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Play Sustainaball

An Environmental Footprint for an MLB Team Season

Executive Summary

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In recent years, there has been increased attention on the environmental impacts of professional sports organizations. There are significant opportunities for Major League Baseball (MLB) and its teams to both reduce their own environmental footprint, and that of their fans, through sustainability initiatives. Despite typical stadiums using upwards of ten million gallons of water per year and having the same energy needs as a small city, no MLB team has completed a public-facing quantification of their total environmental footprint. This industry-wide gap in measurement was recognized by our clients, Gary Goldring, part-owner of the Tampa Bay Rays, and Players for the Planet, a nonprofit using the influence of professional athletes to inspire environmentally-friendly change in fans. Life-cycle assessments (LCA) and carbon accounting are leading methodologies used to quantify environmental impacts. Prior research has analyzed individual components of a team's operations such as fan and team travel, stadium baseload operations, or waste footprints; however, a public-facing season-long study of an MLB team's environmental impacts has not yet been undertaken. Providing a baseline assessment of environmental impacts is a critical foundation needed before recommendations can be identified, implemented, and evaluated for their effectiveness in impact reduction.

Our Approach

This project calculated the carbon footprint and water consumption of the Tampa Bay Rays for the 2019 regular season. We quantified Scope 1, 2, and 3 GHG emissions to identify hotspots within the Rays' operations, supply chains, and transportation. We also analyzed water usage at Tropicana Field (the Rays' stadium) to provide insights on the teams' water consumption. Lastly, we created a repository of best practices as a resource for stadium managers that includes strategies to reduce GHGs and water use, coupled with scenario analyses estimating potential reductions for select strategies.

Our Impact

Our project will enable executives and stadium managers for the Tampa Bay Rays and other MLB teams to better understand, calculate, and reduce large sources of GHG emissions and water usage within their influence. In particular, the identification of key emissions drivers allows for more targeted, and thus more effective, recommendations. The incorporation of fan transportation emissions within a broader MLB team's carbon footprint distinguishes this project from other industry efforts, as do our novel public-facing carbon accounting methodologies. Results of this study will support the Rays' goals to enhance the sustainability of their current stadium as well as prepare for the construction of their new stadium. Further, as public interest in sustainability grows, MLB teams and Players for the Planet athlete ambassadors can better tailor their messaging, and maximize impact of fan engagement efforts, by focusing on the hotspot areas identified and fan behaviors highlighted in our study, as these represent the greatest opportunities for environmental improvement.

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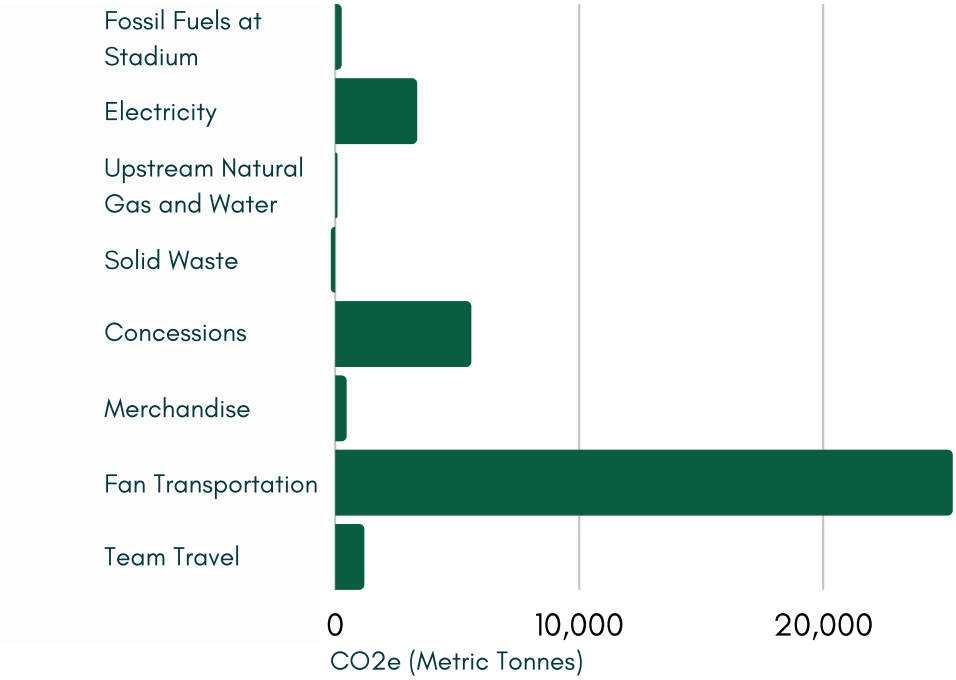
Key Findings

