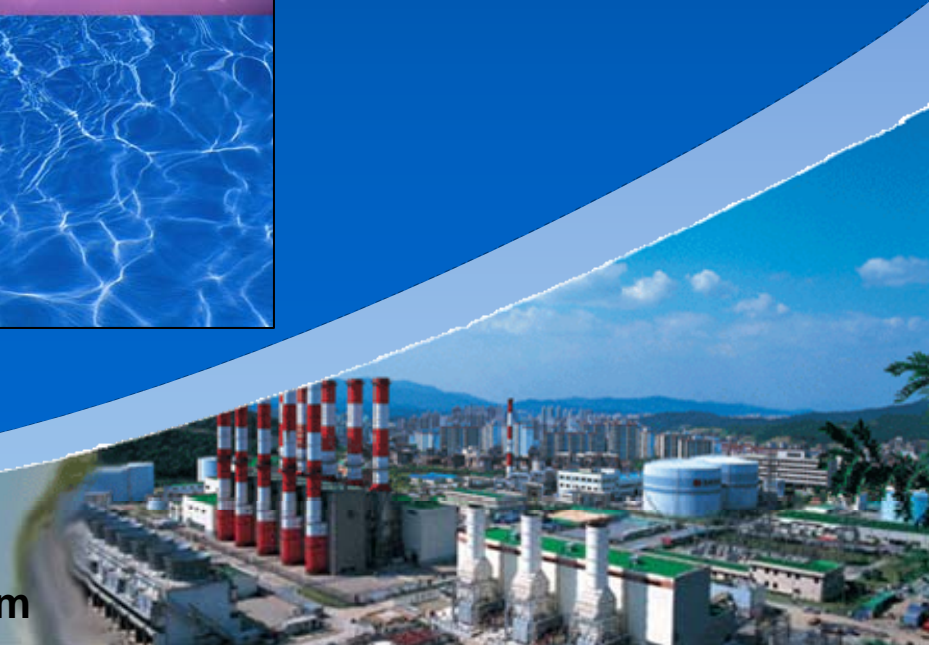


# A Convenient Truth: Nanosolutions in an Environmentally Conscious World



# *Climate Change – a Looming Crisis*

- An Inconvenient Truth brought global awareness to the issue of climate change
- Scientists around the globe are now working on impact projections
- Policy makers now realize that energy conservation, reducing greenhouse gas emissions and preparing for major changes in climate are top priorities
- **Does nanotechnology have the answer?**  
The U.S. Environmental Protection Agency and the UK's Dept. for Environment both think so.



# *The EPA, Defra & Nanotechnology*

The EPA's white paper on nanotechnology puts a new spotlight on nanosolutions to crucial environmental issues, from pollution to global warming.



***The white paper states:***

–“Nanotechnology has the potential to improve the environment, both through direct applications of nanomaterials to detect, prevent, and remove pollutants, as well as indirectly by using nanotechnology to design cleaner industrial processes and **create environmentally responsible products.**”

The UK's Department for Environment, Food and Rural Affairs (Defra) has released a report titled, “Environmentally Beneficial Nanotechnologies: Barriers and Opportunities.” Under the study, five nanotechnological applications were subject to detailed investigation with a finding that they could contribute to reducing greenhouse gas emissions by up to 2% in the near term and up to 20% by 2050. **Nansulate is mentioned as a product that has potential to contribute to reductions.**



# How One Nanotech Product is Already Making a Difference



# ***Reduced Energy Consumption - Industrial***

In several major Textile factories which use large amounts of LNG (liquid natural gas) to power their facilities and processes - Nansulate® has shown consistent reduction of energy used by 20%. This not only means the company saves money, but the environment also is saved by reduction of energy use.

Nansulate® is currently saving energy in at least 20 textile factories with more on the horizon.

*"Because of global warming, our duty is to make use of energy as efficiently as possible; wasted energy is wasted national wealth. This is why I highly recommend this technology to all of the textile industry and other heat using industries."*

*-Henateks A.S. - Eyüp Sözdinler*



**Henateks**, a large textile company, used Nansulate® High Heat insulation and corrosion prevention coating on its equipment and decreased its natural gas costs by 10% in only 4 months.



