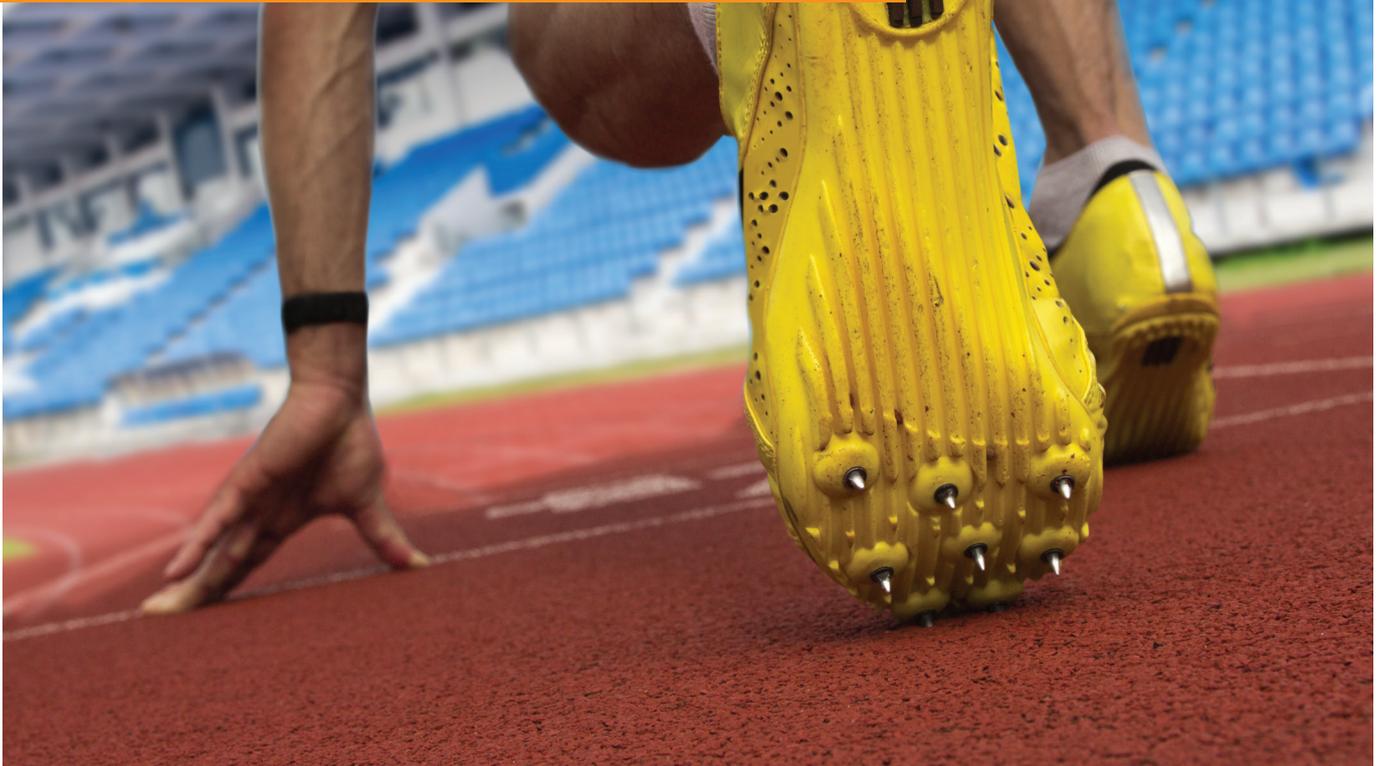




Climate Solutions Framework for Events

A Summary



Why Carbon Mitigation for Events?

Global events, such as the Olympic Games, can be a significant source of greenhouse gas (GHG) emissions. Construction, operations and spectator travel are just some of the ways that large events produce GHG emissions. However, by employing low-carbon technologies and behavioral practices to mitigate these emissions, events can become innovative catalysts for sustainable development and leave a positive and lasting legacy on the host region, city or state. The Dow Chemical Company (“Dow”), the official Carbon Partner of Sochi 2014 and Rio 2016, has developed the **Climate Solutions Framework** (herein “the Framework”) with the hopes of encouraging voluntary mitigation programs across the world.

