



OFFICIAL CARBON PARTNER



# Building a Sustainable Future Through Sport







## The Carbon Footprint

The Earth's climate is a complex system driven by energy from the sun. Sunlight warms the earth and the atmosphere stores and transports this heat energy around the globe. The heat energy of the sun would largely be radiated back into space and the earth would be a cold and inhospitable place if it weren't for the atmosphere. The amount of heat energy captured in the atmosphere depends on the gases that are present. Gases such as water vapor and carbon dioxide function just like the glass in a greenhouse, resisting the radiation of energy and causing heat to build up. That is why atmospheric trapping of heat is called the greenhouse effect. Scientists have fossil evidence that the earth was hotter when carbon dioxide levels were higher. Plants reduced the atmospheric carbon dioxide levels through photosynthesis, fossilizing the carbon. Nature maintained a balanced CO<sub>2</sub> cycle for many centuries. Releasing carbon dioxide to the atmosphere through combustion of fossil fuels causes concern because it causes

CO<sub>2</sub> levels to rise. Photosynthesis just can't maintain the balance. Higher CO<sub>2</sub> levels create concern that the earth will heat up too much, impacting ecosystems and our quality of life. Unlike a greenhouse, there are no fans that we can turn on to counteract the greenhouse heating.

When we use fossil fuels to heat our homes, power our cars, run our factories, grow our food, transport our water and many other activities that contribute to our quality of life, we contribute to the greenhouse gas emissions. But it's not just those large-scale things we do like driving cars, heating homes and operating factories. It is also the little things: cooking dinner, going to a play, or even watching the Games on television. Reducing greenhouse gas emissions is very important. That's why the Organizing Committee of the Sochi 2014 Olympic Winter Games is striving to make sure the Games have a minimal impact on our planet.

## Did You Know?

- If one metric ton of CO<sub>2</sub> was put in balloon, it would measure about 10 meters in diameter.
- About 26 medium growth coniferous trees, planted in an urban setting and growing for 10 years, will sequester 1 metric ton of CO<sub>2</sub> equivalents.
- One Russian resident produces on average about 11.1 metric tons of CO<sub>2</sub> equivalents a year.



