



INNOVATIONS FOR LIVING™

# MARKET

for composite solutions

JANUARY 2008

# VISION



Inside the crystal ball:  
a report on the global outlook  
for 2008



Changing the future  
of the planet



Awards highlight  
innovation focus

An expanded  
business supporting  
your sustainable  
development



OCV Reinforcements



OCV Technical Fabrics



OCV Non-Woven Technologies

## NEW CEO



Owens Corning has a new chief executive officer: Mike Thaman, who worked side by side with now-retired CEO Dave Brown for the past six years, officially took over as CEO on December 6, 2007, in addition to his role as chairman of the board.

Thaman is only the seventh person to be CEO during Owens Corning's 69-year history. The 43-year-old Thaman was named to the company's board of directors in January 2002 and became chairman of the board later that year. He was the company's chief financial officer from 2000 to September 2007 when Duncan Palmer replaced him.

Thaman joined Owens Corning in 1992, and he held positions in manufacturing, corporate development and international business. In 1997, he became a corporate vice president and president of the company's engineered pipe systems business, headquartered in Brussels, Belgium. He was named president of Owens Corning's exterior systems business in 1999.

Before coming to Owens Corning, Thaman spent six years as a strategy consultant at Mercer Management Consulting where he was a vice president in its New York office. His consulting activities were primarily focused on strategies for creating shareholder value with manufacturing and consumer products companies.

Thaman has a Bachelor of Science degree in electrical engineering and computer science from Princeton University where he graduated with highest honors. He is a member of the board of directors for Florida Power and Light.

## MARKET VISION for composite solutions

Welcome to the first issue of *Market Vision for Composite Solutions*, a new magazine for customers of the Owens Corning Composite Solutions Business.

Like our new and expanded business, this magazine incorporates the best practices of both former units and strives to be better and more useful than ever before. It replaces both *Composite Solutions* and *High Vision for Composites*, but our objectives are the same: to keep you informed about our business and provide ideas that help you prosper and grow your business. We will communicate our vision for the future as we work to replace traditional materials and expand the market for composites.

We hope you enjoy this publication and welcome your feedback and suggestions at [MarketVision@owenscorning.com](mailto:MarketVision@owenscorning.com).

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# EDITORIAL

## BUILDING THE FUTURE TODAY



The economic outlook for 2008 is covered at length in this magazine. While prospects for the year vary widely from region to region and market to market, one thing is clear – application development must continue to be our focus.

Composites industry growth was very strong in the beginning as the benefits of fiberglass-reinforced plastics became known. The trend line is no longer as steep now that we have established a multi-billion-dollar industry but strong growth continues for composites.

During the past 20 years or so, composite use has grown at about twice the rate of overall global economic growth. The industry has done that by continuing to develop applications that take market share away from our real competition – aluminum, steel, concrete and wood.

For today's strongest markets we owe a debt of gratitude to the people who did the pioneering work in infrastructure and wind energy. Where would our business be today without them? And more importantly now, what are we doing today that will help keep us busy in the future?

The ongoing challenge for our industry is to get designers comfortable with designing, specifying and using composite materials. Generally, the composites industry has done well. But the playing field is not static. The aluminum industry continues to spend hundreds of millions of dollars per year to develop new lightweight technologies and cost-efficient processes. The steel industry is looking to newer corrosion-resistant and lighter-weight materials to maintain their market share.

That's why continuing work on application development is the key to our individual and collective success in the future.

We need to continue to find ways to truly get ingrained in the market and listen to what end-use customers are looking for. We should find ways to work with you, to see the opportunities and give them the technical resources and expertise they need to use alternative materials that transform their products. Composite industry innovations will come when we clearly understand where they are needed.

We look forward to working with all of you to build the future of our composites industry together.

Chuck Dana  
President  
Composite Solutions Business  
Owens Corning

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# Inside the Crystal Ball: a report on the global outlook for 2008

## Composites Continue to Outgrow Economy

The business outlook for composites in 2008 varies widely by region and market but one important factor seems to be the same everywhere – the industry is expected to continue growing at twice the rate of the global gross domestic product (GDP) as it has for the past 20 years or more.