Legacy: Contributing to a Low-Carbon Future

There are a number of internationally recognized standards for the calculation of GHG emissions, yet none was specifically designed to consider the particularities of events. From a GHG perspective, events are unique from

other emissions sources as they often occur at various locations and last for only a defined period of time, and are unlikely to be accounted for in the carbon budget of a city, state or region. The majority of the emissions also come from sources beyond the control of the event owners, such as spectator travel. Consequently, events offer a unique opportunity to engage in voluntary initiatives to quantify, reduce and mitigate their associated GHG emissions. More importantly, international events that celebrate the world coming together through sports, music or another shared activity have the reach and influence to build positive momentum and catalyze global behavioral changes. Dow has developed a new methodology that, based on the best available GHG standards and science, guides the inventory quantification and the GHG mitigation programs for events. Motivated by Dow’s goal to drive collaborations that will help create a more sustainable planet, the methodology embeds the concept of legacy, by which the mitigation efforts have a larger widespread benefit through the adoption of low-carbon technologies.

Climate Solutions Framework

The Framework allows event owners, in collaboration with event partners, to implement a structured yet flexible approach to quantify and mitigate the impacts of events while also leaving a positive legacy through the adoption of innovative low-carbon technologies. The Framework incorporates existing best practices in GHG measurement and reporting with a rigorous approach to the development of a portfolio of GHG mitigation projects. The carbon mitigation projects created under the Framework create high-quality emissions that offset the event’s impact. In general, these emissions reductions are allocated to the event prior to being created, and although they may be registered, emissions reductions created within the Framework do not require a mechanism for transfer and/or trading. To maximize climate benefits, the Framework recognizes mitigation programs should be implemented in conjunction with efforts to minimize the event’s footprint,¹ such as increasing the energy efficiency of venues.

Nine Guiding Principles

The Framework is based upon nine guiding principles.

Category	Principle	Description
Quality	Real	Measurable, conservative and not double-counted (unique)
	Beyond Business-as-Usual	Emissions-reductions projects push innovation boundaries and are not part of normal business practices
	Confirmed	Third-party validated, verified and monitored
Innovation	Diverse	Employs a wide range of low-carbon solutions and activities across multiple industries and activities
	Holistic	Recognizes both the direct and broader societal GHG impacts of events and the associated mitigation activities
	Market-Driven	Utilizes the value from event exposure (marketing value) to drive mitigation activities and generate long-term benefits
Legacy	Catalytic	Technology adoption is a key focus; recognizes events can help promote more sustainable technologies that lead to market transformation
	Progressive	Integrates current best practices, guidances and methodologies into a flexible approach for event owners
	Focused	Enables projects in geographic and thematic areas that are tailored to the event, not constrained to a jurisdiction

Track Record of Success

Dow, as the Official Chemistry Company of the Olympic Movement through 2020, has launched innovative, cross-sector programs to mitigate the carbon impact of the Sochi 2014 Olympic Winter Games and Rio 2016 Olympic Games. In Russia, the carbon partnership program utilized energy-efficient technologies and low-carbon solutions across three sectors – agriculture, infrastructure and industry. By the first half of 2015, the projects implemented for the Sochi 2014 Olympic Winter Games delivered 1.6 million tonnes of CO₂ equivalents in climate benefits. For the Rio 2016 Olympic Games, Dow has committed to mitigate 500,000 tonnes of CO₂e, and together with Rio 2016, aspires to enable another 1.5 million tonnes of CO₂e in climate benefits by 2026.



