

LOOKING AHEAD: The Best Is Yet to Come

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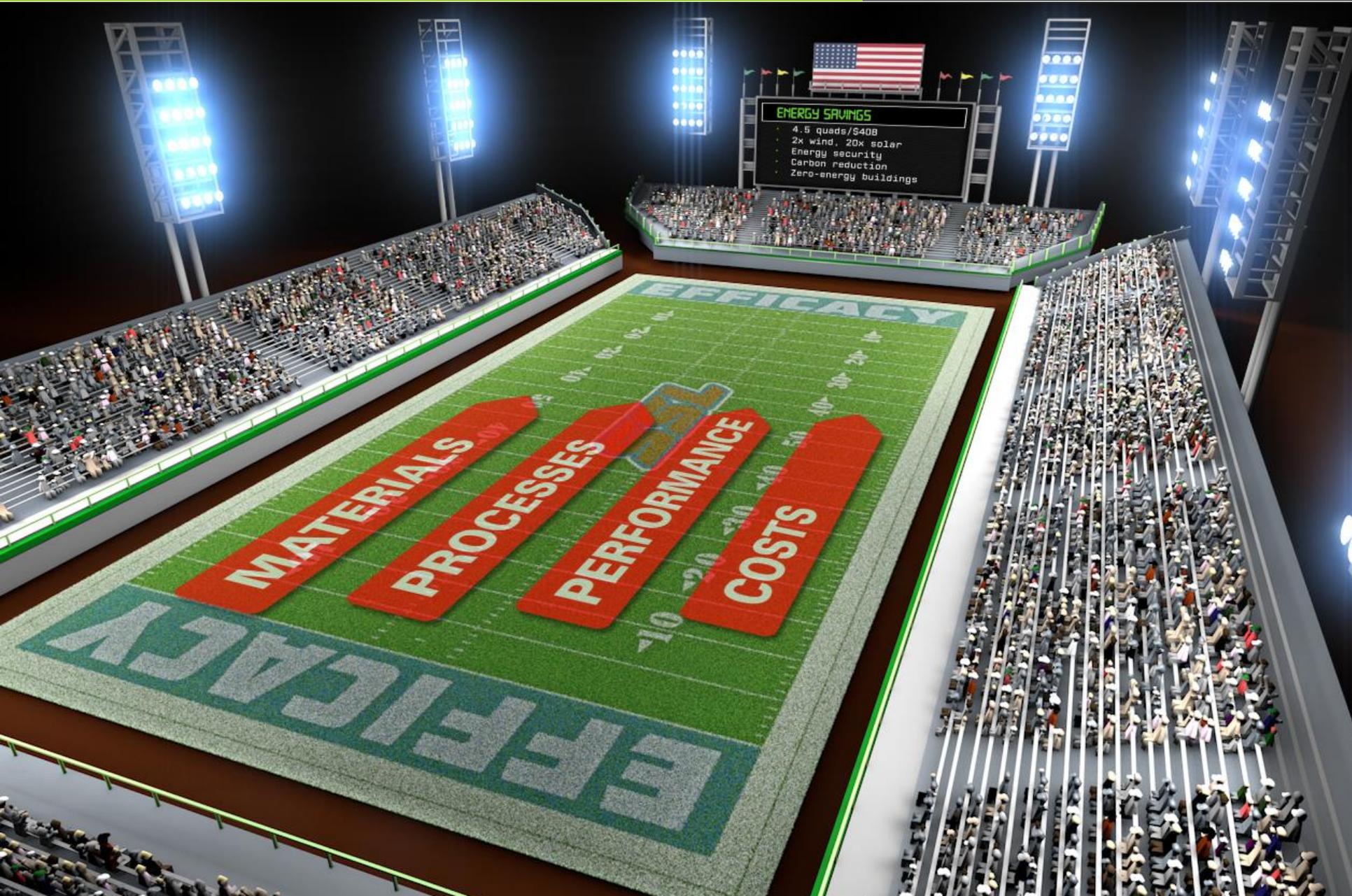
LED Efficacy: What America Stands to Gain



