow stream.

NEMA Premium Motors

Three-phase motors

- Can consume 60% of a production facility's electrical resources
- Account for up to 50% of a commercial facility's HVAC electrical load
- Uniform N.E. regional program adopted by NJ SmartStart Buildings program

***NEMA Premium motors
have paybacks from
“immediately” to 3 years!***

Qualification for Incentives

- ✓ 1 to 200 hp, 3-phase, 1200, 1800 or 3600 rpm, ODP or TEFC
- ✓ Operate a minimum of 2,000 hrs/year
- ✓ Meet “**NEMA Premium**” Qualifying Efficiencies
- ✓ Incentives from \$45 to \$700
- ✓ > 200 hp, submit as Custom Project

Prescriptive Lighting Incentives - for existing facilities

Restricted Lighting Incentives		
Qualifier	Action	Incentive
<= 75 kW total load*	Convert T12 to T8 or T5 fixtures	\$20/fixture
> 75 kW, <= 50,000 sf		\$10/fixture
> 75 kW, > 50,000 sf	Use "Performance" rebate for T12 to T8 or T5 conversion or other non-prescriptive measures	
<= 75 kW total load	LED exit signs	\$20 per new fixture
Lighting Incentives for All Customers		
Technology	Incentive	Comments
Compact Fluorescent (new fixtures only)	\$25/1-lamp \$30/2-lamp	Must be hard wired and replacing incandescent lamps
Pulse-start Metal Halide**	\$45/fixture	Interior or parking lot lighting

* Size of an account is determined by 12 month average meter load

** For fixtures > 150 watts only

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Prescriptive Lighting Incentives (continued)

T5 & T8 high bay: only for retro-fit projects receiving new fixtures with specular reflectors of minimum 90% reflectivity

- For fixtures replacing incandescent, T12, or HID fixtures from 250-399 watts :
 - New fixtures must have at least 2 lamps and replace existing fixtures on a one-for-one basis.
 - Bottom of fixtures must be at least 14 feet from the floor.
 - Incentive is \$50 per fixture.
- For fixtures replacing incandescent, T12, or HID fixtures of at least 400 watts:
 - New fixture must have at least 3 lamps and replace existing fixtures on a one-for-one basis.
 - Bottom of fixtures must be at least 18 feet from the floor.
 - Incentive is \$75 per fixture.



Pre-qualified Performance Lighting

Technology & Qualifiers	Reference Base-line	Incentive Hurdle	Incentive
New construction and major renovation	ASHRAE Energy Standard 90.1 – 1999	20% more eff than baseline UPD (watts/sf)	\$1/watt/sf reduced below hurdle
Existing construction retrofit	ASHRAE Energy Standard 90.1 - 1999	10% more eff than baseline UPD (watts/sf)	\$1/watt/sf reduced below hurdle

- Incentive capped at \$30.00 per fixture
- Light levels must comply with non-residential NJ codes (e.g. schools).
- Refer to the ASHRAE 90.1-1999 tables 6-6(a), (b) & (c) for Unit Power Density (UPD) baselines for various areas (each area must be evaluated independently).
- Apply for incentive by completing a Performance Lighting Worksheet and a Performance Lighting Application.



Lighting Control Incentives

Fixtures controlled must comply with current Prescriptive Lighting incentive requirements

Types of Controls	Non-high bay apps	High bay applications
Occupancy Sensor – On/Off*		
Wall-mounted	\$20/control**	NA
Remote-mounted	\$35/control**	\$35/control
Daylight Dimming (Adjusts for natural lighting)	\$25/fixture controlled	\$75/fixture controlled
Occupancy Sensor – Hi/Lo with Step Ballast***	\$25/fixture controlled	\$75/fixture controlled

Notes:

* Must control 2 or more fixtures & can't have manual override to the "ON" position

** Existing facilities only

*** Space must be at least 250 square feet

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Custom Projects

Opportunities for non-pre-qualified technologies

- Custom Measure application and technical study
 - Savings over established “base-line”, for example, 20 kW minimum demand reduction or 50,000 kWh saved per year
 - Life-cycle costs vs. life-cycle savings
- Gas or electric project qualifies
 - Incentive of up to 80% of incremental cost of equipment above the baseline or a two year pay-back, whichever is less

Other Ways to Participate

- **Multiple Measures Bonus (up to 10%)**
- **Building Commissioning (CX)**
 - 50% of Commissioning Agent fee to \$30,000 maximum
 - For K-12 public schools only (at least 50,000 s.f. in area)
 - Must follow Comprehensive Design Path
- **Chiller Plant Optimization Studies**
 - When deciding to upgrade or replace chillers (500 tons min.)
 - Study grants to \$10,000 (on 50/50 cost sharing basis)



More Ways to Participate

Compressed Air Optimization Studies

- Typically improve system operating efficiency 20 - 50%
- 50/50 cost share up to \$7,500 to audit systems \geq 100 hp

Small Commercial & Industrial Customers

- Small customer prescriptive lighting path (\leq 75kW)
- Special technical assistance (pay-back analysis): up to 8 hours provided by utility

The SmartStart Buildings Rules

Submit registration form, application(s), and worksheet(s) for energy efficiency measures (EEM)

- Include equipment manufacturer's technical data sheet(s)
- Must mail or fax all forms to utility company

You must receive an Approval Letter prior to purchase:

- When incentives > \$5,000 for HVAC or motors
- For all other energy-efficiency measures

Install EEM's in accordance with the "approval letter" within the specified time frame



The SmartStart Rules (continued)

Submit “proof-of-purchase” documentation and the incentive will be **the lesser of:**

- The approved program incentive amount
- The actual cost of the energy-efficient measure

Allow 30 days for delivery of incentive after submission of all required documentation.

- **The Utility reserves the right to cap incentives at \$100,000 per utility account per calendar year.**

You are never too early to register a project!



SPECIAL ANNOUNCEMENT!!

COMBINED HEAT AND POWER PROGRAM

- Fuel cells = \$4.00/W, or 60% of project cost
- Microturbines, Internal Combustion Engines, Gas Combustion Turbines = \$1.00/W, 30% of project cost.
- **40% of project cost with a cooling application.**



Additional Program Information

To Learn More About the New Jersey SmartStart Buildings® Program, Visit:

www.njsmartstartbuildings.com

And, to Learn More About All of New Jersey's Energy-Efficiency and Clean Energy Programs, Visit:

www.njcleanenergy.com



www.njsmartstartbuildings.com