\*Based on data from US EPA, UNEP, World Bank



## Striving for a Brighter Future

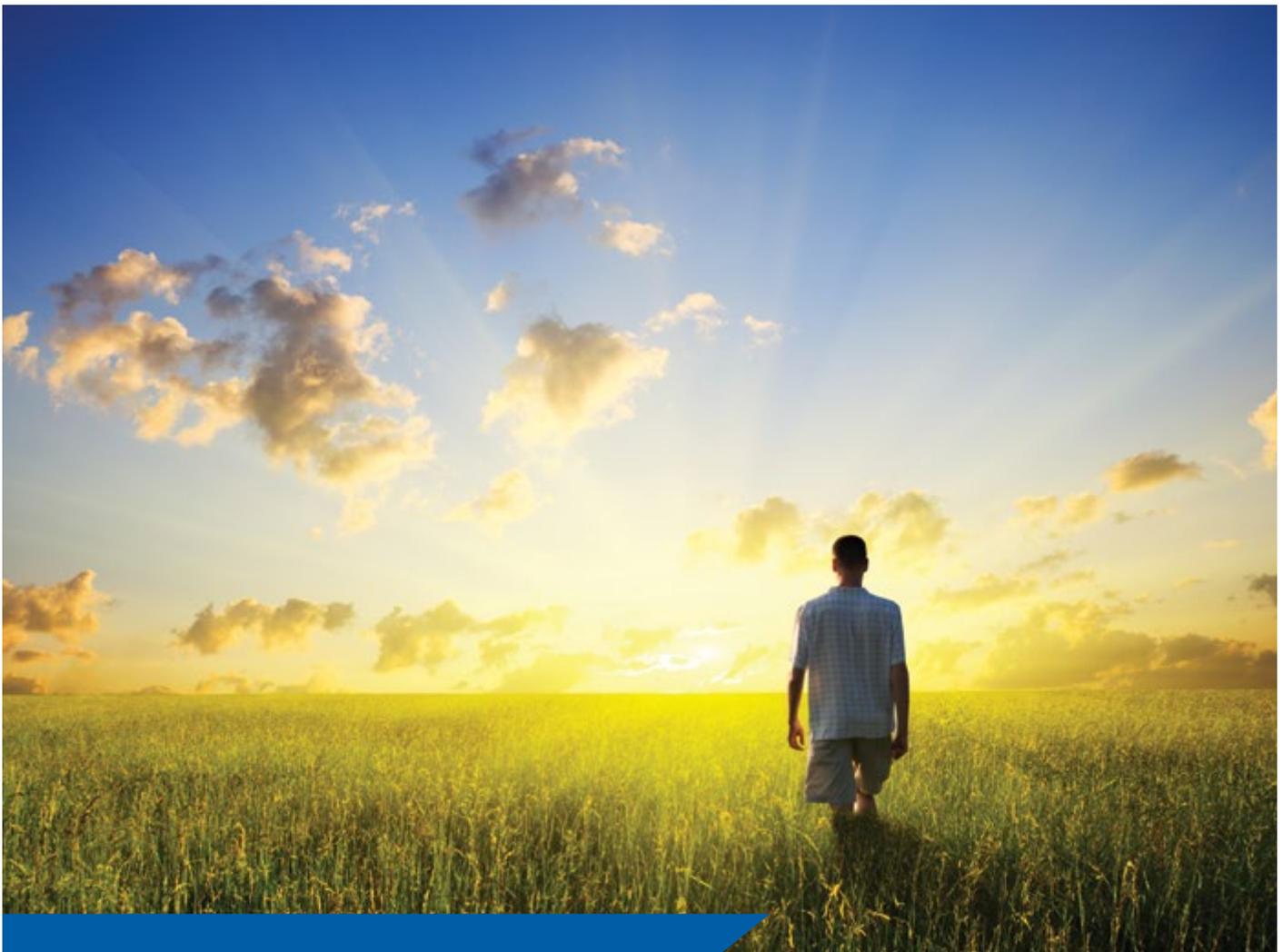
# Sochi 2014: A Focus on Sustainability

**Faster. Higher. Stronger.** For more than a century, the Olympic motto has guided athletes on their quests for excellence. As the Olympic Movement reaches every corner of the world, it continues to inspire a new generation to pursue the Olympic goal of “placing sport at the service of the harmonious development of humankind.”

Attention to the global “green agenda” is an important part of that pursuit. And this is why the International Olympic Committee (IOC) incorporated

“environment” as the third pillar of the Games, joining “sport” and “culture.”

This new emphasis on the environment plays a key role in the thought process of all cities as they undergo the bidding process to host the Olympic Games. From the very beginning of its journey to host the Olympic Winter Games for the first time in Russian history, Sochi 2014 has set the bold goal of delivering the Games with minimal impact on the climate.





# Taking Steps to Minimize The Games' Carbon Footprint

## Step 1: Measure

First, it was important to understand the estimated “carbon footprint” the Games will create. Sochi 2014 evaluated the elements associated with The Organizing Committees’ activities from 2007 (when Russia won the Olympic bid) through the Winter Paralympic Games’ Closing Ceremony, in addition to the footprint of athletes (transport, food, accommodation), volunteers (transport, food, accommodation) and the utilization of venues during Games-time. The footprint was estimated between 340,000 and 360,000 tons of CO<sub>2</sub> equivalent.



## Step 2: Reduce

Another priority in managing the climate impact of any large event like the Olympic Games is to reduce greenhouse gas emissions wherever possible. During the preparation for the Games, Sochi 2014 implemented different measures that helped to reduce the carbon footprint; for example, through implementation of green standards for construction and modernization of transport and energy systems.