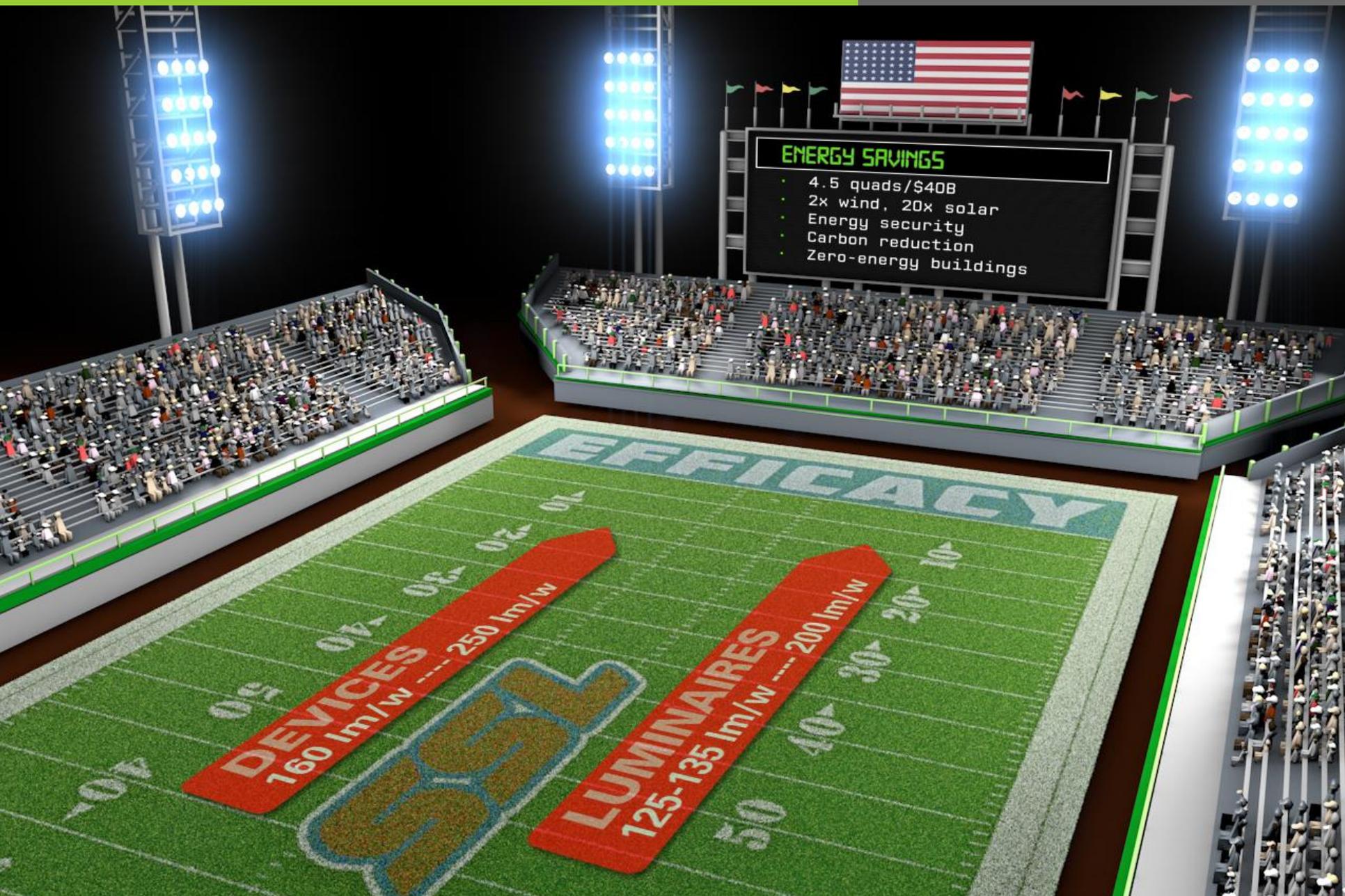
Beyond the Halfway Mark



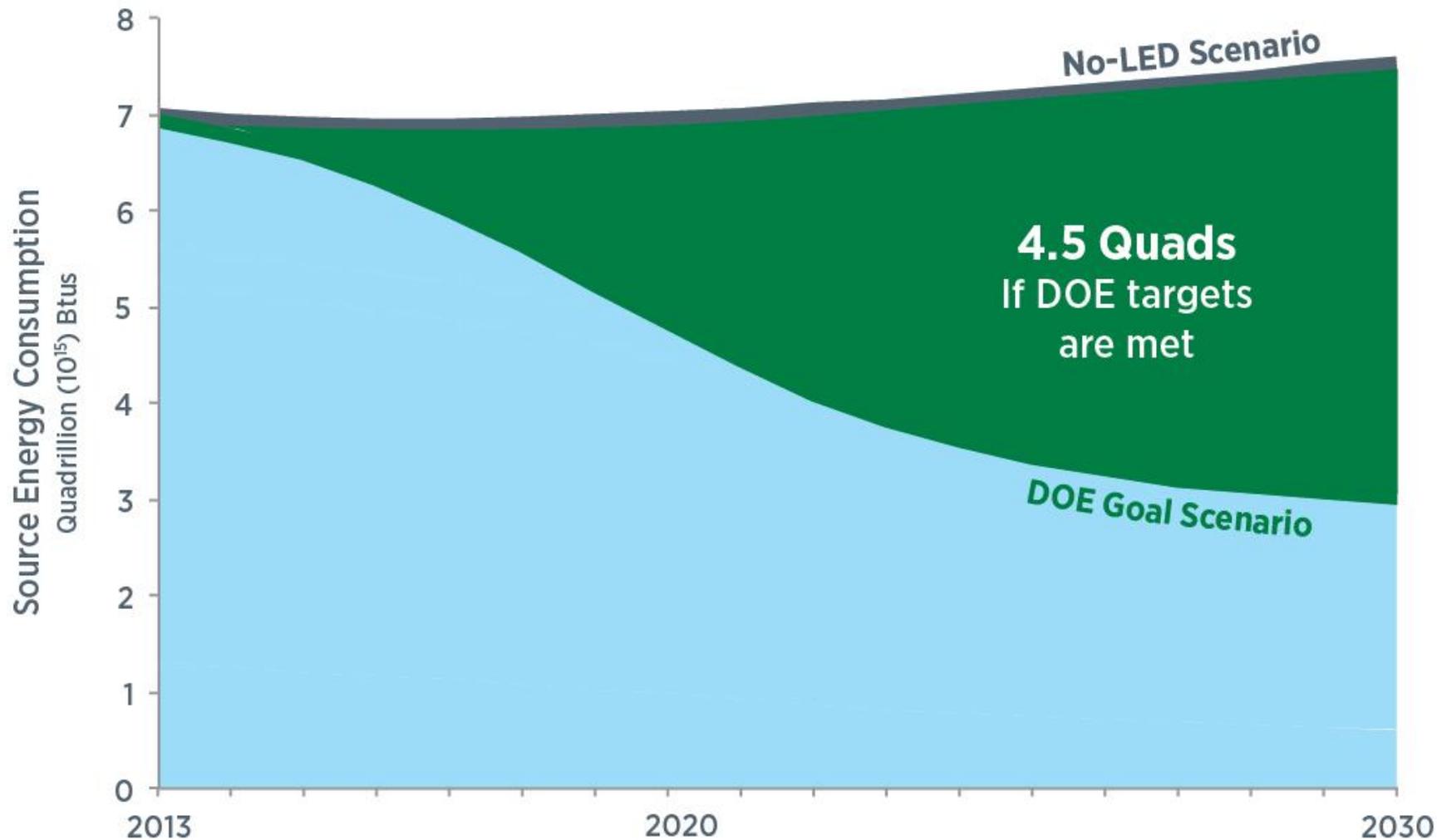
Beyond the Halfway Mark



