



Game Changers

Customer Partnership Drives Energy Efficiency in Russia



PROJECT

Program to mitigate carbon emissions through enhanced one-component foam sealant manufacturing and more widespread use in Russia

CHALLENGE

Reduce greenhouse gas emissions by enhancing one-component foam sealant production and promoting its use to enable increased energy efficiency in Russian homes

SOLUTION

Dow is providing a custom-formulated polyurethane system to help a Russian manufacturer of one-component insulating foam sealants reduce its product carbon footprint and launch an unprecedented promotional campaign providing insulating foam sealant to homeowners

COMPETITIVE EDGE

The two-pronged approach is contributing long-term sustainability benefits to Russia

Long after the Sochi 2014 Olympic and Paralympic Winter Games are over, the legacy of Dow's involvement will live on through a variety of technology programs that enable significant sustainability benefits.

One such program centers on a unique partnership between Dow and Profflex, one of Russia's top producers of one-component insulating foam sealant for both professional and homeowner use and a longtime Dow customer.

In an extraordinary two-pronged approach with this important customer, Dow is helping mitigate a significant amount of greenhouse gas (GHG) emissions in Russia. On the production end, tailor-made VORATHERM™ polyurethane systems produced by Dow Izolan in Vladimir, Russia, enabled the incorporation of a less GHG-intensive blowing agent into the formulation for its customer's polyurethane straw foam and gun foam insulation products. On the consumer end, Dow is helping promote increased use of insulating foam sealant during new window installations in homes. This will help reduce sources of cold air infiltration, ensuring lower energy consumption by making residences more energy efficient.

The program supports Dow's role as the Official Carbon Partner of the Sochi 2014 Organizing Committee. Dow and the Sochi 2014 Organizing Committee have set out to mitigate the direct carbon footprint associated with the Organizing Committee of the Sochi 2014 Olympic and Paralympic Winter Games. This will be achieved through implementation of energy-efficient technologies – including those being developed by Dow and its customer – that will result in substantially lower greenhouse gas emissions for years to come.

All of the projects are intended to generate savings and long-lasting benefits for the Russian economy through upgrades in building infrastructure, optimization of farming practices and enhancements of industrial processes.

Manufacturing Using Dow Technology

Dow's joint effort with its customer begins with a close look at how the one-component insulating foam sealant manufacturing process can be improved to reduce the amount of greenhouse gas emissions created when using the insulating foam sealant. Dow's solutions allow its customer to maintain its excellent foam quality and

yield after switching blowing agents. These measures will lead to an estimated reduction of the customer's product carbon footprint by more than 500,000 metric tons of CO₂ equivalent emissions over two years.

Dow's customer produces five types of professional and three types of "do-it-yourself" insulating foam sealants. The products differ by yield and seasonal performance. A basis of the product is high-quality VORATHERM™ polyurethane system from Dow, contributing to high insulation properties, excellent adhesion, high humidity resistance and durability.

Contributing to Energy-Efficient Homes

A key component of the program was the launch of a promotional initiative unprecedented in Russia: Any homeowner replacing windows with more energy-efficient windows received a corresponding amount of insulating foam sealant – free of charge. About 100,000 cans of insulating foam

sealant were distributed during the promotion period. The foam sealant seals the rough opening of the frame around the window before it is installed. More than 130 window installation companies across Russia participated in the program.

Insulating foam sealant is proven to be an effective building material to prevent air infiltration. Considering that buildings contribute nearly 40 percent of man-made greenhouse gas emissions (and about 40 percent of all energy produced is consumed by household heating systems), any improvement in insulation can make a significant impact.

By using insulating foam sealant, homeowners can make their residences more energy efficient. That translates to less energy used overall – and a lower energy bill. Each can of insulating foam sealant helps reduce CO₂ emissions by an estimated three metric tons over 10 years.

Working Toward a Sustainable Future

As the Official Carbon Partner of the Sochi 2014 Organizing Committee, Dow is spearheading the groundbreaking Sustainable Future project. The first program of its kind, the Sustainable Future project leverages Dow's expertise, portfolio, technologies and partnerships to help the Sochi 2014 Organizing Committee fulfill its vision of Games with minimal impact on the climate.

A variety of Dow activities will mitigate the equivalent amount of emissions to those that will be generated by hosting Sochi 2014 Olympic Winter and Paralympic Games – a footprint that includes the emissions generated by athletes, workers and volunteers during the Gamestime from transportation, energy consumption, waste generation and other activities. The Sochi 2014 Organizing Committee has estimated the direct carbon footprint of the Sochi 2014 Olympic Winter Games to be between 250,000 and 360,000 metric tons.

Leaving a Lasting Legacy

As a world leader in chemistry with a growing presence in Russia, Dow is implementing new technology that can reduce the country's greenhouse gas emissions in three key areas:

Infrastructure (Buildings and Construction)

Objective: Implement energy-efficient solutions for new construction and renovation to reduce the amount of energy used in heating and cooling.

Agriculture

Objective: Promote sustainable agricultural solutions and healthier lifestyles through proven practices that allow soil to retain carbon, minimizing the use of mechanical farming equipment, fertilizer and water.

Industry

Objective: Demonstrate carbon reduction possibilities by improving industrial processes and supply chain and construction practices.

To Learn More

Go to www.dow.com/promo to learn more about the Dow program and how to participate.

Dow Olympic Operations Corporate Communications

2030 Dow Center
Midland, MI 48674

US

Toll Free 800 441 4DOW
989 638 1006

International

Europe / Middle East + 800 36 94 63 67
Italy + 800 783 825
Asia / Pacific + 800 77 76 77 76
+ 60 37 958 3392
South Africa + 800 99 5078

dow.com

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