Global composite use is forecast to grow another 5 to 6 percent in 2008. This is on top of a 5 percent increase in composite use during 2007 and in spite of slowing overall growth and the negative impact of the U.S. credit crisis.

Economists are forecasting a slight global slowdown from an estimated 3.8 percent global GDP growth in 2007 to growth of 3.3 percent in 2008. There is concern with the slowdown in North America, and to a certain extent in Western Europe and other developed areas, but economists still forecast healthy growth in emerging markets.

Two key factors are responsible for the continuing global increase in composite use. The first is regional growth in which developing countries – China, India, Brazil, the Middle East and several Eastern European countries – are experiencing rapid growth in composite use. This regional growth will more than compensate for the downturn in North America.

The second growth factor is the continued expansion of two key market segments: non-residential construction and renewable energy. Non-residential includes industrial plants, refineries, mining, and infrastructure. Renewable energy is being driven most notably by wind generation.

Growth at double the rate of GDP is an indication of how composite materials continue to take market share away from traditional materials. It also reflects the impact of developments in the area of renewable energy and sustainability as a result of the Kyoto and Bali accords being implemented around the world.

Demand for reinforcements with this type of growth also puts pressure on supply. Owens Corning is committed to working closely with customers to ensure they are able to get innovative products in the quantities they need to support their growth, such as WindStrand™ high-performance reinforcements for the wind energy market and XStrand™ high-performance reinforcements for infrastructure applications. The company recently announced plans to add capacity for these and other products to help ensure supply.

The following reports discuss the outlook for OCV Reinforcements in Asia Pacific, the Americas and Europe, as well as the OCV Technical Fabrics and OCV Non-Woven Technologies businesses. The reports provide insight from the Owens Corning leaders engaged in the composites industry.

# Asia Pacific

## Set to Become Largest Reinforcements Market

By Sangkyoo Han, Ph.D.  
Vice President and Managing Director,  
Asia Pacific  
OCV Reinforcements

There is a favorable wind blowing at the back of the composites industry in Asia Pacific and that wind is expected to make the region the world's largest market for glass fiber reinforcements for polymers in 2008\*. Although the overall economy is not expected to grow as much as it did in 2007 – we expect less than 1 percent slower growth – it is still expected to be the world's fastest growing region by a wide margin.

China will again be the fastest growing country and in 2008 is expected to become the world's second largest composites market. We also expect to see solid gains in India, with both China and India experiencing growth in the range of 15 to 20 percent in 2008. For Korea and Japan, we expect their composite markets will be similar to their gross domestic product (GDP) growth of 5 to 6 percent and 2.3 percent, respectively.

The big drivers in the region are energy and infrastructure. The composites industry is expected to benefit from rising world energy costs because higher prices will continue to drive demand

for wind energy. Infrastructure projects in Asia Pacific include municipal pipe in China, India and Australia.

The risks we see include inflation and the spreading unease in the global financial markets. And a big risk is the growth in China. If something happens to slow growth in that country, the whole region will be affected.

Demand for single-end roving products will remain strong because of its use in wind energy and the Infrastructure markets for pipe. The automotive industry will use chopped strands for thermoplastic compounding and some single-end products that will be converted to chopped strand for thermoplastics.

As I talk with customers about the outlook and prospects for 2008, I encourage them to forecast carefully and work closely with their suppliers to be sure they get the materials they need to meet their commitments.

\* Excluding wet-use chopped strands, which are mostly used for roofing mat, gypsum wallboard and vinyl flooring



Infrastructure projects in Asia Pacific include municipal pipe in China, India and Australia.



To commemorate the launch of OCV Reinforcements and OCV™ Technical Fabrics, both merged companies were symbolically "married" in Shanghai, China.

# Europe

## Energy, Infrastructure and Automotive Drive Growth in Europe

By Arnaud Genis  
Vice President  
and Managing Director, Europe  
OCV Reinforcements,  
Global OCV™ Technical Fabrics and  
Specialties

The year that just ended was a good one for most of the European economy and for composites in particular, and I am reasonably optimistic that 2008 will be another good year. The fundamentals underlying the economy are really good despite rising energy prices and a financial crisis threatening to expand.

