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Special Report

THE GREEN SPORTS MOVEMENT



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INTRODUCTION



The Green Sports Movement

It was Robert Redford, a trustee of the Natural Resources Defense Council (NRDC), who first suggested that sports are the key to vastly extending environmental awareness in this country. Looking back on that moment in 2004, Allen Hershkowitz, a senior scientist at the NRDC, wondered why it took so long. “It’s crazy,” he said. “It took the environmental community more than 30 years from the first Earth Day to partner with sports. It was the elephant in the room. Only 13% of Americans follow science, but 63% follow sports.”

In part because this was a movement waiting to be born, progress was remarkably quick: By 2005, NRDC had an alliance with Major League Baseball (MLB). In 2007, the National Basketball Association (NBA) was added, followed by the United States Tennis Association (USTA) and the National Hockey League (NHL) in 2008, Major League Soccer (MLS) in 2009 and NASCAR in 2013. NRDC’s focus on professional teams was recently expanded to include college sports as well, both athletics and recreation. To date, NRDC advises more teams, leagues and college athletic departments about environmental issues than any organization in the world, and this has encouraged hundreds of universities in the United States to pursue sports greening programs.

In 2010, Hershkowitz and the NRDC conceived of and co-founded the Green Sports Alliance with Microsoft co-founder Paul G. Allen’s Vulcan Inc. The Alliance is a nonprofit organization with a mission to help sports teams, venues and leagues enhance their environmental performance. Inaugural Alliance members besides NRDC included the Portland Trail Blazers, Seattle Seahawks, Seattle Sounders FC, Seattle Mariners, Seattle Storm and the Vancouver Canucks.

Since launching nationally in March 2011 with these six professional teams and five venues, the Alliance has grown to over 200 professional teams and venues from 16 different sports leagues. The Alliance, which works with professional and college sports teams every day, also hosts annual summits, where representatives of nearly every major sport in the U.S., as well as suppliers of everything from solar panels to compostable plates, share ideas and information that help to advance the green sports movement.

In September, the Initiative for Global Environmental Leadership (IGEL) and the NRDC jointly sponsored a Wharton conference on Leadership in Greening the Sports Industry. The following special report includes information shared at the conference and gathered from experts in the field.

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Waste streams are becoming revenue streams, and that's one reason sports teams and leagues are embracing new sustainability models. Stadiums are plucking the low-hanging fruit and are now regularly powered by alternative energy, with highly efficient lighting, composting and vigorous recycling efforts. The work has proven to have benefits beyond simply "doing good" and is bolstered by big savings and year-end results.

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Greener venues are boosting the bottom line by growing revenue and shrinking costs. Companies with environmental messages are eager to reach the country's millions of enthusiastic and loyal sports fans by sponsoring green activities and events at stadiums, arenas and race tracks. Both professional and college sports are beginning to mine this new source of revenue, which has the potential to power profits and environmental efforts over the long term.

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Greening efforts in the sports world are extensive, but how much are they benefiting the planet? New efforts are underway to aggregate, quantify and measure how programs have performed based on energy, waste and water-use data. Next stop: sustainability reports that inform the public about the work in progress.

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With their millions of fans, professional and college sports have enormous power to influence attitudes and behavior toward the environment. When recycling becomes a normal part of attending a game, fans begin to expect and push for recycling at home and at work. And messages delivered at games, on TV and online influence tens of millions of fans on a regular basis.

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In nearly all measures of sports' environmental impact, airplane and surface travel — by teams and (mostly) fans — looms largest. Reducing miles traveled is a challenge because teams have far less control over fan behavior than over their own operations. But innovative approaches are making progress.



Greener Sports Venues are Reducing Costs

The greening of sports is no longer merely a concept — it's moving forward dramatically. Stadiums have installed wind and solar operations, improved lighting efficiency, ramped up recycling efforts and diverted increasing amounts of organic waste from the landfill through composting efforts. The payback is not just good public relations but, increasingly, real bottom-line savings.

The Seattle Mariners baseball team saw first-hand the financial benefits of working for energy efficiency when it reduced natural gas use 60% and electricity use by 30% from 2006 to 2009 at Safeco Field. The Mariners now have one of the most comprehensive environmental programs in sports. "There are a lot of naysayers, but when they see the numbers they start to pay attention," said Scott Jenkins, vice president of ballpark operations and chairman of the Green Sports Alliance. "Stadiums can become centers of best practices, and we've done that in Seattle." (The Alliance is a nonprofit organization with a mission to help sports teams, venues and leagues enhance their environmental performance.)

Speaking in Philadelphia last September at the Leadership in Greening Sports Conference, the Mariners' Jenkins said that his team had achieved more than \$2 million in savings through conservation efforts starting in 2006.

"It's worth more than \$16 million each year for the league if they can achieve similar savings," Jenkins said, adding that greening operations has multiple additional benefits that include fulfilling teams' social responsibility and positively influencing culture. "You can reach a lot of people," he said.

Building Momentum

The Mariners' experience is hardly unique, because most professional teams are picking the low-hanging fruit and saving money in the process. Baseball Commissioner Allan H. "Bud" Selig points out in his introduction to the Natural Resources Defense Council's (NRDC) 2012 Game Changer report that the league's 30 clubs are now sharing data on best practices for stadium operations, resulting in reduced environmental footprints — and a better bottom line — for all of its 2,430 regular season games.

Selig's counterparts in virtually all major sports have made similar commitments. It's not just talk or window dressing. Today, according to NRDC, 19 professional stadiums or arenas have achieved LEED certification (Leadership in Energy & Environmental Design, a third-party verification metric of green buildings), complementing 24 college sports facilities. Of 126 sports teams in five major North American leagues, at least 38 are using some form

"It's worth more than \$16 million each year for the league."

— Scott Jenkins, vice president of ballpark operations and chairman, Green Sports Alliance

of renewable energy, and at least 68 have energy-efficiency programs. All of the large caterers that service sports venues, feeding tens of millions of people annually, now offer "environmentally preferable" food and beverage options.

The NBA's Portland Trail Blazers, another founding member of the Alliance, make an excellent case study. The 20,000-seat LEED Gold Moda Center (formerly the Rose Garden Arena) hosts two million visitors a year at more than 200 events.

Justin Zeulner, the Trail Blazers' senior director of sustainability and public affairs, points to 2.5 million kilowatt-hours saved annually from energy upgrades at the arena, which is now running on 100% renewable energy. Electric use on game day has gone from more than 60,000 kilowatt-hours in 2008 to less than 50,000 in 2011. Annual electricity use has gone from 12 million kilowatt hours before energy-efficiency upgrades to less than 10 million now. The Trail Blazers' waste diversion rate has gone from under 40% in 2007 to nearly 90% now.

Basketball teams, Zeulner said, "are competing with each other to see who can do the most on environmental stewardship." And they have good reason to do that. Achieving LEED status cost approximately \$260,000, with spending on everything from consultants (\$150,000) and entry carpeting (\$10,000) to thermal image scans (\$2,500).

There are upfront costs, but also big savings. From a 2008 baseline, Zeulner counts \$2.1 million in energy savings, \$330,000 in water savings and \$570,000 in waste diversion. With an initial investment of \$422,500, the Trail Blazers have saved \$3 million since 2008.