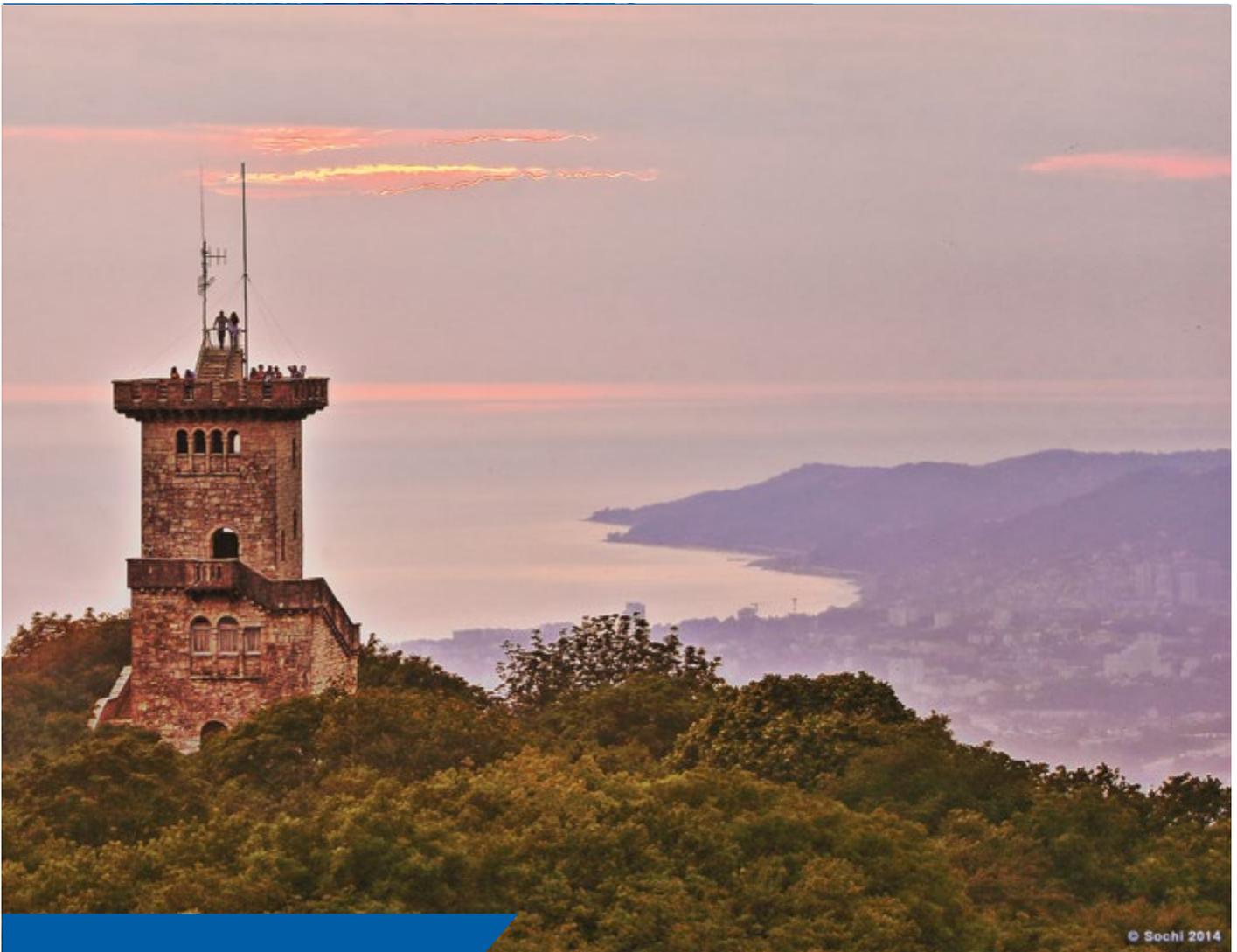
## Step 3: Mitigate

The Sochi 2014 Organizing Committee has committed to going beyond reducing the footprint associated with the hosting of the Games. It is collaborating with Dow, Worldwide Partner, the

Official Chemistry Company of the Olympic Games and Sochi 2014 Carbon Partner to mitigate the footprint of the Games.

Chemistry is part of everything we touch and use every day, from soap to plastic, from foods to building materials. Using the right chemistry solutions can help reduce our environmental impacts. That’s why Dow, as one of the world’s leading science and technology companies, is helping to find solutions to environmental challenges like climate change.

The carbon footprint of the Games is being mitigated through the implementation of energy-efficient technologies, with improved greenhouse gas (GHG) emissions performance in the key areas of infrastructure, industry and agriculture.



