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# Green Operations in Sports Facilities: A Review of Technological Implementation

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#### 1. Round 1

#### 1.1 Reviewer 1

## Reviewer:

The environmental footprint of sports facilities is well established, but the statement "sports events often serve as microcosms of broader societal behaviors" needs further elaboration. How exactly do sports facilities mirror societal behaviors in terms of environmental impact? Providing specific examples would strengthen the argument.

The phrase "smart energy management systems that monitor and optimize energy usage" is critical, but it would be beneficial to explain how these systems work in practice. Consider adding more technical detail or a real-world example to provide clarity.

The review mentions water recycling systems but does not specify the types of sports facilities that have successfully implemented these systems. Adding case studies or examples of specific facilities that have adopted water conservation technologies would make this section more robust.

The sentence "Advanced waste management technologies, such as automated sorting systems and waste-to-energy solutions, can help facilities reduce their environmental impact" should be followed by data showing the efficacy of these technologies. How much waste reduction has been observed in facilities that use these solutions?

Author revised the manuscript and uploaded the updated document.

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## 1.2 Reviewer 2

#### Reviewer:

The statement "barriers such as the high cost of installation, technological limitations in certain regions, and operational resistance present challenges to widespread adoption" is vague. It would be helpful to provide quantitative data or case studies that highlight these barriers, especially in different geographical contexts.

The article mentions several databases, but it would improve transparency if the authors clarified the exact search terms and inclusion/exclusion criteria used in the systematic review. This could be presented in a table for clarity.

While the focus on large-scale facilities is clear, it may be useful to explain why small-scale sports centers were excluded. Are there significant differences in technology adoption between these types of venues that merit this exclusion?

The discussion on solar panels and renewable energy technologies lacks quantitative data. Consider adding statistics or studies that demonstrate the potential savings or efficiency gains from solar panel installations in specific sports facilities.

The authors chose a narrative review method but should justify why a meta-analysis was not conducted. Given the abundance of quantitative data available on the environmental impact of green technologies, a more rigorous statistical analysis could add value to the article.

In discussing the financial challenges to green technology adoption, the phrase "high upfront costs" is repeated several times. It would be helpful to provide actual figures or examples of capital costs for specific technologies, as well as return-on-investment periods.

The section on the need for staff education is insightful, but it would be improved by offering specific suggestions for how sports facilities can integrate training into their operations. Are there existing training programs or certifications available?

The authors mention that adopting green technologies aligns with CSR initiatives but should explore this further. How do sports organizations measure their CSR success in relation to green operations? Incorporating examples of CSR metrics would be beneficial.

Author revised the manuscript and uploaded the updated document.

## 2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.