Working toward Zero Waste

Achieving "zero waste" on game days no longer seems like an impossible dream for many teams, and it can be profitable. The San Francisco Giants were doing relatively well with a 2009 waste diversion rate of 57%, but they found plenty of room for improvement, and the rate soared to 85.2% in 2011 when the team intensified its effort to collect food waste for composting. The University of Colorado Boulder (CU-Boulder) achieved an 88% waste diversion rate at one game in 2011, and its total season waste generation at Folsom Stadium dropped 38% between 2008 and 2012. The stadium's zero waste effort is expected to save as much as 455 million BTUs of energy by reducing the need for energy-intensive virgin materials by manufacturing plants.

The Ohio State University, meanwhile, achieved an average 87% diversion rate in the fall of 2012 (with a peak rate at one game of 98.2%). The Cleveland

Indians cut their trash in half between 2007 and 2009, and that reduced compactor pickups by 64%, saving the team \$50,000 annually.

According to Alice Henly, resource specialist and coordinator of college sports greening at the NRDC (and author of its Collegiate Game Changers report), "Teams and venues are discovering that it generally costs more to landfill than to recycle. Zero waste is an aspirational goal that involves an ongoing systems-based approach that considers what comes into your venue as well as recycling what winds up as waste. Every waste stream is a feedstock for another process. All materials have value, so thinking about how to use our resources as intelligently and efficiently as possible can mean saving money."

The Mariners' Jenkins has also seen a fast return. He estimates that tooling up the composting operation — which included replacing some worn-out waste bins — cost \$150,000, but the team's savings in 2012 alone equaled at least that. "The initial investment has been paid back, and we're reaping the higher rewards now." The same case can be made for energy and water efficiency improvements (such as spending \$120,000 to replace water-wasting toilets that use 3.5 gallons a flush with more efficient units that use only 1.6 gallons).

When the Mariners noticed that chicken fingers were being sold with three different dipping sauces — but only one was getting used — they asked customers for their preference. "It's not a lot of money, but those dipping sauces were 75 cents a serving," Jenkins said. "Now we're saving that money and avoiding a landfill cost."

Solar to the Rescue

The Philadelphia Eagles' Lincoln Financial Field has been a long-time leader in greening initiatives. Its "Go Green" campaign (also the team's color), launched with assistance from NRDC and The Sexton Group back in 2004, includes compostable food packaging, cooking oil collection for biodiesel production, large-scale water conservation efforts ("The only water we waste is sweat," says a sign in the men's room), and recycled content paper for all tissue and napkin products.

In 2013, Lincoln Financial Field became the first American professional stadium to generate all of its own electricity for game days, through the

installation of 11,000 solar panels and 14 micro wind turbines (only 1% of the project's power generation, but a potent visual symbol). Together, the solar and wind projects provide more than three megawatts of electricity, which is six times the power the Eagles need for home games.

Given the visibility of pro football, the Eagles were able to attract sponsors for much of their greening work. For example, NRG, a New Jersey-based utility, built, installed and maintains the solar and wind energy systems, and through what's called a power purchase agreement has guaranteed the team annual price increases that are well below predicted utility rate hikes. Over the 20-year agreement, the Eagles anticipate saving millions. For its part, NRG has a guaranteed 20-year revenue stream, and whenever the energy generated at the stadium exceeds the Eagles' needs, NRG can sell the excess back to the grid.

NRG says solar is good business — it has installed photovoltaics at MetLife Stadium, providing power for the New York Giants and New York Jets. And it also signed an agreement to bring both wind and solar power to the New England Patriots.

In 2010 the commissioners of all sports leagues distributed a report co-authored by NRDC and the Bonneville Environmental Foundation (BEF) that guides venue operators through the process of evaluating the viability of solar at their site. As a result, solar is gaining ground at sports venues. Relying on the guidance provided by the NRDC/BEF Solar Guide (and from others), CenturyLink Field in Seattle (home to the Seattle Seahawks football team and Seattle Sounders soccer team) installed more than 3,700 solar panels over 2.5 acres, producing 830,000 kilowatt hours of electricity annually, and realized a 21% estimated energy cost saving. Through that and other measures, CenturyLink is avoiding emissions of 1,350 metric tons of carbon dioxide annually.

Conservation can also make a big difference. Busch Stadium, home of the St. Louis Cardinals, installed solar in 2012, but also started using compact fluorescents throughout the facility, installed occupancy sensors and a lighting control system, made efficiency improvements to the HVAC system and added insulation. The result was a 23% drop in energy use between 2007 and 2010, saving the team a total of \$300,000 in energy costs. And energy is 15% to 20% of the operating budget at Busch Stadium.

Savings at the Core

Saving money is built into the environmental initiatives that are part of many athletic businesses. According to Mike Lynch, managing director of green innovation at NASCAR, the league's green strategy was never meant to be a drag on the bottom line, but a financial asset. NASCAR Green can now point to Pocono Raceway, the "world's largest solar-powered sports facility," an impressive recycling effort, and a tree-planting program intended to offset on-track emissions.

A new NASCAR initiative is aimed at reducing the environmental impact of its 300 large transporter trucks, which each travel an average of 60,000 miles a year.

NASCAR's enthusiasm is complemented by big initiatives at the individual tracks. The Pocono Raceway was facing a 40% to 50% increase in electricity costs due to deregulation, said Brandon Igdalsky, president and CEO of the Pennsylvania track. The track considered wind and solar applications, and building a power-buying consortium with local ski areas and hotels. What worked was solar, and not on a small scale. Pocono Raceway purchased a three-megawatt array, with 39,960 photovoltaic modules. The system cost \$15.6 million in 2010, or \$5.20 per watt (it would be \$1.50 to \$2.50 today because of lower solar prices). A 30% federal income tax credit helped pay for the system.

In its first full year of operation, 2012, the solar array produced 4.1 million kilowatt-hours of electricity. Igdalsky projects a 12-to-15-year payback for the solar system, which has a 25-year lifespan. The track has become a solar ambassador. "People listen to us, and we are a great platform to spread the message," said Igdalsky. "Some 65,000 fans watch a NASCAR race." At Pocono Raceway, NASCAR crowds often reach 100,000.

Pocono Raceway isn't going it alone: In partnership with Panasonic Raceway at Sonoma in northern California installed a 353-kilowatt solar system that now supplies more than 40% of the track's electricity. The photovoltaic panels complement the 3,000 sheep that graze the infield in place of carbon-intensive lawn mowing.

Large solar arrays have come down in cost (as Pocono Raceway experienced) and that has made some venues reluctant to invest in technology that might be cheaper tomorrow. An alternative is

innovative solar leasing, which allows companies to simply purchase power from solar installed at their property by third parties.

California-based SolarCity specializes in zero-down solar leasing, and Peter Rive, chief operating officer, said that with such power purchase agreements, customers are “just buying energy, period. They don’t have to worry about tax credits and depreciation and getting a rate of return.”