## Measuring the Change

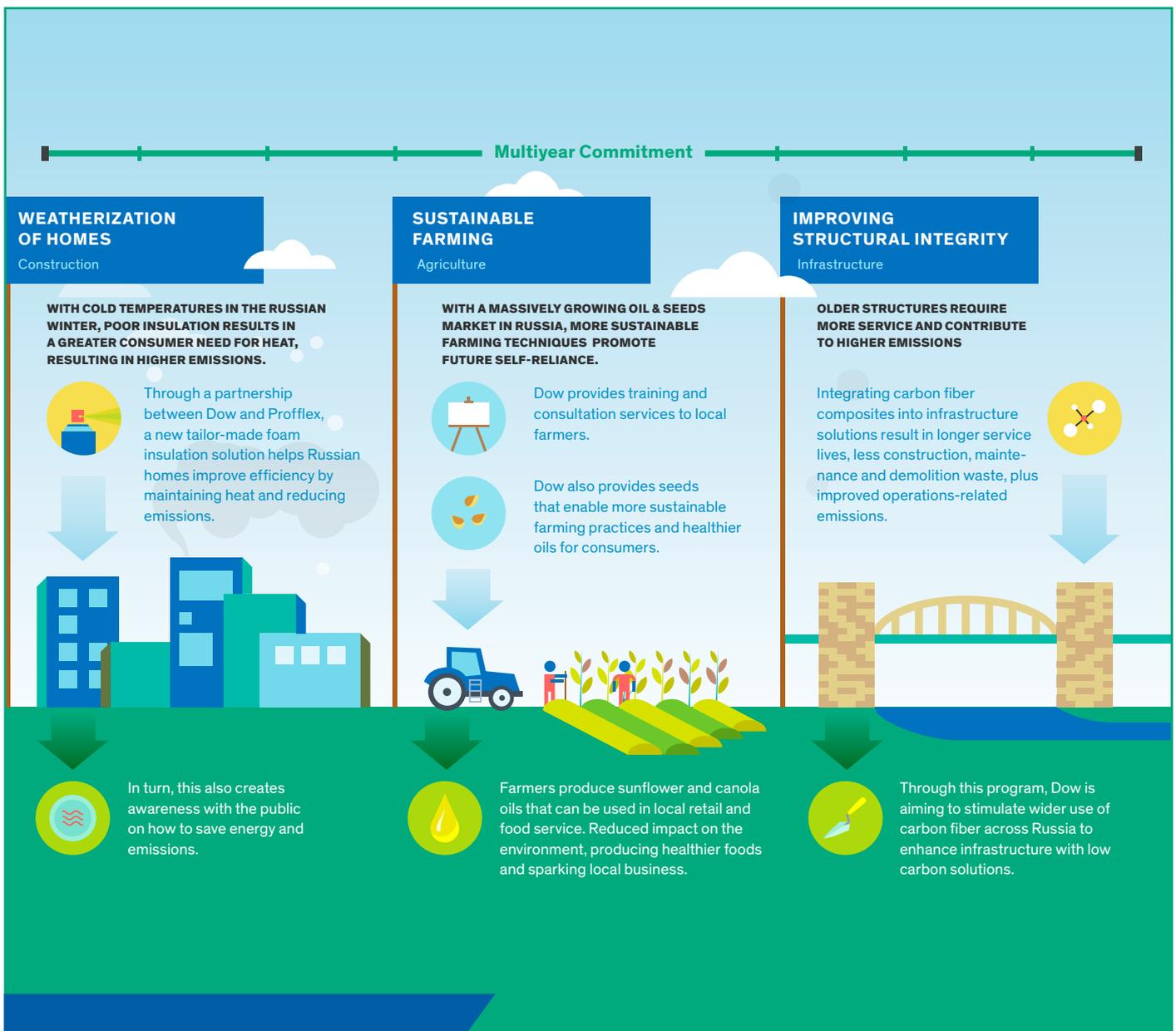
- 6 % of Russian greenhouse gas emissions are from the agricultural sector, primarily due to soil emission.
- Buildings account for 36% of energy use and 30% of greenhouse gas emissions in Russia
- Each can of insulation foam applied for window installation helps reduce CO<sub>2</sub> equivalent emissions by nearly 3000 kg over 10 years.

