



**ENRG Blanket  
goes to work  
immediately  
to save energy  
costs and reduce  
carbon emissions**

**Phase Change Energy Solutions**

**ENRG™  
BLANKET**

powered by BioPCM®

Phase Change Energy Solutions

# ENRG<sup>TM</sup> BLANKET

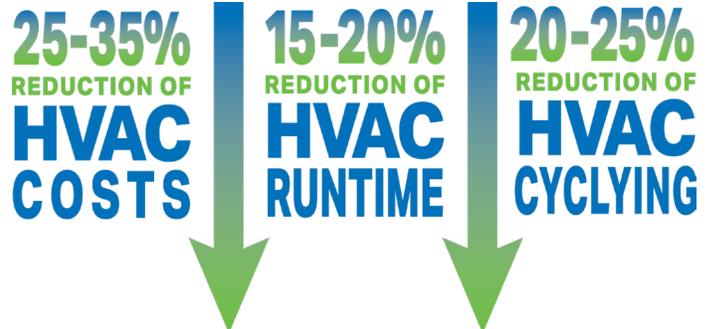
powered by BioPCM<sup>®</sup>

ENRG Blanket is a proven and cost-effective means to reduce energy consumption. It works together with traditional HVAC units, reducing HVAC power consumption by 25-35%, run time by 15-20% and cycling frequency by 20-25% — all while maintaining a consistent and stabilized temperature in accordance with industry standards.

In most locales, savings from ENRG Blanket will return its fully-installed cost in less than four years, and in many cases less than three. Additional savings are realized through peak load shifting in locales that charge demand fees, increased HVAC life-expectancy and reduced maintenance and repair costs.

ENRG Blanket consumes no power and requires no maintenance to provide consistent power energy savings over its estimated useful life of more than 85 years.

After years of testing and thousands of installs, representing over 1,000,000 sq. ft. globally, our customers consistently experience HVAC energy expense reductions of 25 – 35%. While every structure is unique, the simple payback (ROI) for most buildings is less than 4 years, for the fully installed cost. These results have been replicated in existing building renovation and new construction globally.



The quick, simple installation process can be achieved using only 4 people with two step ladders at a rate of approximately 1,000 sq. ft. per hour for a typical drop ceiling installation. ENRG Blanket has been installed in a variety of applications including several of the world's largest banks, one of America's premier school districts, multiple military bases and offices for a variety of Fortune 100 companies.

By increasing efficiency, ENRG Blanket can help your team reduce operating expenses and free up resources to support growth while also addressing global and corporate concern about the impact of power consumption on CO2 emissions, air pollution and climate change.



## Features & Benefits

### REDUCES HVAC POWER CONSUMPTION

ENRG Blanket reduces HVAC power consumption by 25-35%, run time by 15-20% and cycling frequency by 20-25%. Additional savings are realized in locales that charge fees for peak demand electricity usage.

### ATTRACTIVE PAYBACK PERIOD

In most locales, savings from ENRG Blanket will return its fully-installed cost in under four years.

### NO OPERATING COST, LONG LIFETIME

ENRG Blanket operates passively, requiring no power and no maintenance to provide consistent savings over its useful life of more than 100 years.

### EXTENDS HVAC EQUIPMENT LIFETIME

By reducing HVAC runtime and compressor cycling, ENRG Blanket extends HVAC equipment lifetime and reduces repair and maintenance costs.

### REDUCES CARBON FOOTPRINT

Recently installed in 1,500+ telecom shelters, BioPCM reduced annual power consumption by more than 10,000,000 kWh — a CO<sub>2</sub> emissions equivalent to 800,000 gallons of gasoline consumed or 7.5 million pounds of coal burned.

### EASY AND QUICK INSTALLATION

ENRG Blanket is delivered in 2'x4' sheets that are easy to handle and install. Phase Change Energy Solutions offers full-service domestic installation services through its network of national, certified installers. \

### RESPONSIBLY MANUFACTURED

BioPCM is non-toxic and non-corrosive and is manufactured using sustainably grown, renewable plant-based by-products.

### MADE IN THE U.S.A.

BioPCM is manufactured and packaged in Asheboro, NC.



ENRG Blanket is a proven cost-effective solution for reducing energy costs.

Non-toxic and non-corrosive, BioPCM® is a sustainably sourced plant-based phase change material.

With over millions of square feet of material installed worldwide, ENRG Blanket is a premier energy conservation measure.

## Proven results

The following data from two national branch bank installations illustrates typical and expected ENRG Blanket performance.

PCES partnered with a leading, Fortune 100, national bank company to demonstrate the energy savings from installing ENRG Blanket. The bank, a leader in building energy conservation, wanted to reduce energy consumption and improve thermal comfort in its local branches.

This customer wanted to achieve this while adhering to aggressive corporate environmental goals and adhering to their ROI requirements.

Two branch banks were selected in a geographic location with high energy costs. Both branches were compliant with modern energy code standards, well insulated and utilizing new efficient heat pump technology. The banks were retrofitted with ENRG Blanket over the drop ceiling, in order to optimize building energy performance.

In both cases, ENRG Blanket reduced total building energy consumption by over 10% and provided installed cost payback of less than 5 years. In one of the cases, the payback was less than 3 years.