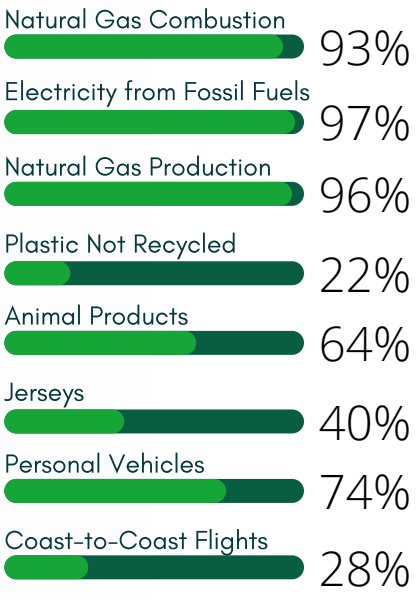
Carbon Footprint Results

The total carbon footprint for one full Tampa Bay Rays season is largely attributed to fan transportation (70.5%), production of food for concessions (15.4%), and electricity (9.2%).



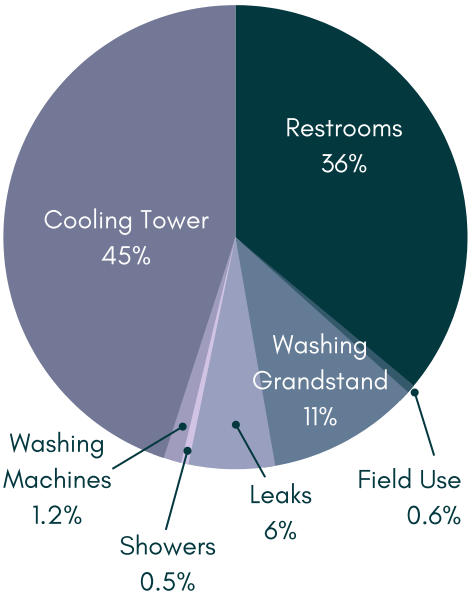
Emissions Drivers

Within each of the eight emissions categories evaluated, one activity typically generated a majority of emissions:



Onsite Water Results

The estimated water usage for one full Tampa Bay Rays season is largely attributed to the cooling tower (44.9%), followed by restrooms (36.0%), and washing the grandstand (10.6%).



Recommendations

Primary opportunities to reduce teams' environmental impact:

1. Encourage fans to take EVs, public transit, bike, or walk to games and provide necessary infrastructure such as EV charging stations, park-and-ride shuttles and bike racks. *If all fans who drove in cars took EVs to Rays' games in 2019, the total carbon footprint would have been reduced by 36%.*

2. At concessions stands, offer more vegetarian options and differentiate these options on the menu by listing them first or declaring them an official food of the team. *Adoption of these strategies could reduce the Rays' total carbon footprint by 4%.*

3. Upgrade, retrofit, and/or replace equipment to maximize energy and water efficiency and reduce energy and water consumption.

Additional considerations for future sustainability initiatives:

- **Sub-metering and utilities audits:** understanding which equipment and activities use the most water, the most electricity, or generate the most waste, will help MLB teams better target environmental solutions.
- **Conduct life cycle analyses:** our research identified several trends in the sports industry that claim to be "greener," such as switching to aluminum cups, but actually have a higher carbon footprint than existing practices. Conducting or consulting LCAs ensures environmental solutions are scientifically proven to be better for the environment.