\*Based on data from McKinsey and survey conducted by Dow



To help offset the emissions generated by Sochi 2014 Organizing Committee, Dow is leading a collaborative effort that includes customers, local governments, Sochi 2014 partners and other experts. Dow is implementing low-carbon technologies throughout Russia. The company is in a unique position to deliver

energy-efficient and more sustainable solutions to mitigate the Games' direct carbon footprint while generating a legacy of sustainability and economic development in Russia to last long after the Games are done.





## Be the First Games: Offsetting the Emissions Associated with Travel to Sochi



In addition to its commitment to mitigate the direct carbon footprint of the Games, Sochi 2014 Organizing Committee and Dow took a step further and enabled the offsetting of the estimated direct carbon footprint of the Games associated with the travel of athletes, spectators and media traveling to Russia for the Olympic and Paralympic Winter Games from all over the world.

Sochi 2014 are the very first Olympic Games to offset 100 percent of the estimated travel footprint associated with spectators and media, amounting to 160,000 metric tons of CO<sub>2</sub> equivalent emissions. The travel footprint is one of the most significant contributors to the emissions of a world-class international event such as the Olympic Games.

## Measuring the Change

Estimated emissions from flying:

- The carbon footprint flying from Australia to Sochi and back is equivalent to emissions from driving a car for about 16 months.
- The carbon footprint flying from South Africa to Sochi and back is equivalent to emissions from driving a car for about 13 months.
- One passenger vehicle emits about 4.8 metric tons of CO<sub>2</sub> equivalents a year.



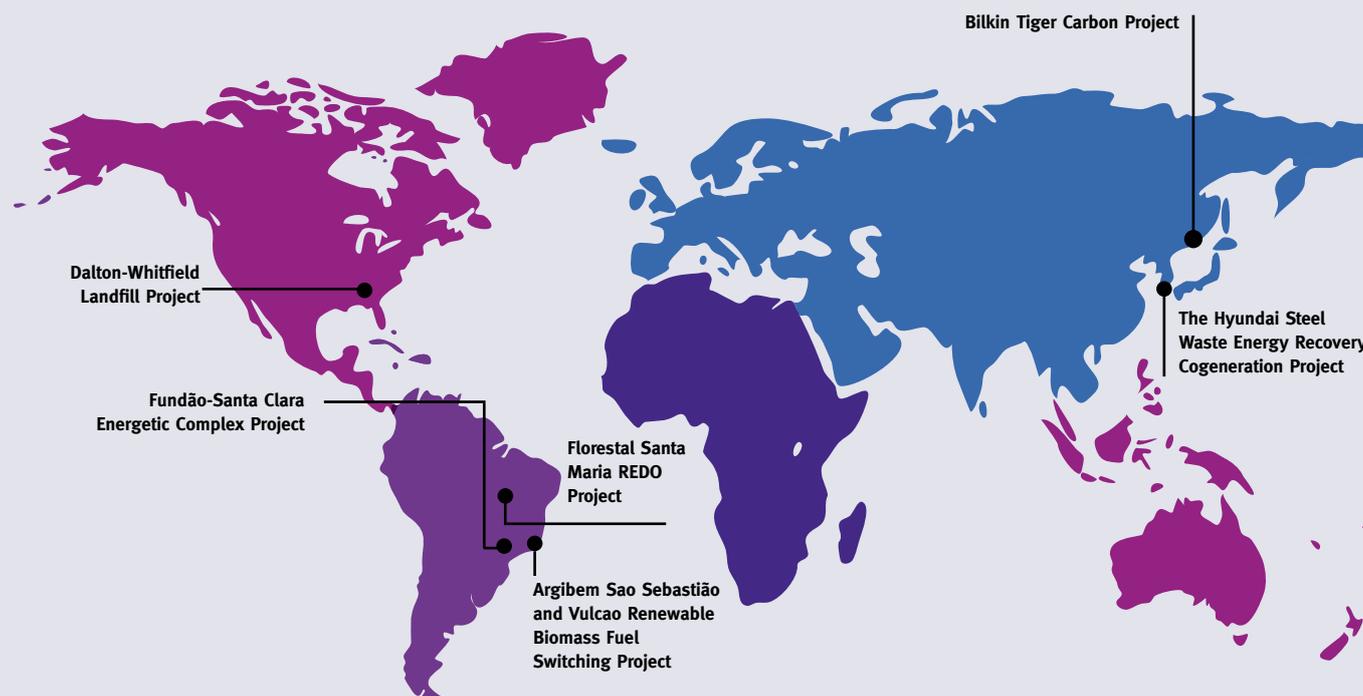
\*Based on data from US EPA



The spectator and media travel footprint has been compensated through a portfolio of high-quality offset projects. The portfolio focuses on renewable energy, energy efficiency, as well as the protection and restoration of vulnerable ecosystems. It includes offsets from the host country of the Olympic Winter Games, specifically from the Bikin Tiger project –