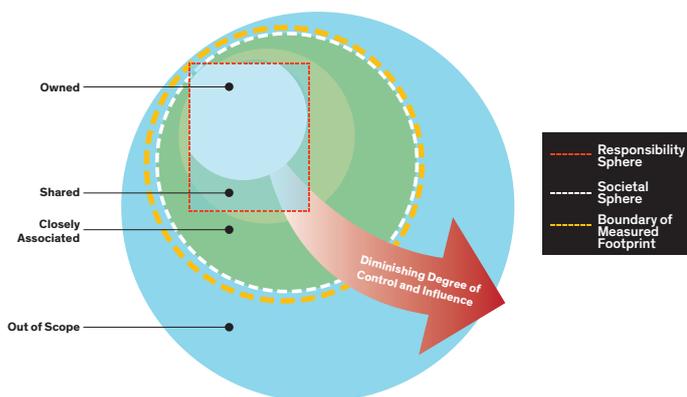
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¹Carbon footprint is historically defined as the total sets of GHG emissions caused by an organization, event, product or person.

How It Works

Step 1: Measure the Event GHG Inventory Footprint

One of the first, and most critical steps, in the development of a GHG emissions inventory is the definition of the boundaries of the inventory. These boundaries refer to the coverage and extent that will be taken into account by the event owner for the inventory process. The Framework suggests an approach in which the event owner considers both **GHG emissions that are controlled or directly influenced by the event** (the Responsibility Sphere), as well as some **GHG emissions that are not controlled or directly influenced** by the event but occur, at least in part, as a result of the event (the Societal Sphere). Taking into account GHG emissions both within the Responsibility and Societal Spheres can help determine a more comprehensive picture of an event's causal contribution to, and ability to influence, climate change.



Responsibility Sphere

The Responsibility Sphere refers to the inventory and measurement of GHG emissions for which the event owner exercises direct control or influences, and, therefore, claims a responsibility to reduce and mitigate. These include direct emissions sources such as construction and operations, and indirect emissions sources such as electricity consumption and air travel to and from the event. The Responsibility Sphere could encompass Scope 1, Scope 2 and Scope 3 emissions from the Green House Gas Protocol. The event owner should identify all sources of **GHG emissions that are controlled or directly influenced** by the event and establish ways to track and measure these sources. Tracking and measurement of carbon emissions data are important at this step to ensure that a reliable GHG inventory (or “footprint”) with low level of uncertainty can be calculated. In addition, the event owner may agree to transfer the responsibility to mitigate some or all of these emissions to a designated Carbon Partner.

Societal Sphere

The Societal Sphere refers to estimation of GHG emissions over which the event owner does not have direct control, but acknowledges likely occurred as a result of the event taking place. Infrastructure improvements not directly attributed to the event (such as highway improvements) would be an example of

emissions that could be classified in the Societal Sphere. The event owner should identify all sources of GHG emissions that are not controlled or directly influenced by the event but occur, at least in part, as a result of the event. Data is often difficult to obtain in order to measure and verify for these sources, so estimation is typically required. The event owner and the designated Carbon Partner may create programs in the Societal Sphere to mitigate part or all of these activities. The Societal Sphere could encompass certain categories of Scope 3 of the GHG protocol.

Mitigation Project Examples

These mitigation projects have been designed to create GHG reductions in the host geographies as a legacy of the Sochi 2014 Olympic Winter Games and Rio 2016 Olympic Games while also delivering long-term benefits to residents.

- In Russia, Dow teamed with an insulation material producer on the reformulation of a spray foam sealant, enabling a significantly reduced product footprint for the Russian market. In addition, in a consumer-facing campaign, 100,000 cans of polyurethane-based insulating sealant were distributed free of charge to homeowners prior to the Sochi 2014 Olympic Winter Games. The polyurethane foam was used for insulation and air sealing of windows and other potential sources of air infiltration, leading to more comfortable and energy efficient households. Lack of control around the data collection makes this project better suited to be part of the Societal Sphere.
- In Brazil, Dow, in collaboration with international and national experts, is providing variable rate technology and expertise to farmers in Mato Grosso. Implementation of the technology along with seeds and crop protection solutions is expected to result in lower rates of synthetic fertilizer application, leading to a reduction in emissions of nitrous oxide. Participating farmers have access to services and technology such as satellite imagery, precision harvest and profit maps, and intensive soil sampling. The project will deliver climate benefits far beyond the time frame of the Rio 2016 Olympic Games and create a lasting legacy by helping to disseminate more sustainable practices in one of the nation's main agricultural hubs. Control over the baseline condition, the existence of an established protocol and ability to establish robust project activity data collection procedures make this project suited for the Responsibility Sphere.