The big drivers for composites growth in Europe continues to be infrastructure and energy. Wind energy continues to grow at a double-digit rate and this massive expansion is regularly experiencing materials bottlenecks. The pipe market is also very strong at the moment in both Europe and the Middle East. Countries benefiting from high oil revenues are investing massively in infrastructure. In Europe, old water and sewage systems are being upgraded with composite materials.

After a slow start, the automotive market improved throughout 2007. In particular, Eastern Europe is rapidly expanding its car fleet and this is driving demand for chopped strands and other products used in thermoplastic compounding. Consumer spending is also growing in Eastern Europe.

There are also some concerns. The high value of the euro is hurting exports from the region and this same factor is also attracting Chinese imports to the continent. This forces companies to be more innovative and to boost their productivity. The real estate market in Spain is expected to decline but I believe it will experience a soft landing after a sustained period where it was very buoyant.

All things considered, then, we expect to have another good year with the composite industry continuing to grow at twice the rate of GDP.

*After a slow start, the European automotive market improved throughout 2007.*



## Energy, Infrastructure Also Growing in Americas

By Marcio Sandri  
Vice President and Managing  
Director, Americas  
OCV Reinforcements

We have mixed feelings about the outlook for 2008. On one hand we are concerned about the decline in the housing market and its potential for contaminating other markets. But we also see segments that are performing better than we expected, such as infrastructure. As a result, we are being cautious and planning conservatively while working very hard to capitalize on the opportunities that exist and continue to drive the substitution of composites for traditional materials.

The slowdown in the housing market in North America is largely due to the reduced availability of credit. That has also weakened other markets related to housing, such as shingles made with glass fibers, FRP plumbing components, other furnishings and appliances.

The bright spots in the Americas are infrastructure and nonresidential construction, especially investments related to energy, which includes ethanol production facilities, mining, refineries and other manufacturing structures. High oil prices are prompting investments in high-pressure epoxy pipe, tanks and equipment for processing facilities and cooling towers for power plants. Wind energy also continues to grow rapidly.

We see a very different market in Latin America compared to North America. For example, the automotive industry is setting sales records in Argentina and Brazil, and home construction is also strong in those countries. While those markets are much smaller than the U.S., it does bring some balance to the business when considering the Americas as a whole.

Some companies are taking advantage of these complementary markets by broadening

the scope of their business. Companies in Latin America are expanding sales into North America to take advantage of the larger market while businesses in the U.S. are moving operations to Latin America for lower costs.

We expect the use of composites in Latin America in 2008 will grow in the range of 4 to 5 percent, while GDP growth is expected to be about the same at 4.7 percent. For all of the Americas, we expect the use of composites to be down slightly, excluding wet-use chopped strands.

The key to outpacing GDP growth continues to be materials substitution. One significant factor here is the current high prices for aluminum, steel and other competitive materials, which makes composites even more cost-effective.

One trend we see that will help in this regard is the consolidation taking place as companies join forces to become stronger. This not only involves mergers and acquisitions, but also joint ventures, technology alliances and informal partnerships. We definitely see more conversations within the industry where companies are seeking to join forces with others to become stronger.

This kind of joining forces is needed all along the value chain because I do not believe we are as well connected as some of our peers in competitive materials industries. Too often we try to work independently, when an alliance of companies would be much more effective.

In summary, I believe there will be plenty of opportunity for composites in 2008. We just need to open our eyes, recognize them and work together to go after them aggressively.

*High oil prices are prompting investments in cooling towers for power plants.*

### Capacity, Environmental Upgrades Announced

Owens Corning recently announced a series of investments to expand capacity while improving the environmental performance of its facilities.