*Textile Dyeing Machine  
insulated with Nansulate®*

When their project is fully complete, they are estimating a minimum of 20% reduction in energy usage.

Financially this equates to a savings of approx. \$580,000 USD per year for this one facility.



**Erenko Tekstil** used Nansulate® High Heat on their heat exchangers and dyeing machines. This resulted in a reduction by 25% the amount of time used to heat three tons of water, a process that the exchangers cycle through several times daily.



*Heat Exchanger  
insulated with Nansulate®*

This facility achieved a minimum of 20% reduction in energy use, and 10% reduction in unit material production cost.

Nansulate® also improved dye lot reproducibility (consistency in the color of the dyed fabric) by providing an even temperature for the equipment.



# *Reduced Energy Consumption - Residential*

Homeowners who use the product report reduced energy consumption in the range of 20%-40%. Imagine if a whole town was using this product and reduced their residential use of energy by 20% in total. The impact that would make is significant.

Requirements continue to increase world-wide for commercial developers to incorporate energy saving technologies into their building projects. This means that these developers are now looking for technologies that can help them meet these requirements in a cost effective way.



**Connecticut Homeowners**, were looking for an easy way to reduce their heating bills during the cold season and make their home more energy efficient.

Reduced carbon emissions for this project:

6,317 lbs annually by reducing heating oil use.



After coating their walls and attic with Nansulate as a thermal barrier, they found that their annual use of heating oil was reduced by 41%

Before Nansulate 4 year Average	After Nansulate 1 <sup>st</sup> year
\$1,618.21 per year*	\$952.65 per year*

\*Cost per year was calculated using the July 16, 2007 figure for the average Connecticut regional retail heating oil price (\$2.61 per gallon). Source: ([www.opm.state.ct.us](http://www.opm.state.ct.us)).

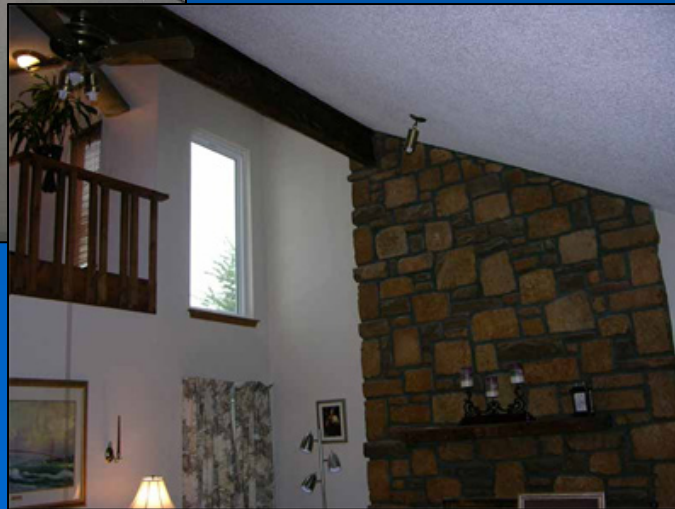
Carbon emissions data calculated from [www.epa.gov](http://www.epa.gov).



Nansulate® is versatile as a clear coating over a variety of surfaces, is non-toxic and mold resistant.



*Nansulate® providing insulation for homes and commercial buildings*



**“We are really pleased with the 40% savings in energy cost and the swiftness at which it (the house) cools off and heats up...You could heat that house with a votive candle and a blow dryer now that it has the nanotech coating on it.”**

**-Marc Izzard, New Mexico**



# *Other Major Industries where Nansulate® is Making a Difference*



**Oil & Gas**



**BioFuels**



**Food & Beverage Manufacturing**



**Automotive**



**Commercial Buildings**



# *Green Nanotechnology*

How does Nansulate® fit into the ‘green nanotechnology’ category?

- Reduces energy consumption in industrial, commercial and residential settings
- Reduces carbon emissions by reducing energy use
- It is water-based, non-toxic, low VOC
- The nanotechnology used involves micro-sized particles that have nano-scale architecture
- It acts as a remediation treatment for lead and mold
- It is safe for use by consumers, doesn't add to greenhouse emissions



With focus on Green or Earth Friendly nanotechnology, we can answer the call of the EPA and make a positive difference in the world's energy consumption by creating and promoting new processes and products which improve our climate and the future.