Lancaster, Calif., has made a big investment in solar, and the city is partnering with SolarCity to put a \$10 million, 340-kilowatt system at Clear Channel Stadium (which hosts the minor league baseball team Jet Hawks). “This new array will save the city tens of thousands of dollars each year, and that’s significant in the current economic climate,” said Mayor R. Rex Parris. The leased array will provide 98% of the stadium’s energy use. “The old ballgame is moving into a technological new age by taking a swing at alternative energy,” reported the *Los Angeles Daily News*.

Penn’s Fast Savings

Dan Schupsky is an assistant swimming coach at the University of Pennsylvania, and also a master’s candidate in environmental studies. He was instrumental in creating the Athletics Eco-Reps program at Penn (founded with 13 varsity team members in 2012), and he’s also working to “green” the school’s facilities.

“We started with smaller projects, such as a shoebox recycling program, a water- and energy-use survey for athletes, and putting recycling bins in the locker rooms,” Schupsky said. “Penn became the first Ivy League school to join the Alliance, and starting last spring we really got busy.” Lowering the carbon footprint of the Penn Relays “is a lot of work, but it’s good work, and the student athletes are really engaged.” Penn’s leadership has been recognized by the “Ivy Green Initiative,” which encourages similar efforts by all Ivy League schools and others across the Northeast.

An obvious target for Schupsky was the Sheerr Pool, where he serves as aquatics director. Built in 1967, the pool reflects that older era of technology. But it’s been updated with a variable frequency drive (VFD) that can dramatically reduce the operation of the pool pump and save quite a lot of money. Schupsky said the unit cost approximately \$10,000, but will save more than that in its first year of operation, making a payback period of just 9.5 months.

The NHL could realize similar savings by applying VFD technology to its big cost center — making ice. “We can make the motors much more efficient,” said Omar Mitchell, the league’s sustainability director. He added that teams can also use cogeneration to capture and reuse excess heat from the operation of ice-making machines.

Penn’s pool technology has quick payback. But technologies with a longer return on investment (as in the Pocono Raceway case) makes some team and stadium owners nervous. Sean Langer, director of operations at the KFC Yum Center in Kentucky, home of University of Louisville basketball, told *The New York Times* that “seven to 10 years is a hard pill for my boss to swallow.”

Benefits Big and Small

Financial benefits can be obvious, as in lower energy and waste management costs, or more subtle, as in the case of the Miami HEAT’s transformation of its basketball stadium. LEED green building certification on the team’s existing facility, in 2009, cost only \$74,000, said Jackie Ventura, operations coordinator for the Miami HEAT NBA basketball team, “because it was mostly based on things we were already doing.” LEED is widely recognized, and the American Airlines Arena’s LEED certification, along with other environmental initiatives such as electronic waste collection days, community events (including HEAT Beach Sweeps and food donations to homeless shelters), and both water and light upgrades, put the HEAT on the map for green-oriented sponsors.

Ventura said that the HEAT’s energy savings total \$1.6 million annually, and that its return on investment (from just energy savings and sponsorships) is a huge, one-time 3,413% return in one year. And that does not count savings related to shifting to ultra-low-flow urinals, compostable paper plates and strategically placed coolers replacing plastic water bottles. “We’ve gotten lots of recognition,” Ventura said. “It’s nice to be known for something other than LeBron James.”

The impressive thing about the greening movement is that it has been embraced widely by many teams and leagues — often for compelling reasons. In 2010 the NHL partnered with NRDC to launch NHL Green. Commissioner Gary Bettman was in part motivated by his concerns about climate change, which has led to lakes freezing later and melting earlier — challenging the ice hockey tradition of skating on frozen ponds. The NHL now measures all energy,

water and waste generation at all NHL arenas and encourages more efficient operations. The league offsets emissions from events like the Stanley Cup Playoffs and the Winter Classic, replenishes water in an amount equal to its arena use, and operates a food-recovery program that has donated more than 200 tons of prepared food to local shelters.

The NHL food program, launched in the 2010-2011 season, provided 163,000 meals in its first year and diverted 105 tons of food from landfills and incinerators, technologies where food waste causes greenhouse gas emissions. Such reuse and recycling programs, which have won EPA awards, are now a standard and expected part of professional sports.

Visitors to the Trail Blazer's Moda Center now see Greendrop recycling stations (constructed out of post-consumer materials) nearly everywhere they

look. They can park their bikes in one of 250 racks, or charge their electric car at one of 26 stations. If they're hungry, they'll find that 90% of the food being offered is local or organic (and work is ongoing for the last 10%). And the plates and cutlery they'll use are compostable, which was very helpful in having the Moda Center go from 38% waste diversion in 2007 to 90% now.

The greening of sports is a relatively new initiative, with both NRDC and the Alliance as major catalysts in partnership with the biggest pro leagues and the teams. The sports greening movement has already accomplished much, and will definitely do a whole lot more as team owners realize it's about more than goodwill. Thanks to the low-hanging fruit of energy savings, sponsorship possibilities and invigoration of the fan base, greening can be a profit center, too.





How Sports Greening Is Generating New Revenue

For leaders in the sports greening movement, the first few years have more than justified their hard work. The Portland Trail Blazers' story is a good example, advocates say: Cost savings generated by the team's green initiatives have continued to grow year over year for the past four years. And 2013 is shaping up to be the best yet in terms of savings from reduced energy and water use, and from a more than 80% landfill diversion rate.

But after four years, the growth curves at the venues of early adopters are starting to level out, says Justin Zeulner, senior director of sustainability and public affairs for the Portland Trail Blazers. While new strategies continue to yield new savings, the reality is that those who started greening several years ago have already plucked much of the

“The strongest business case is to diversify, to think about operational cost savings, but also to think about brand and sponsorship opportunities.”

— Alice Henly, resource specialist and coordinator of college sports greening, NRDC

low-hanging fruit. The organizations will continue to benefit financially from the steps that have already been taken, but finding new approaches that will boost the bottom line is likely to become more difficult in the coming years.

Zeulner was one of the speakers at the recent Wharton conference, “Leadership in Greening the Sports Industry,” sponsored jointly by Wharton's Initiative for Global Environmental Leadership (IGEL) and the Natural Resources Defense Council (NRDC). This article includes information shared at the conference, in addition to insights gathered from experts in the field.

Given that many of the easy gains have already been realized, revenue growth from green sponsorships is likely to become more important as a business driver of the movement. “The strongest business case is to diversify, to think about operational cost savings, but also to think about brand and sponsorship opportunities,” says Alice Henly, resource specialist and coordinator of college sports greening at the NRDC. “And the business case is being made by a lot of the leaders who have jumped in with two feet in the first few years of this movement.”

Green Companies and Green Sports Sponsorships

Eager to associate their brands with the excitement of game day and the emotional connection fans have with their teams and each other, “some of the largest industries on earth pay millions of dollars to affiliate with professional sports,” according to the NRDC's “Game Changer” report, and have for decades. What is new and growing rapidly in the world of sports sponsorships is the interest companies are showing in the industry's sustainability work.

AEG, which owns or manages 68 sports and entertainment venues around the country, has seen existing sponsors gravitating toward green sports efforts, says Jennifer Regan, former director of

global sustainability at AEG and now principal at We Bring It On, Inc., a consulting company specializing in the live entertainment and sports industries.