- A multimillion dollar capital project is underway to install production capacity for high-performance reinforcements at the company's plant in Mexico City. The investment will include all the technology for high-performance reinforcements at Owens Corning and the new line is expected to start production this summer.
- Another multimillion dollar project is increasing capacity for dry-use chopped strands (DUCS) in Anderson, S.C., U.S., by September. In Jackson, Tenn., U.S., the furnace is being converted to less energy-intensive processes.
- Owens Corning also has aggressive plans to convert newly acquired plants to its Advanced Melting Technology. The plans call for all glass melters to be converted by 2012. Some will be converted during their current campaigns while others will be converted at the earliest opportunity for downtime.

*A new line for high-performance reinforcements production is expected to start this summer at the Owens Corning plant in Mexico City.*



# Wind Energy Powers Fabrics Outlook

By Geert de Landsheer  
Managing Director  
OCV Technical Fabrics

There is also a favorable wind helping the global fabrics business and it is the same one fueling reinforcement growth in the three regions – wind energy.

For technical fabrics in 2008, we expect the U.S. market will continue to be very soft while Europe slows and Asia continues to be strong. But as a result of the increasing demand for renewable energy, fabric use in the wind energy market will grow faster globally than the overall regional economies at about 15 percent. Other markets are expected to follow the general economic trends in the regions.

Customers making products for wind energy are expanding their capacity on a global scale, and there are now several large and well-established energy infrastructure companies in the business that are really serious about being significant participants in renewable energy, reflecting the fact that wind energy is now a significant part of the energy business. The use of solar panels is also growing but slower than wind energy.

While wind energy is expected to be a bright spot in all regions, Asia Pacific and Latin America have the additional benefit of having several emerging economies in the region. Another trend benefiting the use of technical fabrics is the shift from open- to close-mold processes, which has been going on for some time. We see that trend continuing in 2008.

The biggest challenge the fabrics business will face is to meet market demand of direct or single-end roving in certain regions of the world. Furthermore, it will be interesting to see how the exports out of China evolve for fabrics with the weak dollar, the strong euro and the change in tax regulations.

To summarize, in 2008 we expect renewable energy and wind turbine production to be the bright spots in the global marketplace while we carefully navigate our way through shortages of direct roving.

*Both wind energy and the shift from open- to close-mold processes are trends benefiting the use of technical fabrics worldwide.*



# Market Transformation Delivers Non-Woven Growth

OCV™ Non-Woven Technologies expects to see strong growth again in 2008. While some of the traditional segments of the business are tied to the trends of the residential construction market, many of our newer specialty products focus on the global industrial, commercial, and infrastructure markets which are forecast to have continued growth through 2008.

In addition, we take pride in working closely with our customers to develop value-added solutions and create partnerships that can transform markets. This approach has resulted in several successes where customers have successfully implemented these solutions and outperformed the market in sluggish conditions.

For example, in the commercial construction market in North America our gypsum business was up significantly and will continue to grow in 2008 because our glass veil is part of a new mold- and mildew-resistant wallboard that is replacing paper-based products. Another application set to grow is duct board faced with black specialty glass non-wovens. Growth here is driven by increased demand in energy efficiency and acoustic benefits over traditional sheet metal ducting.

We also expect a further market transformation in North America and in Eastern Europe in the cushioned vinyl flooring segment where glass is replacing felt, resulting in floors that are more comfortable, quiet and aesthetically pleasing.

Other key developments in markets and applications that will provide substantial growth in 2008 for OCV Non-Woven Technologies include growth of TruPave® engineered paving mat in the pavement interlayer market as well as glass non-wovens for wall coverings and high pressure laminates. Further market penetration is expected in wind energy, commercial battery applications and coated facers for polyisocyanurate foam insulation boards for commercial roofing and other applications.

By Steven Vermeulen  
Managing Director  
OCV Non-Woven Technologies

## OCV Non-Woven Technologies Transforms Business, Markets

In a little more than a year since its formation, OCV Non-Woven Technologies has already established a pattern of listening closely to its customers and working with them to create value-adding products and solutions. This focus has resulted in several successes where customers implemented new solutions and outperformed the market in sluggish conditions.