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Step 2: Select a Mitigation Program Strategy

The Responsibility and Societal Spheres, which are differentiated by the level of control (or access to information and influence) by the event owner, will shape the mitigation program strategy. The goal of the mitigation program is to compensate for the GHG impacts of both spheres, after the event footprint has been reduced to the greatest extent possible.

Responsibility Sphere Mitigation

Responsibility Sphere mitigation can take the form of actions supporting existing projects through the purchase of verified carbon offsets from a reputable standard such as the Clean Development Mechanism (CDM), Verified Carbon Standard (VCS) or Gold Standard Foundation (GSF), or implementing new emissions reduction projects that are directly allocated to the event. Projects associated with the Responsibility Sphere are characterized by having high certainty due to the high level of control around the emissions reductions. An example of a Responsibility Sphere project related to the event would be the use of hybrid or electric vehicles instead of diesel or gasoline vehicles to transport athletes during the event duration. Mitigation projects sponsored by a Carbon Partner also could entail introducing a low-carbon solution to the jurisdiction. (See Mitigation Project Examples.)

Societal Sphere Mitigation

These emissions reductions are achieved through the deployment of low-carbon solutions in the jurisdiction agreed upon between the event owner and the Carbon Partner. The Carbon Partner seeks to promote the use of low-carbon solutions that will result in emissions reductions through their adoption.

Step 3: Develop and Implement the Mitigation Projects

The Carbon Partner must demonstrate that their involvement is beyond business-as-usual, and that the promotion of the low-carbon solution will contribute to transformative change in the jurisdiction. Like the impacts in the Societal Sphere emissions, precise emissions reduction data are often difficult to obtain and relies on estimation. Therefore, the data carry greater uncertainty than impacts in the Responsibility Sphere. The emissions reductions within the Societal Sphere – though more difficult to measure – are still real and might even create a greater common

good by providing long-term legacy and engagement in the communities where the technologies are deployed. The Carbon Partner must identify, develop and implement mitigation projects, or purchase carbon offsets to mitigate the impacts of the events. For event owners or Carbon Partners that decide to implement their own reduction projects, all carbon mitigation projects begin with the validation of a Project Plan. The Project Plan shows how the projects meet specified criteria described in the Framework. The Project Plan also identifies the project assumptions and protocol selection and describes in detail how the emissions reductions from the project will be quantified. In accordance with the Framework, the Project Plan must be validated by an appropriately accredited third party.

Mitigation projects will typically be a mix of both the Responsibility Sphere and Societal Sphere Mitigation Projects as described in Step 2.

Step 4: Quantify the Mitigation Actions

The carbon benefits will be realized within a specified period of time after the mitigation project activity has been implemented. The Carbon Partner must verify that the emissions reductions occurred as described in the Project Plan (Step 3). The verification must also be conducted by an appropriately accredited third party.

Step 5: Disclose the Accomplishments

As the mitigation results materialize, they will be associated with the appropriate impacts. Event owners and Carbon Partners should disclose positive impacts by making the program results and projects publicly available. This disclosure serves to ensure that all climate benefits are tracked and accounted for, and will not be double counted. In addition, public reporting helps to engage stakeholders and build capacity for lower-carbon technology solutions in the sector.

Global, large-scale sporting events have significant environmental footprints. However, by mitigating the carbon impact through low-carbon technologies, events can demonstrate how collaboration, when mixed with innovation, can leave a lasting legacy for a more sustainable future.

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