Speaking at the Wharton conference, Regan noted, “There aren’t climate deniers in the business community anymore, so sponsors, even if they aren’t a green brand, are looking for stories they can tell to their stakeholders about how they are investing in innovation and sustainability.” These partners, she added, “want to be able to tell their sustainability success stories alongside the excitement of our sports and entertainment venues.”

The success of such sponsorships depends to a large extent on the alignment between a company’s message and the green sports initiative it sponsors, observers say. That is why Christopher Bradlee, market development manager for BASF’s line of biopolymers in North America, was eager to partner with the Seattle Mariners’ zero-waste initiative. Bradlee saw a mutually beneficial connection between the venue’s zero-waste effort and his own responsibility for increasing awareness of zero-waste programs and the use of compostable products. And he knew that Seattle was an important market for his business.

According to Bradlee, a sponsorship with the Mariners’ program also fit the company’s new mission. Sustainability had been important to BASF for many years, but its significance jumped to a whole new level when the multi-billion dollar chemical firm revamped its mission last year and made going green a key focus.

Despite all these compelling reasons to sponsor the Mariners’ zero-waste program, Bradlee knew that BASF had a long-standing policy of not sponsoring sport teams. Still, he felt so strongly about the potential of a partnership that he went to the company’s board of directors to present his case. “We’re not sponsoring a team,” he told the board. “We’re aligning with the programs that are at the facility, and really we’re carving out new space.” The board agreed and gave Bradlee approval to launch BASF’s first sports project.

The Mariners’ extensive zero-waste program, which has now achieved an 86% landfill diversion rate, includes a very popular program known as Sustainable Saturdays. As part of this program, fans engage in a green-themed trivia challenge highlighted on the team’s giant, energy-efficient LED display board. The prize is substantial — this year it

was a tablet computer with a year of free data service — and so is the participation. And the result “from a brand perspective is very effective,” notes Bradlee.

At the end of the first year, BASF fielded a detailed survey of fans that attended games on Sustainable Saturdays, and found that the company had gained important brand awareness. The same survey also revealed that the sponsorship was building not just brand awareness but brand loyalty, which Bradlee says is key. Sustainability sponsorships in sports offer a unique value, Bradlee adds, and it’s different from the boost generated by sponsorships at non-sport facilities. “People are very loyal to their sports teams, and by having sponsorships at sports venues, that loyalty is transposed over to the brands sponsoring the games.”

When Dow decided to partner with the Olympic Games in Sochi, Russia in 2014, it was also interested in increasing its brand awareness and loyalty. Dow makes many products that are valuable to sustainability efforts, most notably in construction, agriculture, packaging and infrastructure. While these products are well known in the U.S., Teresa Angsten, Dow’s Olympic-Sports marketing manager, notes that “outside the U.S., people may know the Dow name but not necessarily all the products we have to offer in terms of solutions.”

Primarily a business-to-business company, Dow was less interested in the Olympics’ enthusiastic fans than it was in the enthusiasm of the Olympic Organizing Committee to “ensure the long-term sustainable development and flourishing of the city of Sochi, the Krasnodar Region and Russia as a whole,” Angsten states. As the Official Chemistry Company of the Olympic Games, Dow is introducing its sustainability products directly to those who will use them by working with local companies and marketing partners of Sochi 2104 to mitigate the Game’s direct carbon footprint.

‘Walking the Walk’

The competition for sponsors of green initiatives is intense, and teams and venues vie with each other to create authentic and effective greening programs that sponsors will find attractive, experts say. The Miami HEAT, the NHL and NASCAR, for example, have approached this challenge in three different ways.

The HEAT Group, which owns the Miami HEAT basketball team and manages day-to-day operations

of American Airlines Arena where the team plays, began its green sports initiatives not because they were green, but because those in charge considered such a program to be “fiscally responsible” steps that would save money and improve the bottom line, says Jackie Ventura, sustainability coordinator for the HEAT Group.

It was not until the NBA, in partnership with its environmental advisor, the NRDC, encouraged the arena to explore LEED certification that the organization realized just how green the facility had become. Already close to meeting LEED standards, the HEAT decided to pursue LEED certification, and began a search for sponsors. Both Home Depot and Waste Management were interested, and together invested \$1 million in sponsorships because of the certification process that first year.

The participation of Waste Management was especially significant to the HEAT. In the past, the company had resisted repeated appeals to become a sponsor. “As much as we tried, as much as we pushed, as much as our corporate guys went after them, they would not sign on,” notes Ventura. Four years later, Waste Management is still sponsoring the HEAT’s sustainability work, and other sponsors have signed on as well, including Pepsi, Levy Restaurants and Pritchard Sports and Entertainment Group — which provide the venue with beverages, food and cleaning services, respectively.

The HEAT’s success with these first green sponsorships opened up a whole new market for the venue. “Now that we have this history and [companies] know that our success was not just a fluke, that we really do walk the walk,” the HEAT Group has decided to go after green sports sponsorships much more aggressively, Ventura says.

Food Recovery

While teams like the Miami HEAT have formed individual relationships with sponsors around their green initiatives, there are also greening platforms (and green sponsorship opportunities) at the professional league level. For example, the NHL has consciously set about building a solid sustainability platform to offer potential sponsors, observers note.

The NHL Food Recovery Program is the most well-known of the NHL Green initiatives, but two other programs are also contributing to a healthy environment and educating fans about important environmental issues. The league’s Gallons for

Goals restores 1,000 gallons of water to a critically dewatered river for every goal scored during the regular season. Meanwhile, through its Hat Tricks for Trees program NHL Green has pledged to donate 50 trees to the Nature Conservancy’s Plant a Billion Trees campaign for every hat trick scored during the regular season.

These fan engagement activities are promoted at games and on the league’s website, and NHL Green is now beginning to actively exploit the considerable marketing power of its social media presence. (The league has more than two million followers on both Facebook and Twitter.)

This level of commitment reflects the kind of genuine concern for the environment that is driving so much of the green sports movement, observers say, noting that it also makes sense from a business standpoint, attracting like-minded sponsors that want to support the league’s initiatives with their advertising dollars.

NASCAR has been particularly determined and focused in securing green sponsorships. Mike Lynch, director of Green Innovation at NASCAR, says that NASCAR Green “was intended from the beginning to be a business.”

With millions of fans and billions in revenue, NASCAR did not skimp in launching its new initiative. Lynch showed the attendees at the IGEL/ NRDC conference a 30-second TV spot promoting NASCAR Green, which was seen by 10 million viewers every week for 38 weeks. As a result of the green platform, a survey revealed that 75% of avid NASCAR fans were aware of NASCAR Green and believed the sport cares about the environment. On average, according to Nielsen ratings, NASCAR has an average of 100 million unique viewers.

As part of its Race to Green program, NASCAR Green also ran an online video vignette supporting its tree-planting program, sponsored by UPS, which motivated more than 100,000 fans to donate a dollar in support of tree planting in areas that had experienced a natural disaster. And extensive marketing of NASCAR’s newly branded 15% ethanol race fuel, trademarked as American Ethanol, has helped make NASCAR fans “50% more likely than non-fans to be accepting of ethanol in their street cars without any concern,” notes Lynch.