Beyond the Halfway Mark



1. Enormous Energy Savings



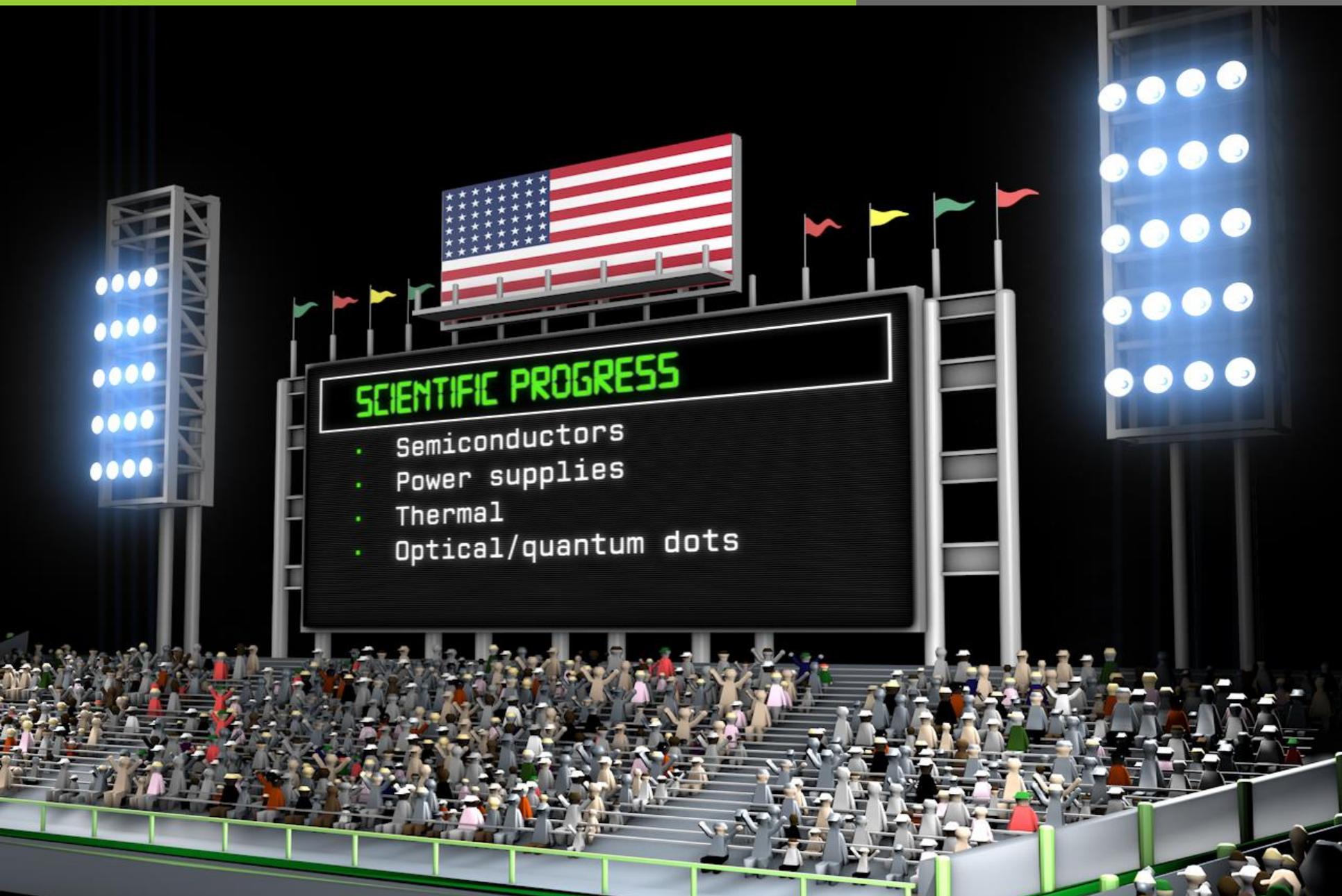
1. Enormous Energy Savings



ENERGY SAVINGS

- 4.5 quads/\$40B
- 2x wind, 20x solar
- Energy security
- Carbon reduction
- Zero-energy buildings