### National bank branch I, New York, NY

2015 kWh	2016 kWh	Year-over-year delta	kWh Blended rate	Annual cost avoidance	Installed material cost	Simple return (years)
196,904	168,993	27,911	\$0.0184	\$5,135.58	\$13,020	2.5

### National bank branch II, New York, NY

2015 kWh	2016 kWh	Year-over-year delta	kWh Blended rate	Annual cost avoidance	Installed material cost	Simple return (years)
136,371	122,110	14,261	\$0.1620	\$2,310.28	\$10,328.00	4.5



Phase Change Energy Solutions  
**ENRG**<sup>™</sup>  
**BLANKET**  
 powered by BioPCM<sup>®</sup>

ENRG Blanket is powered by BioPCM<sup>®</sup>, a proprietary phase change material developed and manufactured by Phase Change Energy Solutions

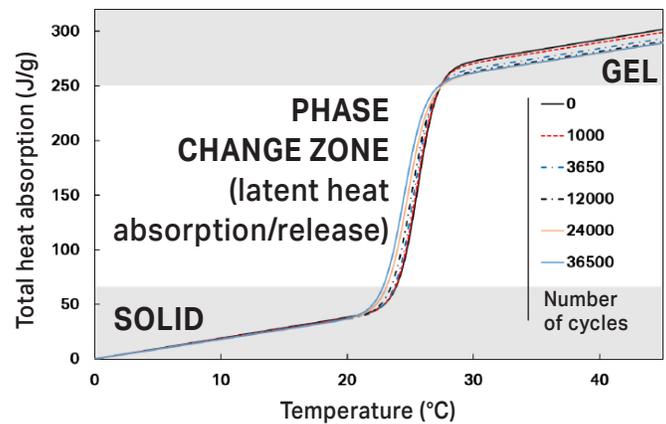
**25-35% REDUCTION OF HVAC COSTS**

**15-20% REDUCTION OF HVAC RUNTIME**

**20-25% REDUCTION OF HVAC CYCLING**

Phase Change Energy Solutions designed BioPCM to absorb and release enormous amount of heat during phase changes. At its target temperature, the BioPCM within a less than one-inch thick ENRG Blanket will store as much heat as a 24 inch thick block of concrete of equal footprint.

BioPCM is manufactured using sustainably-grown, plant-based by-products, is non-toxic, non-corrosive and has a demonstrated useful life of over 85 years.



Enthalpy curves of BioPCM<sup>®</sup> (Q25) demonstrate excellent energy storage performance through thousands of phase change cycles.

Phase change materials (PCM) are substances that absorb thermal energy when freezing. During a phase change (melting or freezing), molecules rearrange themselves and cause an entropy change that results in the absorption of "latent heat", meaning the temperature of the material itself remains constant and does not affect the temperature of the system.

When heat is applied to a block of ice, the ice and resulting melted water remain at 32°F until the phase change is complete, (there is no more ice). The heat is absorbed as latent heat until the ice completely changes phase into water.



Ice is a phase change material

Conversely, when heat is removed from a pool of water, the temperature of the water and resulting ice will not fall below 32°F until the water completely changes phase into ice.

When ENRG Blanket is installed, the BioPCM inside absorbs heat, (melts), when ambient temperature exceeds target room temperature, and releases heat, (freezes), when ambient temperature falls below target room temperature.

Through this recurring process, ambient temperature within the managed environment is stabilized around the target room temperature. As a result, less mechanical, (HVAC), cooling is required, and HVAC power consumption is greatly reduced.



Microscopic image of BioPCM during a phase change transition

## ENRG Blanket™ 5-year comprehensive warranty

Phase Change Energy Solutions warrants its ENRG Blanket products, (including BioPCM®), to be free from manufacturing defects and defects in workmanship for a period of 5 years from date of sale. Additional terms and conditions apply. Please refer to complete warranty terms.



### Install today. Save tomorrow.

To learn more about Phase Change Energy Solutions and our efficiency solutions

visit [www.phasechange.com](http://www.phasechange.com)

email [info@phasechange.com](mailto:info@phasechange.com)

or call 800-283-2887 (U.S.)  
336-629-3000 (international)

Phase Change Energy Solutions is a global leader in the development and deployment of next generation energy efficiency and thermal storage solutions that harness the power of BioPCM, the company's proprietary phase change material. BioPCM products are used to improve whole-building energy efficiency in retail, commercial, hospitality and industrial applications; enable safe transport of sensitive food and pharmaceutical products; and provide enhanced thermal storage capabilities for industrial processes.

Fortune 100 banking, telecom, hospitality and technology companies, as well as the U.S. government, have installed millions of square feet of BioPCM products to reduce operating expenses and environmental impact.

# ENRG Blanket technical specifications

ENRG Blanket Size – 24 in x 48 in x 0.5 in

**Assembly** Poly/poly film, poly/foil film, foil/foil film

**Target Temp** 73°, ENRG Blanket Q23  
77°, ENRG Blanket Q25  
80°, ENRG Blanket Q27  
84°, ENRG Blanket Q29

**Thermal Storage Capacity** 110 BTU/lb (255 J/g)

**Fire Rating** Meets or exceeds ASTM E84, UL 723 and ASTM E800-0 99 standards