“While some traditional segments of the business are tied to trends in the residential construction market – for instance sales into the residential roofing market in North America were down 30 percent in 2007 – many of our newer specialty products focus on the global industrial, commercial, and infrastructure markets which are forecast to have continued growth through 2008,” said Steven Vermeulen, Managing Director, OCV Non-Woven Technologies.

One example is a new product that resulted from a successful collaboration with Georgia-Pacific Gypsum LLC that began nearly five years ago. The first products to be introduced from this partnership were the non-woven glass mats that helped launch the DensArmor Plus® product line of paperless gypsum panels, where Owens Corning glass veil is part of moisture and mold-resistant wallboard that is replacing paper-based products.

“Because of that initial success, we were able to continue collaboration with Georgia-Pacific to develop and introduce a non-woven facer for its DensGlass Gold® exterior sheathing product,” said Jeff Fox, Business Manager, OCV Non-Woven Technologies.

OCV Non-Woven Technologies also partners with market-leading companies



In late November, 2007 OCV Non-Woven Technologies signed two agreements with Vitruvan Textilglas GmbH, a leading supplier of glass-based wall covering materials in Europe.

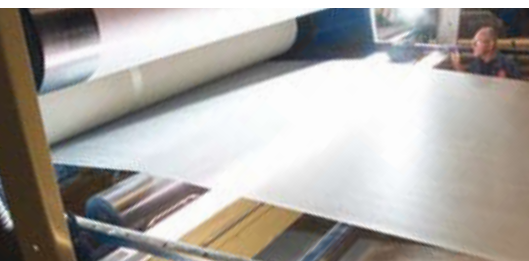
to accelerate market transformation. For example, in late November 2007, the business signed two agreements with Vitruvan Textilglas GmbH, a leading supplier of glass-based wall covering materials in Europe.

One agreement calls for a long-term supply of special mineral-coated glass tissue for use as wall covering. The other is a joint development agreement that will provide the basis for future growth through newly developed wall covering materials based on glass veils.

With product developments and partnerships focused on large volume applications and substantial potential growth, Vermeulen said the business is also evaluating capacity additions to keep up with anticipated customer needs.

“This is a very exciting business in terms of working with customers to create solutions and effect market transformation,” Vermeulen said, “We are just scratching the surface of what is possible.”

Many of the newer OCV Non-Woven Technologies specialty products focus on the global industrial, commercial, and infrastructure markets.



# Customers Benefit From OCV Speed, Energy

In the few short months since their creation, OCV Reinforcements and OCV Technical Fabrics are already delivering benefits resulting from the combination of two composite business leaders.

A focus on “speed-to-market” has Owens Corning working to bring innovations and additional product to the market quickly by using the combined talents and facilities of the new organization. The business is also being responsive to customer needs and ensuring that the new organization is easy to do business with.

innovative thinking and customer benefits the new organization is delivering.

## **Seamless ongoing reliable service**

A team comprised of sales, customer service, logistics and warehouse operations is looking at ways to provide seamless ongoing and reliable service within each region ensuring our global supply network is satisfying customer needs.

Service operations in several locations have been reviewed to better understand how they currently operate. In addition, customers are being interviewed to define the value Owens Corning provides and how the company can increase that value.

The team has identified some solutions to implement quickly to improve performance in the next few months as well as some longer-term improvement recommendations.

## **Customer support efforts**

During a sales meeting in the Americas, teams from OCV Reinforcements and OCV Technical Fabrics, along with support team members from production planning and finance, met to coordinate customer support efforts so that going forward customers won't have to work with multiple sales people. “We can present a single face to customers in the marketplace and deliver more value,” explained Jeff Davis, Sales Leader, Americas.

For an external perspective, customer Jeff Miller, President of Comfort Line, told the group how his company interacts with Owens Corning and how its products and services help him grow his business.



*OCV Reinforcements and OCV Technical Fabrics businesses are being responsive to customer needs and ensuring that the new organization is easy to do business with.*

“Our goal is to make doing business as convenient for the customer as possible, in a manner that they will see minimal changes,” said Dick Furber, Sales Leader, Europe, Middle East and Africa.