a forest conservation project in Vladivostok, Russia, which is home to the Amur tiger. In addition, the portfolio aims to embrace the international spirit of the Games and includes offset projects in Brazil and South Korea – countries that will host the next two Olympic Games.

## Global Projects Contributing To Offsets



Total: 160,000 tons of CO<sub>2</sub> equivalents



## You Can Make a Difference

**Each of us can help mitigate carbon emissions. It's not as hard as you might think.**

Like all of the teams competing in the 2014 Olympic Winter Games, the Sochi 2014 Organizing Committee can't achieve victory alone.

It takes teamwork and you are an important part of the team. The Sustainable Future Project brings together a diverse group of government and non-government entities and manufacturers – including The Dow Chemical Company, the Official Carbon Partner of Sochi 2014 – all working toward change.

And it does not end once the flame will have extinguished in Sochi. Activities taking place now will continue to benefit the Russian economy for

years to come. The impact of the building, infrastructure and agricultural products all contribute to a positive legacy from the 2014 Olympic Winter Games.



## While You Are in Sochi

**You can reduce your own environmental footprint at the Games. While in Sochi, every athlete, visitor, spectator and fan has an important role to play. You reduce your carbon impact when you:**



**Use public transportation.**

Get to venues quickly and more efficiently. If you need to drive, carpool.



**Recycle.** Recycling bottles, cans and paper helps lower carbon emissions at every step in their lifecycles, from manufacture to disposal.



**Walk or ride a bike.** You'll not only reduce CO<sub>2</sub> emissions, you'll get a closer look at the beautiful city sights – and get some exercise!



**Fly coach.** By sitting in the part of the plane with more seats, you reduce your share of that flight's emissions.



**Turn off the lights.** In your hotel, turn off electronics just like at home. Remember to unplug electronics as soon as they've charged.



## Did you know?

- If you inflate a bunch of party balloons with 360,000 metric tons of CO<sub>2</sub>, they would fill up about 80,000 Olympic sized swimming pools.
- Dow's technologies helped to mitigate Sochi 2014's direct carbon footprint before the Opening Ceremony.
- Dow enables Sochi 2014 to be the first Games in Olympic history with a carbon neutral travel footprint for athletes, media and spectators.
- The estimated direct carbon footprint of the Games in Sochi is equivalent to the emissions created by 32 500 Russians for one year or emissions by almost 1.5 billion kilometers of car travel, equivalent to 5 return trips to the sun.



\*Based on report from ERM and data from US EPA, NASA and World Bank

## When You Get Home

Once the Games are over, you can continue to reduce your carbon footprint by making a few simple changes in your day-to-day life:



**Travel light.** Walk, ride a bike or use public transportation.



**Drive smart.** Inflate tires and change oil regularly; be gentle with brakes and the accelerator – a well-maintained car uses less fuel and emits fewer emissions.



**Power down.** Always turn off lights, TVs, computers, phones and other electronics when not in use.



**Cook light.** Cover pots when boiling food and, when using an electric stove, turn it off early and allow residual heat to continue cooking.



**Insulate your home.** Seal gaps around windows to keep cold air out and to reduce the amount of energy needed to heat your space.



**Watch your water.** Take a short shower instead of a bath, and turn off the faucet while brushing your teeth.



**Clean cool.** Wash clothes in cold water and line dry when you can.



**Shop right.** Choose food grown using sustainable practices.



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Learn more about sustainability at the Sochi 2014 Olympic Winter Games at:

[www.sochi2014.com](http://www.sochi2014.com)  
[www.dow.com/sochi2014](http://www.dow.com/sochi2014)