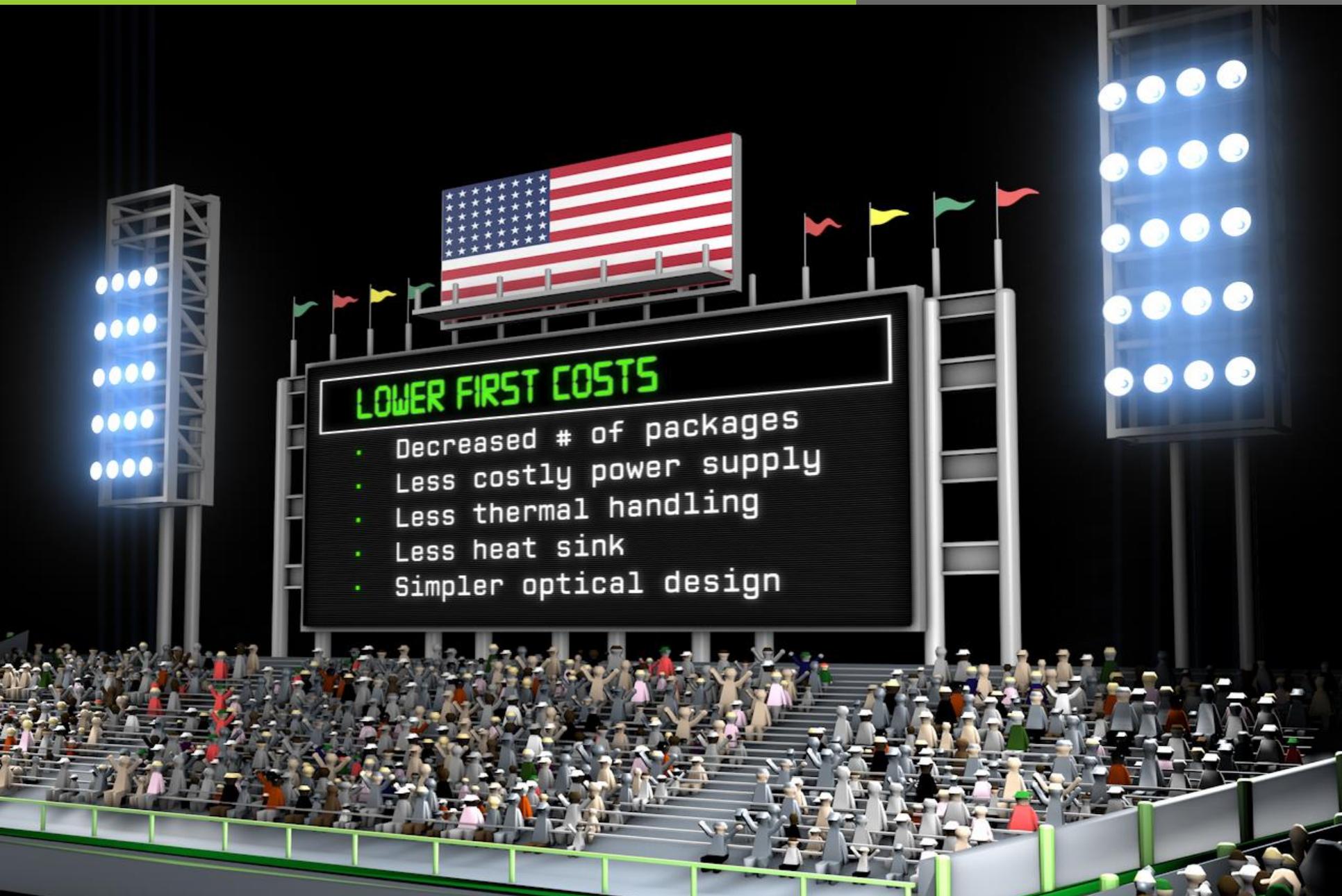
2. Advances in Science and Technology



3. Better Products and Improved Lighting Quality



4. Lower First Costs for LED Lighting



5. Boost Domestic Manufacturing



U.S. MANUFACTURING

- Higher flux levels
- Lower cost per lumen
- Benefit: U.S. manufacturers

Watching the Game Clock

Success requires:

- Gains in LED efficacy. . .
- Translated into high-quality, cost-competitive products. . .
- With broad market acceptance. . .
- Including upgrading by early adopters

R&D Challenges Ahead

- Improve phosphor conversion
- Replace phosphor conversion
- Mitigate droop
- Address the green gap
- Improve encapsulants
- Develop novel luminaires
- Enable connected lighting

What America Stands to Gain

1. Enormous energy savings
2. Scientific progress
3. Better LED products
4. Lower first-cost products
5. Stronger U.S. manufacturing