Here are examples of activities in various areas and organizations that have already been implemented or are being undertaken shortly that demonstrate the kind of

### **A partnership with suppliers**

In early December, key suppliers in China, Europe and the United States met with CSB leaders to talk about CSB's expectations, business strategy, focus on customer needs, market conditions, competitive challenges and the need for environmental responsibility.

Angelo Karasavidis, Global Sourcing Director for CSB, said the objective of the meetings was creating a partnership in which suppliers could help the company remain competitive and serve its customers.

"Suppliers represent a critical component of our value chain, and it is important to include them in our communication process," he explained. "Supplier meetings are an excellent opportunity to share ideas, issues, strategy and vision of our company, as well as have our management meet suppliers."



*The sales team is working to present a single face to customers and deliver more value.*

Several other supplier days were held worldwide in January to spread the same message in all locations.

### **Product Availability**

In early November, technical and engineering teams met at the Hangzhou, China plant to plan an upcoming furnace rebuild. Instead, by collaborating on site, the team discovered new options by

combining technologies from the two parent companies. The team developed an option that did not require the furnace rebuild and, at the same time, provided a 30 percent expansion of the facility's production – to include single-end or direct roving – which will allow the business to better serve customers as demand for the product is growing. In addition, the changes will reduce energy intensity and provide a significantly smaller environmental footprint.

In another example, a small team from the Jackson, Tenn., U.S., plant will help the Thimmapur, India, plant convert its furnace to boron-free Advantex® technology – an example of the direct impact and synergy created by OCV Reinforcements.

### **Science & Technology**

To encourage the exchange of technical expertise, S&T leaders have created a "mon collegue" list to pair talent



*The expansion of the Hangzhou China facility's production will allow the business to better serve customers.*

from Owens Corning with talent from Vetrotex. The pair will exchange know-how, technology, science, culture and work habits and will be the host of each other in their respective homes.

### **New legal entity names**

Formation of the new organization also requires changes to the legal names of facilities and locations around the world. For example, the former Saint-Gobain Vetrotex Reinforcements SAS will now be known as OCV Chambéry Reinforcements. A complete list of the new names will be available at [www.ocvreinforcements.com](http://www.ocvreinforcements.com).

# Changing the future of the planet

## Energy Efficiency at Owens Corning

Editor's note: As Chuck Dana meets with various groups, he is often asked about the company's position regarding energy efficiency and sustainability. While he gladly answers those questions, it may also be helpful to provide that information for all customers. One way to do that is to reprint excerpts from a presentation he delivered last fall at Corning Incorporated's 2007 Energy Summit.

As an executive at a company that is recognized for its environmental leadership, I'm often asked

"How do you do it? How can a manufacturer reduce its energy footprint and still meet the demands of its customers, its shareholders and governmental energy policies?"

At Owens Corning, we focus on three key areas – products, processes and people.

We have a long history of products that meet our world's need for energy efficiency, and we continue to innovate for tomorrow. We're focused on the continual reduction of the energy footprint of our processes at facilities around the world and we have a sustainability process that drives improvement. We motivate our people to deliver results around energy use reduction. By establishing a connection between energy savings and compensation, we're able to drive profitable sustainability.

### **Saving weight and improving energy efficiency**

Owens Corning is well known in the U.S. for its PINK\* Fiberglas™ insulation products that save energy and improve the comfort of commercial and residential buildings. During their installed life, the insulation products we produce each year result in the prevention of 1 billion tons of greenhouse gas emissions.

Owens Corning also makes glass fiber reinforcements that are a lightweight replacement for metal, saving weight and

improving energy efficiency in numerous applications including cars and trucks.

Another reinforcement application is the giant blades of wind turbines, the world's fastest growing source of renewable energy.

### **A 10-year goal to reduce the amount of energy**

At our facilities around the world, we've accelerated our energy productivity due to increased concern over greenhouse gas emissions and higher energy costs. Driving better energy productivity in our plants has helped reduce our energy intensity† by nearly 40 percent in the last 14 years. That may not seem like much until you understand how much energy we use.

