TECHNICAL SERVICES REQUEST FOR SUNFLOWER SEATING

Studies, research, design and prototypes done to realize the type of integrated photovoltaic modules Sunflower Seatings ultimate solar power generating seat unit will include and may not be limited to:

The idea that lower amp photo voltaic cells or materials may be safer for use in a public setting, while benefiting from an increase in voltage which may be more efficient for transmission.

How would these materials be different than Maxeon cells for instance?

How may we recycle our technology?

How will we protect our components in the seat, what will they be covered with?

How will shading issues impact our power collection,data and what can we do to mitigate shading issues, will dc-dc optimizers on each seat be effective?

However Module-level Power Electronics (MLPE) may have a large role to play.
So a careful investigation of microinverters and DC power optimization is key. Perhaps a optimizer micro inverter DC-AC in each unit may be the solution. While possibly costly to develop, costs will be recovered and drop with many thousands of switches being installed.
Can some seats be empty and work will others are occupied by spectators?

Adding photovotaics to stadium seating will require extensive wiring of stadiums which is a major cost component of any such system and needs to be designed and costs understood.
Working together with existing architectural firms who specialize in stadium design and construction would be most advantageous and desirable.

The goal of designing, fabricating, installing and testing 2000 sunflower seats is in itself a significant challenge which will need careful planning, design, software and hardware selection. Selecting a location for the project representative of multiple weather conditions, life cycle design analysis and stadium specific conditions are all formidable variables that need to be tracked and determined for commercial viability.

Can we achieve 75W per unit given the area of the seats we are using? Can we tilt the seat back toward the sky at a better angle, or use optics to direct sunlight into the photovoltaics more effectively?

These are all areas which need to be examined in greater detail.