



THE COMPOSITE APP CHALLENGE



DURABLE



FUEL EFFICIENT



RENEWABLE



PROTECTION

Innovative electronic applications are developed around the world each day and made available at the touch of an icon.

But what about composites?!

**WHAT'S THE NEXT BIG APP
FOR COMPOSITE MATERIALS?**

WHAT'S THE NEXT COMPOSITE BRIDGE, CAR, WIND BLADE OR ARMOR APPLICATION?

That's the challenge behind the Owens Corning Composite App Challenge. The company is inviting inventors, entrepreneurs and university students around the world to submit their bright ideas for using composite materials.

The company will present a \$200,000 development award for a solution that can be introduced in 2012, and four cash awards for ideas that address a need, appear to be feasible and have a perceived market opportunity – one \$20,000 award available to anyone and three \$10,000 awards specifically for university students.

Submit an idea today in one of four categories addressing some of society's pressing issues – Infrastructure Durability, Fuel Efficiency, Renewable Energy and Protection from Harm.

Perhaps your idea will help transform the future of the composites industry.

SUBMITTING YOUR APP

The Owens Corning Composite App Challenge will have three phases:

- Participants must submit ideas or solutions online through the competition Web site by July 15, 2010
- Up to 20 total entrants in all categories will be invited in early August to provide additional information for a second round of review in November 2010
- Eight finalists will be invited to present their ideas

Winners will be announced in February 2011 during the show hosted by the American Composites Manufacturers Association.

**See complete rules and submit your app at:
www.occompositeappchallenge.com**



**THE COMPOSITE
APP CHALLENGE**



INFRASTRUCTURE DURABILITY



Infrastructure is critical to clean drinking water and preventing bridges, streets and buildings from crumbling and having to be replaced. Governments around the world are currently spending billions to replace aging infrastructure. Consider these facts:

- Century-old pipes in many western cities mean more than 10 percent of the water is lost to leakage.¹
- A significant water line bursts on average every two minutes somewhere in the U.S.² In Washington, D.C., a pipe breaks every day, on average.³
- Estimates by the U.S. Department of Transportation show corrosion costs the U.S. approximately \$300 billion annually. Similar costs have been estimated in Germany, Japan and the United Kingdom.⁴

Composites are corrosion resistant and can help build a more durable and sustainable future.

What long-lasting idea is in your head?

¹ *National Geographic*, special issue on water; April 2010

² New York Times analysis of Environmental Protection Agency data

³ *Ibid.*

⁴ G.H. Koch, M.P.H. Brongers, N.G. Thompson, Y.P. Virmani, and J.H. Payer; "Corrosion Costs and Preventive Strategies in the United States," FHWA-RD-01-156, U.S. Department of Transportation, Federal Highway Administration (2002)

FUEL EFFICIENCY



Cars, trucks, planes and trains sip less fuel and cost less to operate when they're lighter. Consider these facts:

- Fuel consumption in cars produces about one pound (0.45 kilograms) of CO₂ per mile driven and a 10 percent weight reduction translates to a 7 percent fuel savings.⁵
- With more than 18,000 active commercial passenger and cargo aircraft flying some 38 billion miles a year globally, a 1 percent reduction in fuel consumption through composites could save about 16 million barrels of oil annually.
- A typical composite part is 25 to 35 percent lighter than conventional materials.⁶

Composites can play a key role in reducing weight and improving energy efficiency.

What weight-saving idea is fueling your thinking?

⁵ Scientific American magazine and Ward's Automotive Yearbook

⁶ Ibid.

RENEWABLE ENERGY



The world desperately needs to develop a diversified portfolio of renewable energy resources to protect the health of our planet and ensure future energy supplies. Consider these facts:

- Political considerations and environmental concerns are expected to move the world's energy consumption away from fossil fuels.⁷
- Combined global revenue for three major renewable sectors – solar, wind and biofuels – grew by 11.4 percent (in 2009) over 2008, reaching \$139.1 billion.⁸
- The world's wind power capacity grew by 31 percent in 2009, adding 37.5 gigawatts (GW) to bring total installations up to 157.9 GW.⁹

Wind energy is not practical without composite materials and they can enable many other emerging renewable energy technologies as well.

What's your cool idea?

⁷ Wikipedia, World Energy Resources and Consumption, March 30, 2010

⁸ "Clean Energy Trends 2010," CleanEdge.com's annual trends report

⁹ Global Wind Energy Council (GWEC)

PROTECTION FROM HARM



Around the world, soldiers are putting their lives at risk in combat scenarios that demand protection from more lethal ammunition.¹⁰ Consider these facts:

- Countries with troops in Afghanistan as part of the NATO-led International Security Assistance Force (ISAF) discovered that they needed better protection from roadside bombs and land mines.¹¹
- It is possible to design composite armor that is stronger, lighter and less voluminous than traditional armor.¹²
- By taking advantage of composites in design, engineers can eliminate parts, reduce costs and greatly improve the overall performance of the armor system.¹³

Composite materials have proven their ability to provide a lightweight shield in the line of fire – as personal, vehicular, shipboard and facility protection.

What do you want to protect?

¹⁰ Reinforced Plastics, December 2006

¹¹ Radio Free Europe/Radio Liberty, Aug. 16, 2006

¹² Wikipedia, Composite Armour, March 30, 2010

¹³ MarketVision, published by Owens Corning, winter 2010



OCV Reinforcements

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OCV Non-Woven Technologies

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