In 2006, Owens Corning used the equivalent of nearly 6 million megawatt hours of natural gas (\$165 million) and nearly 3 million megawatt hours of electricity (\$168 million). Within my business alone – the Composite Solutions Business – we consumed approximately 4 million of those natural gas hours (\$83 million) and about 1 million in electricity (\$64 million).

For us, a 40 percent reduction is still not good enough. We've established a 10-year goal to reduce the amount of energy needed to make our products by an additional 25 percent.



*Energy and environmental footprint reduction projects impact all Owens Corning facilities.*

### **Every day ready to make a difference**

Owens Corning is dedicated to producing energy efficient products and reducing our energy footprint but we are only able to do those things because of the great people that come to work every day ready to make a difference.

The purchase of energy is a hot topic at Owens Corning for both environmental and financial reasons. Our corporate goal is to reduce our energy intensity of electricity and gas by a significant margin in 2009. To reach that goal, Owens Corning is linking executive compensation directly to our success in reducing our energy intensity. Few companies have taken this step, but I believe that it's an important one to ensure action.

### **Composite Solutions**

Owens Corning is the global leader in glass fiber reinforcement materials for composites. We have acquired the Saint-Gobain Reinforcement and Composites business - an acquisition that promises to be one of the most transformational events in our company's history.‡

The acquisition will have an impact on the company's energy use because our post-acquisition energy consumption will be roughly double what it is now. Our natural gas consumption will go to \$160 million, and our use of electricity will go to \$120 million. Managing and reducing this use of energy will be a very high priority going forward.

Wind energy is a global business that's growing at a double-digit rate, and our composites are used in many of the wind blades around the world. So not only are we contributing to new energy technology that's good for the environment, we're also making products that are helping us grow our bottom line results.

### **Making progress**

So far this year, several of our plants have made dramatic improvements in energy intensity as a result of changes we've implemented. In our Composites business, the biggest success stories are in Fort Smith, Ark. and Rio Claro, Brazil, where our energy use has dropped by double-digit percentages year-over-year since 2006.

Another big play that has delivered big results is oxygen-fired furnaces. By using a process that combines oxygen with natural gas during combustion, we're able to create a more efficient combustion process that uses less natural gas. These oxygen-fired furnace operations save more than 40 percent in natural gas costs.

Each year Owens Corning honors significant achievements in innovation, which is one of our company's core values. The highest honor is called the Slayter Award, named for a prolific inventor who was the company's first head of Research and Development. This year the Slayter Awards added a category called Facility Footprint Reduction, to honor the facility or facilities with the largest waste-to-landfill, energy or emission intensity reduction percentage. We had two winners in the category in 2007 and I am very proud that both of the winners are reinforcement facilities in the Composite Solutions Business.

At Owens Corning, we are confident our people will continually raise the bar, creating new and more compelling opportunities as we move forward. We are proud of our progress but there is much more to be accomplished.

### **Bissy (FR) successfully switched to oxygen**

It should be noted that the acquired reinforcement facilities have been working on the same types of projects to reduce energy use and greenhouse gas emissions. For example, the facility in Bissy, France, successfully switched to oxygen firing in May, 2007, which reduced energy use and CO2 emissions by 20 percent. The change also reduced nitrogen oxide emissions (NOX). These types of changes have been going on within the acquired facilities for about 10 years now and will continue.

\* The color PINK is a registered trademark of Owens Corning

† Energy intensity is a ratio of energy use to output; it is calculated on a per-unit-of production basis

‡ Owens Corning completed the acquisition of the Saint-Gobain Reinforcements and Composite Fabrics businesses on November 1, 2007

For a more  
complete text of the  
presentation, go to  
[www.ocvreinforcements.com](http://www.ocvreinforcements.com)

# Awards Highlight Innovation Focus

The Composite Solutions Business' focus on innovation benefiting its customers and the environment was demonstrated at a recent Owens Corning celebration.

Five of the awards presented at the company's annual Innovation Celebration in early November recognized accomplishments in composites.