With programs like these, NASCAR Green has garnered 25 sponsorships in five years. Fifteen

of those sponsorships involve existing NASCAR partners that have extended their sponsorships into the green space; the other 10 are new — not only to NASCAR but also to sports.

Long-term Relationships

If growth through green cost savings begins to level out once the low-hanging fruit is harvested, what are the longer-term prospects for bottom-line growth through green sponsorships? According to Martin Tull, executive director of the Green Sports Alliance, “There is a very large and growing green economy and many of those companies and potential sponsors are not yet involved in sports marketing.” (The Alliance is a nonprofit organization with a mission to help sports teams, venues and leagues enhance their environmental performance.)

The Trail Blazers’ Zeulner agreed when he spoke in September at the Green Sports Alliance Summit in New York City. Citing a recent study, he reported that sports sponsorships represent a \$14 billion per year industry in North America. “And yet we are not seeing it being used much for the greener products and services that are out there,” Zeulner noted.

But do these potential green sponsorships represent incremental new business or will existing sponsors simply switch from one team or vertical to another? “Is it a zero-sum game?” Henly asked participants on a panel on sponsorships at the IGEL/NRDC conference.

Lynch said in response that green sponsorships of NASCAR race teams have been doubling every year. Four years ago, just 15 green companies bought sponsorships on race cars; the next year it was 30; last year it was 60, and in 2013 it looks like 120 green companies will sponsor NASCAR race teams. Lynch sees this expanding group of sponsors as “an opportunity space” that will allow NASCAR Green to continue growing without cannibalizing any of NASCAR’s other business.

Ventura also spoke about going after new sponsors, and Zeulner was enthusiastic at the IGEL/NRDC conference about his team’s experience and the “millions of dollars that have rolled in now that we are authentic and real in the space. These are new marketing dollars. These partnerships didn’t happen before.” Other leagues are seeing the same effect, observers say, as new sponsors such as Sprint and Continental Tire are signing up with the NBA and MLS respectively.

Attracting Sponsors and Students

In professional sports, green sponsorships often include elements designed to educate fans about sustainability and move them to action. In the world of collegiate sports, it is often the fans who are pushing their schools to join the green sports movement.

The pressure begins even before students enroll. Surveys by UCLA, the University of Michigan and Tufts University all show that many students choose schools based in part on their perception of the school’s sustainability profile. A survey conducted by the University of Colorado-Boulder found that this was true for 41% of the school’s incoming freshman. In a 2013 *Princeton Review* survey of college applicants, 62% said a “college’s commitment to the environment would impact their decision to apply to or attend a school.”

Where students get their perception of a school’s commitment to sustainability is key, according to Dave Newport, the director of CU-Boulder’s Environmental Center. Athletics, he added, is “the front porch of the university,” so having green sports initiatives in that realm is important to the university’s marketing efforts to students.

Those same green initiatives affect the school’s financial health as well, observers note. At CU-Boulder’s Folsom Field, the school’s popular mascot, a female buffalo named Ralphie, has also become the mascot for the football stadium’s zero waste program, “Ralphie’s Green Stampede.” The program has attracted several sponsors, including White Wave Foods, which makes and sells such well-known brands as Land-o-Lakes and Silk soy products. The White Wave sponsorship was “a very high-profile activation, with their brands on the scoreboard, on recycling cans, on t-shirts, in announcements — so lots of visibility,” says Newport. Ralphie’s Green Stampede also “got a lot of ink,” adds Newport, including an article in *The New York Times*.

As in professional sports, authenticity is critical to winning green sponsorships in collegiate sports. CU-Boulder’s zero waste program includes compostable food service and packaging, compost collection containers throughout the stadium, plant-based compostable bags to collect compostable material, the elimination of trash bins in favor of recycling and compost containers, and

the active involvement of students in collecting all waste in and around Folsom Field.

And now that Ralphie's Green Stampede has been successful and integrated with other sports at CU-Boulder, the university is considering an expansion that would reach beyond athletics. "What we're looking for now," says Newport, "is an integrated sustainability brand for all our zero waste activities all across campus." The university hopes that such integration will help drive improvements in the effectiveness of the now disparate programs.

Inspired by a very successful campaign at the University of Michigan known as Planet Blue, CU-Boulder is also looking at the possibility of integrating all of its sustainability activities, from athletics to academic research, under one rubric.

The University of Michigan has used such an integrated brand to attract sponsorships. "But they're using athletics as the platform because of its high visibility, and right now it's returning some pretty good value," Newport notes.

Professional sports teams are well known for their marketing prowess. "Partnerships, that's my industry, that's what we do; we're marketing empires," said Zeulner during his presentation at the IGEL/NRDC conference. And he and other observers note that increasingly, as teams, leagues and venues join the sports greening movement, they are using their marketing know-how to forge partnerships with companies that are eager to associate their green brands with millions of loyal sports fans across the country.





Reducing Sports' Impact on the Environment

It's one thing to cite the number of watts and BTUs saved by giving sports stadiums an efficiency makeover, but it's quite another to accurately assess the impact on the environment.

Cracking the code for such metrics was one of the topics at a recent conference — Leadership in Greening the Sports Industry — sponsored jointly by Wharton's Initiative for Global Environmental Leadership (IGEL) and the Natural Resources Defense Council (NRDC). This article includes information shared at the conference held at Wharton and gathered from additional experts.

The greening of sports movement is still very much under construction, and that means all the pieces aren't yet in place — but the scaffolding is going up quickly. NRDC's partnership with MLB, which launched the sports greening movement, initiated the first league effort focused on gathering data about energy, waste and water use from all of the league's venues.

NRDC then spread that initiative to NBA and the NHL, and it was a principal focus of NRDC's agenda when it co-founded the Green Sports Alliance. "From day one, we've worked with the teams to understand and collect data, looking at the environmental baseline," said the Alliance's Tull. "We're aggregating the data to better understand the impact of our members in the industry." (The Alliance is a nonprofit organization with a mission to help sports teams, venues and leagues enhance their environmental performance.)

On a pie chart of major U.S. climate impacts, sports are unlikely to show up. The total annual greenhouse gas emissions from all NHL games, including team travel and league operations,

for instance, is estimated at slightly more than 500,000 tons annually, according to NRDC's Allen Hershkowitz, a senior scientist. That compares with a single coal power plant's emissions, which can range as high as 23 million tons per year. But energy and waste costs are a major expense for the teams that incur them and making green improvements has been a win-win for sports organizations and fans. The environment is a big beneficiary when sports greening influences fan behavior at home and on the job.

Reports *The New York Times*, "As large as they are, sports stadiums consume just a sliver of the nation's energy and produce a fraction of its

“There are no giant, single initiatives in business or government that can solve our ecological problems. They'll only be solved by millions of small advances. Small progress leads to big benefits.”

— Allen Hershkowitz, a senior scientist, NRDC

waste. But they are seen and used by millions of Americans every day, which has helped leagues counter the perception that sports teams are wasteful enterprises and in fact can convey socially responsible messages to fans of all political and economic stripes.”

Sports have a relatively light impact, but, as with other sectors, it is felt in many areas. The United Nations Environment Programme reports, “Building and managing a sport facility and operating an event uses energy and can contribute to air pollution, greenhouse gas emissions and waste generation, as well as to ozone-layer depletion, habitat and biodiversity loss, soil erosion and water pollution.” The impacts — which are common in large public organizations, and hardly limited to sports — include damage to fragile ecosystems, noise and light pollution, energy use and emissions, soil and water pollution and waste generation.

Tricky Metrics

Professional and college sports, both in the U.S. and internationally, have an environmental impact that’s sometimes hard to quantify, because activity both at the venues and getting to and from them needs to be measured, along with impacts related to procurement and other operations. And some of the larger variables, such as travel, are hard for the teams both to measure and to positively influence.

Martin Tull, executive director of the Green Sports Alliance, said that the group’s focus has been “on the best practices side of the equation,” but that’s changing. The Alliance is now working hard to encourage the measurement of the environmental impact of the teams’ achievements, but it’s no simple task. “You quickly run into the fact that the impacts are very different based on the sport, the venues and how many games are played per year,” Tull said. “The Staples Center in Los Angeles may be a very energy-intensive venue, because it’s also one of the busiest venues. We need to be careful about how we measure and report energy intensity, because data points can be taken out of context.”

And, obviously, measurements have to be done on a level playing field, with each team and league evaluated by similar metrics. Britain’s Carbon Trust estimated the impact of a single 2012 championship soccer match (FA Community Shield) at 5,160 tons of carbon dioxide, with transportation (mostly driving to and from the game) responsible for 5,000 tons. The stadium’s energy use, which led to 60 tons of carbon emissions, was down 7%, thanks to efficiency improvements in lighting, heating and other systems.

Big venues can have outsized environmental impacts. During game time, Cowboys Stadium in Dallas is illuminated with 30 million LED light bulbs.

But the impact would be far greater if the team wasn’t resolutely pushing environmental initiatives, including pledges to reduce solid waste by 20%, energy by 20% and water consumption by a million gallons annually.

Measuring Progress

Even without sophisticated reports, there’s plenty of evidence that the sports greening movement is helping the environment in small and large ways. Scott Jenkins, vice president of ballpark operations for the Seattle Mariners, said that the team has diverted an average of 500 tons of waste from landfills annually since 2005. In 2012, it was 1,000 tons.

Food prepared at the Mariners’ stadium and not sold goes to social service organizations, and food scraps are composted. Waste paper and cardboard are sold, as are plastic bottles and valuable scrap metal.

The San Diego Padres partnered with a biofuels company, and is providing used cooking oil that is now running local school buses. The benefits include both lower emissions from the buses and avoided disposal impacts from the oil. Again, it’s not a huge win for the planet, but one well worth making. After all, as NRDC’s Hershkowitz reminds us, “There are no giant, single initiatives in business or government that can solve our ecological problems. They’ll only be solved by millions of small advances. Small progress leads to big benefits.”

International Impact

Dow’s Teresa Angsten said the company launched a 10-year partnership with the Olympics in 2010. A major benefit, she said, is that the partnership gives the company access to the on-the-ground professionals who build temporary Olympic villages. Since Dow has a portfolio of environmentally preferable energy-efficiency and construction materials — such as cool-roof technology and insulation useful for skating and curling events — the partnership results in events with smaller carbon footprints.

In 2014, Dow will be in Sochi, Russia, for the Winter Olympic Games, and the company is working on both installing energy-efficient windows and improving farming practices. Parts of Dow’s 2012 London Games stadium wrap, made of hundreds of fabric panels, were repurposed for projects benefiting former child soldiers in Uganda, and

for use at shaded community areas at the 2016 Summer Games in Brazil.

The 2012 London games were “the greenest ever” held, said the independent Commission for a Sustainable London. Among other benefits, the venue was largely accessed by public transit, which both mitigated one of sports’ biggest impacts and reduced the threatened gridlock. Some 86% of Olympic visitors traveled by rail, according to the post-game sustainability report. And 99% of the 61,000 tons of waste was either recycled or reused.

Jill Savery, an Olympian who headed sustainability efforts for the America’s Cup races in San Francisco in 2013 and also worked on sustainability initiatives for the 2012 Olympics, was on the ground helping embed environmental consciousness into the fans attending the races in San Francisco. She said that although the first environmental efforts for the Olympic Games started as early as 1994, greening really began to take hold during planning for the 2000 games in Sydney, Australia.

Highlights included efforts to save water and energy as well as green building initiatives at athletic venues and the Olympic Village. “And then it moved to another level in Vancouver, and reached even higher in London,” she said, adding that efforts to build sustainability at the FIFA TM World Cup soccer matches began in Germany as early as 2006, with the Green Goal Program.

In 2013, the America’s Cup achieved an 85% event waste diversion rate. Single-serve plastic bottles were banned, and all plates and cutlery were compostable, said Savery, co-editor of the book *Sustainability and Sport*. “In San Francisco, we trained a team of people to go through the waste — it’s the only way to get high diversion rates,” she said.

At the 2007-2008 FA Cup Final in England, a so-called “Carbon Footprint” campaign reported major gains, including the gathering of 160,000 pledges on everything from installing energy-efficient light bulbs to taking group buses or walking to games (or even watching events at the pub with friends). By taking free buses, for examples, fans from Wales saved 18.39 tons of CO2 equivalent emissions.

“In Europe, they recognized the issue of climate change long before we did,” said Savery. She cites environmental makeovers at Formula 1 racing and other popular world sports. “Sustainability is trickling into every major sporting event and the sports industry globally,” she added.

The Alliance’s Tull noted his organization hasn’t yet been involved in international events, but it is having discussions about the World Cup and Rio’s Summer Games in 2016. “We have a growing interest in learning from the experiences of these mega-events and from the international teams and venues that have reached out to the Alliance,” he said.





Greener Sports Raises Public Awareness and Action

The greening of America's sports facilities is already having direct influence on the health of the environment. But that impact is dwarfed by the potential of sports greening to affect the attitudes and behavior of fans throughout the country. As Allen Hershkowitz, NRDC senior scientist, routinely reminds his colleagues, given how many Americans follow sports and how few follow science, "climate deniers can attack the EPA with impunity, but they cannot attack MLB, the NHL, the NBA or NASCAR, which have all indicated a concern about the effects of global warming on their sport."

Hershkowitz was among the speakers at a recent conference titled, "Leadership in Greening the Sports Industry," sponsored jointly by Wharton's Initiative for Global Environmental Leadership (IGEL)

"The key with sports is not just the impact on the venues, but the impact on those who attend the events, view, read and listen to sports."

— Kenneth L. Shropshire, director of the Wharton Sports Business Initiative

and the NRDC. This article includes information from the conference held at Wharton, as well as insights gathered from additional industry leaders.