The CSB winners are:

## High-Performance Reinforcements Production

The successful development of a direct-melt forming process to produce Owens Corning High-Performance Reinforcements won a Special Achievement Award in the area of speed to commercialization. That manufacturing breakthrough was one component allowing these new products to deliver performance characteristics that are similar to other high-performance reinforcements, but at a cost/performance level that is more attractive than current materials.

## DensGlass Gold® Coated Mat

This specialty mat, developed and commercialized in a collaborative effort with Georgia-Pacific, won for Best Product and Service Innovation. The coated mat effectively doubles the time the end-use product can be left exposed to the weather. The award is given for the product or service with clear evidence that it created value for both Owens Corning and the customer.

## Waste Elimination

A team at the Aiken, S.C. U.S., facility won for work that resulted in significant productivity gains for one of the production lines.

## Facility Footprint Reductions

Two CSB facilities won in this category – awarded to the facility with the largest waste-to-landfill, energy or emission reduction percentage.

- At Rio Claro, Brazil, a team won for their 64 percent reduction in the amount of glass waste being sent to the landfill.
- In Amarillo, Texas, U.S., a team won for successfully implementing a low-cost, oxygen-fired Advanced Glass Melting technology to achieve a 58 percent reduction in nitrogen oxide emissions.

"These awards are terrific examples that demonstrate how Owens Corning embraces innovation that clearly benefits our customers as well as the environment," said Ashish Diwanji, Vice President of Innovation for the Composite Solutions Business.



Owens Corning worked with Georgia-Pacific to develop and introduce a non-woven facer for its DensGlass Gold® exterior sheathing product.

## China to Develop Environmental Standards

The Chinese government will establish environmental standards for the glass fiber industry in 2008.

According to Joanne Xu, Asia Pacific Market Intelligence Manager, OCV Reinforcements, the government's plans were shared with attendees at a meeting of the China Glass Fiber Association held the first week of November 2007.

"Environmental protection was a very important topic at the meeting," Xu said, "The Chinese government is

putting emphasis on both saving energy and decreasing pollution in many industries, including the glass fiber industry."

Included in the standards are regulations to control air pollutants and wastewater discharge for the glass fiber industry.

"Owens Corning boron- and fluorine-free Advantex® Glass allows us to tell a positive environmental story," she said.

# Tradeshows Help Launch OCV™ Reinforcements

OCV Reinforcements helped introduce itself to the market by participating in several recent tradeshows to showcase its AR (alkali-resistant) products.

Most recently, it was at the World of Concrete exhibition January 22-25 in Las Vegas, Nev., U.S., where OCV Reinforcements exhibited its products for concrete applications including Anti-Crak® reinforcements for concrete, cement and mortar, as well as the Smart Dispenser automatic fiber dispenser.

In November, OCV Reinforcements exhibited AR products at Batimat, an international construction exhibition in Paris, France, and at the Building and Construction Indonesia 2007 exhibition in Jakarta.

The next exhibit for OCV Reinforcements is ICERP in Mumbai, India, February 7-9, 2008. Owens Corning is a main supporter of the event organized by the FRP Institute, India. OCV will show the newly formed customer-focused enterprise with its best products, talent and technologies, thus reinforcing its commitment to growth of the composite industry in India.

## Other upcoming tradeshows include:

- **SPE Thermoset Topical Conference**, March 6-8, Chicago, Ill., U.S.
- **Mixbuild**, March 11-14, Moscow, Russia
- **European Wind Energy Conference and Exhibition**, March 31 - April 3, Brussels, Belgium
- **Techtextil North America 2008**, April 1-3, Atlanta, Ga., U.S.
- **JEC Composites 2008**, April 1-3, Paris, France
- **Glass Fibre Reinforced Concrete Association Congress**, April 20-23, Prague, Czech Republic
- **Windpower 2008**, June 1-4, Houston, Texas, U.S.
- **China Composites**, September 17-19, Shanghai, China
- **IBEX**, October 6-8, Miami Beach, Fla., U.S.
- **SAIE**, October 15-18, Bologna, Italy
- **International Plastic Fair**, November 7-11, Makuhari, Japan
- **FEIPLAR Composites 2008**, November 11-13, Sao, Paulo, Brazil



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