According to Kenneth L. Shropshire, a Wharton legal studies and business ethics professor and director of the Wharton Sports Business Initiative, "The key with sports is not just the impact on the venues, but the impact on those who attend the events, view, read and listen to sports." Starting with Jackie Robinson, sports have played a profound role in moving American culture forward, notes Shropshire. "The impact beyond the game has been seen in issues from race and gender to the more direct issues of teamwork and leadership," he adds.

During the conference, Frances Beinecke, president of the NRDC, said that it is not possible to make a significant difference "if we do not have the public with us." Pointing to sports' huge popularity in the U.S., she noted: "We work on [these issues] every day, but we need the [support of the] broader general public, and that's where the sports greening effort is so important."

Measurable and Immeasurable

Given the number of people who attend sporting events in this country each year (close to 300 million in 2005, according to a study by the North American Association of Sports Economists), the potential impact of green sports facilities on fans is large. The process of measuring that impact is just getting started.

The chemical giant BASF began surveying Seattle Mariners fans in 2012 to evaluate the success of the company's partnership with the team's zero-waste program. BASF is interested in assessing more than just the marketing effectiveness of the partnership. The company also wants to know "if it is helping people be more sustainable at home," says

Christopher Bradlee, market development manager for BASF's line of biopolymers in North America.

"Certainly we can measure success from a business standpoint by looking at economic indicators," adds Bradlee. "But the social indicators of how people are integrating this into their homes and work environments are very important to us." To get a handle on this, BASF is partnering this fall with the city of Seattle to field a new survey designed to measure the effect on fans' attitudes and behavior.

The results of the BASF survey aren't yet in, but the results of another study undertaken at the university level by Jonathan Casper, a professor at North Carolina State University (NCSU), were published in 2012 in the *Journal of Sport Management*.

Casper surveyed fans who had attended a green-themed NCSU football game. Seventy-five percent of the 2,700 who responded said that they would be more active in recycling in their everyday lives as a result of sports greening. Responses were similar when fans were asked about increasing their involvement in energy conservation, biking, the use of compostables and picking up litter.

It is tempting to attribute the impact on fans primarily to the announcements and signage at stadiums — on everything from scoreboards to food containers. But Martin Tull, executive director of the Green Sports Alliance, suggests that many of the attitudes and much of the behavior that fans pick up is simply the result of attending games at green stadiums where recycling and composting bins abound. The Alliance is a nonprofit that helps sports teams, venues and leagues enhance their environmental performance.

"Every time the fan touches that cup and then has to make a choice about where it goes, you're normalizing the behavior that recycling is responsible, and should be done throughout the community," Tull says. "If you experience these types of conservation efforts in person at a sports venue, it starts to feel like that is becoming more the norm. I think that can be a really powerful point of inspiration for people."

According to Alice Henly, resource specialist and coordinator of college sports greening at the NRDC (and author of its "Collegiate Game Changers" report), people are now coming to expect greener stadiums, which encourages them to regard "green infrastructure, green operations and green policy in sports venues as the new norm."

Green stadiums do more than make recycling and composting seem normal; by setting an example in the parks of beloved home teams, green sports draws on a deep well of trust. NRDC's Hershkowitz points to the importance of this trust in propelling the kind of mass movement that is needed to make a difference.

"We need a cultural shift in the way people think about the planet," says Hershkowitz. "We need a cultural shift in attitudes and expectations about our relationship to the earth. And cultural shifts occur not because governments lead the way, but because people connect with trusted networks, people they believe and trust. Sports is one of those trusted networks."

This trust can help move people beyond political ideologies and ingrained attitudes. Indeed, Tull adds that the very term climate change "brings up all kinds of political issues and baggage. Focusing on outcomes has been more important." But because sports is a trusted network, Hershkowitz says, "when you go to a game and you see something about recycling or climate change or water conservation, and it's done by the New York Yankees or the Boston Bruins or the Miami HEAT, you don't see it as a political statement."

Reaching Beyond Stadiums

But much of the greening that influences fans attending games goes unnoticed by the far greater audience watching the games on TV or listening to the play-by-play on radio or via the Internet.

The potential of reaching this huge audience has not gone unnoticed by the NRDC, the Alliance and the individual teams and leagues involved in the greening of sports. Two NRDC-produced public service announcements promoting recycling, water conservation and environmental stewardship in general were broadcast in 2012 by the NBA and the NHL on ESPN, ABC TV, NBC Universal, TBS and TNT.

"Those two commercials alone were seen by almost 45 million people in one week," says Hershkowitz, adding, "We have produced public service announcements that have reached over 100 million people." For its part, NASCAR Green has aired a 30-second spot that "was seen by 10 million viewers every week for 38 weeks," Mike Lynch, managing director of green innovation at NASCAR noted during the conference.

And these viewers are not the usual audiences environmental groups talk to, according to Hershkowitz. “Look at the markets we’re going into — Charlotte, St. Louis, Cleveland, Columbus, Pittsburgh, Houston, Kansas City, Memphis. We are in all those markets. We are reaching middle America in a way that our traditional environmental advocacy strategies never allowed us to do.”

The green outreach extends to the small screen as well. NBA Green, NHL Green, NASCAR Green, the Portland Trail Blazers, the Seattle Mariners and many others have active websites devoted to sustainability. And virtually all of the teams, leagues and venues engaged in greening sports are using social media to further that goal.

Mainstream media has also helped extend the reach of the sports greening initiatives. According to Henly, TV interviews with supportive commissioners, owners and players are available for viewing online, and the press, both online and in print, has covered everything from the installation of a large wind turbine at the Cleveland Indians’ Progressive Field to a bike program at games for the Dynamos, a professional soccer team that plays at BBVA Compass Stadium in Houston.

Press coverage of sports greening is already well established. Back in 2007, *Sports Illustrated* editors responded to numerous presentations by the NRDC and ran a cover story on “Sports and Global Warming: As the Planet Changes So Do the Games

We Play — Time to Pay Attention.” Even when the coverage is less than hoped for, it often advances the cause. Scott Jenkins, vice president of ballpark operations for the Seattle Mariners, recalled that when the stadium first started giving fans the option to purchase Safeco field soil (from park composting), commentators on ESPN joked about the team “handing out manure.” But Jenkins was still pleased. “At least we got those guys talking about recycling and environmental issues.”

No one has yet figured out a way to fully and accurately measure the impact of these efforts, either in the ballparks and through the media. Hershkowitz has spoken to major corporations that have sponsored sports for decades, and even they struggle to discern how their sponsorships affect customers’ attitudes and behavior. “It’s the holy grail of measurement, to watch that transition from leadership at a venue, at a culturally iconic building, to the community at large and to households,” Henly notes.

But as Hershkowitz adds, “just because it’s not measurable, doesn’t mean it’s not important.”

With millions of fans growing accustomed to recycling and composting at their home team stadiums, and with millions more engaging with their teams green messaging through online and on-air media, greening through sports increasingly serves as a wedge that is raising public awareness about environmental protection.





Green Sports and Transportation: The Elephant in the Room

The biggest carbon impact of sports events typically comes from fans getting to and from the game, a factor that teams and leagues can only influence, not control. The Portland Trail Blazers estimate that energy used by the arena is responsible for 24% of its carbon footprint, while 73% is related to transportation: Attendee commuting totals 58%, employee commuting is 11% and business travel accounts for 4%.

This was the topic of a panel session at a recent Wharton conference on Leadership in Greening the Sports Industry, sponsored jointly by Wharton's Initiative for Global Environmental Leadership (IGEL) and the Natural Resources Defense Council (NRDC). This article includes information shared at the conference and insights gathered from experts in the field.

Martin Tull, executive director of the Green Sports Alliance, recognizes the importance of addressing transportation issues. "Getting fans quickly and safely to the event is as important as it is complicated." The Alliance is a nonprofit aimed at helping sports teams, venues and leagues enhance their environmental performance.

"The carbon emissions from fan transportation can be a significant portion of the sports organization's emissions," Tull adds. The issue is easiest to tackle in large cities with well-developed public transit systems. "Regardless of the venue's location, there are steps that can be taken to encourage ride sharing, the use of public transportation, and even biking and walking."

Tull points out that teams can be proactive by offering bicycle parking and preferred spots for electric vehicles and carpools. Partnerships with

local or state transportation agencies can also be very successful for both parties. And in part because of the work of the NRDC and the Alliance, all of these initiatives are underway at sports venues around the country.

Encouraging Public Transit

Many teams are encouraging fans to use public transportation where available. Bike racks at Portland's Moda Center are encouraging fans to ride to the arena and the regular Bike to Blazers event is popular, often attracting more than 100 riders. The perks are plentiful, including free food and beverages for riders when they arrive, discounts on shirts, free bike tune-ups and more. The Blazers also subsidize transit passes for their employees, who benefit from Portland's world-class light rail and bus systems.

"Regardless of the venue's location, there are steps that can be taken to encourage ride sharing, the use of public transportation, and even biking and walking."

— Martin Tull, executive director, Green Sports Alliance

More than 30% of Moda Center visitors on game day now come via public transportation, according to the team. Even better is the performance achieved by the 2012 Olympics in London. "You

can't encourage people not to drive to an event unless you have a public transit system and make it easy for people," said Jill Savery, who headed sustainability efforts for the America's Cup races in San Francisco in 2013 and also worked on sustainability initiatives for the 2012 Olympics.

A free transit pass came with every ticket sold to the 2012 London Olympics, Savery noted, and attendees were equipped with maps and timetables. Ambassadors in bright pink vests helped guide them to their destination. "It's all about behavior change," she added. "If people try something new and have a good experience during a special event, it can lead to changes in their own lives."

Savery's work on the America's Cup in 2013 helped shape a policy that promoted the use of bicycles as a mass transit option. Even event workers used bikes, including cargo bicycles to move goods in and out of the event. The San Francisco Bicycle Coalition provided bike valet parking corrals in both 2012 and 2013. In 2013 alone, more than 6,000 visitor bicycles received valet service during 30 peak race days. Attention to detail like that led to 80% of spectators traveling to the event by walking, biking or taking transit, Savery said.

Doug Behar, vice president of stadium operations for the New York Yankees, says that the team also encourages fans to get to games via public transit. Using Metro North's "Take a Train to the Game" program, on game days fans can ride to the 153rd Street Station on the Hudson Line. They can walk to the stadium in 10 minutes, and avoid the inconvenience of parking and getting stuck in long traffic lines before and after the event.

Philadelphia sports fans can board Southeastern Pennsylvania Transportation Authority (SEPTA) special "Sports Express" trains to get to games. "You can yell and scream at other drivers while stuck in traffic or you can shout and holler at the arena and leave the driving to SEPTA," notes SEPTA marketing copy

More Concession Profits

Fan-friendly transportation improvements can yield dramatic benefits, and not only for the environment, advocates note. Thanks to an improved overall fan experience, concession spending and long-term ticket purchases are both likely to rise.

Another way sports organizations can foster greener travel is by helping fans optimize the route they

take to and from the stadium and by expediting their parking once they arrive. New start-ups, like Roadify, ParkNow, and Click and Park might become useful in that regard, experts say.

At New York's Barclays Center, which was built to incorporate a \$72 million transit hub, event goers can now get real-time information about their transportation options. Electronic boards, supplied by Brooklyn-based Roadify, tap into the data created by transit agencies to offer up-to-the-minute status reports on subways and the Long Island Railroad. According to Roadify CEO Scott Kolber, knowing when the next train is coming makes fans more likely to use mass transit.

Paul Wessel, executive director of the Green Parking Council, said that there will be ample opportunity to improve the getting-to-the-game experience, benefiting sports teams and fans alike. "We all start with what we know," Wessel noted. "For the Green Sports Alliance, the focus has appropriately been on the facilities themselves — waste streams, heating and air conditioning, lighting. Those are all high-impact at the stadiums. But lately the discussions have been about looking at the parking lots surrounding the stadiums and how to get people in and out of them."

At Barclays Center (where fans are warned that parking is limited, and public transit is the better option), Click and Park provides attendees with routing information based on the latest traffic flows to get them in and out of lots as quickly as possible. And it lets motorists buy parking in advance (carpoolers get discounts). The National Arena District in Columbus, Ohio uses Click and Park to help get fans to Blue Jackets hockey and Clippers baseball games.

The High Cost of Idling

Reducing pollution and waste from idling vehicles has become a major environmental priority. According to Argonne National Laboratory, for instance, idling long-haul trucks use more than 685,000 gallons of fuel annually — at a \$2 billion cost to the economy. And cutting back on idling dramatically reduces emissions of carbon dioxide, nitrogen oxides, carbon monoxide and particulate matter. Florida Citrus Sports, a nonprofit that works with Citrus Bowl Stadium in Orlando, reported that it used to have lines of cars trying to park 15 minutes after kickoff, but with Click and Park, all but late arrivals are in their seats 30 minutes before the

game starts. As a side benefit, concession stand sales rose 34%. Click and Park has worked with three Olympics events in the U.S. (Atlanta and Salt Lake City) and Canada (Vancouver), NFL Super Bowls since 2005, and the NCAA.

ParkNow, a service largely owned by BMW, also focuses on reducing the “circling” that accounts for as much as 30% of city driving and increased emissions. Using a web page or cell phone application, sports fans can locate parking near a venue, compare prices and make an online reservation.

Teams can even save money on the parking facilities themselves. The Mariners saved 50% on their garage energy bills by installing motion sensor controls — after all, there is no need to light the building when nobody is in it. That’s one way to lower the carbon footprint of overall transportation impacts, but the best option would be to convince

fans to leave their cars at home, observers say. That’s hard to do, but a number of teams are working on it.

And SolarCity’s Peter Rive said he sees “a massive opportunity” for sports teams “to cover their parking lots with solar, provide shade and cover while also generating energy. They have the roof space and parking lots that are perfect with solar.” In the parking lot at the U.S. Airways Arenas in Phoenix, and at Lincoln Financial Field in Philadelphia, solar panels double as shade for fans’ cars. The photovoltaic panels can be paired with electric vehicle parking to accommodate green-minded fans.

Transportation is still the big hurdle to overcome as sports teams and leagues work to maximize sustainability. The problem is far from solved, but innovative solutions are beginning to nurture less-impactful ways to put fans in seats.



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