From courses to golf clubs, science plays a key role in evolving the game of golf through technology advancements. Specifically, Dow solutions are working behind-the-scenes to improve the golf experience for players and spectators alike.

**Science**

The Game of Golf
Global interest in golf is on the rise, with recent data showing that:

- **Total global revenue from golf equipment/apparel sales** from the 2 top manufacturers increased by more than $505K from 2018 to 2019.1
- **25% of junior golfers in 2017** were minorities as compared to 6% in 1995.2
- **Golf is a global sport**, with nearly 39,000+ facilities in 209 of the world’s 245 countries.2
- **The global golf tourism market** is expected to increase by $5.36 billion from 2020 to 2024.3

**Did you know?**

- **In 2019**, there was a 20% increase in Google searches involving “golf balls” and “golf clubs”, when compared with the previous 5 years.5
- **The aerodynamic design of modern golf balls** is optimized by 300-500 dimples on each ball.6
- **The earliest known form of golf** was played in Scotland in the 1400s. The first round of women’s golf was played 400 years later in 1811.7
- **Two-piece balls** are the norm for everyday use, but multi-layer options are trusted by pros for a softer club-to-ball connection.

**Events**

Golf tournaments provide an incredible opportunity to advance sustainable event planning, from zero-waste to community impact. At the 2019 Dow Great Lakes Bay Invitational (GLBI), 68% of waste generated was recycled or reused, the regional economy received an estimated stimulus of $127.7 million and 59 community organizations benefited directly from Dow GLBI support.5

**Bunkers**

Sand bunkers are an essential element of the game, but poor bunker drainage systems can cause washout and affect playability after heavy rainfall. Polyurethane technologies from Dow used in drainage systems circumvent undue labor costs through erosion protection. Polymers sprayed on top of gravel bind it together, maintaining bunker porosity and functionality.

**Tees**

At the 2019 Dow GLBI Tournament, Dow teamed up with KW Plastics to recycle all of the event mesh and scrim into plastic pellets that were then molded into over 20,000 golf tees.

**Balls**

Next-gen golf balls, like ERC Soft and Supersoft from Callaway, are infused with Dow’s PARALOID™ Impact Modifiers in the hybrid cover to optimize distance, spin and control. Combined with SURLYN™ Ionomers, the ball’s multi-material polymer composition promotes key player benefits and a soft, but strong feel.

**Shoes**

Today’s clubs are built from steel, titanium and graphite, with elastomer handle-grips. Those soft-touch grips, formulated with Dow’s patented polymer technology, help deliver a controlled, non-slip performance in dry and wet conditions.

**Golf carts**

Compared with traditional air-filled tires, tire inserts built from Dow polyurethane elastomers reduce vehicle weight while improving shock absorption and durability.

**Apparel**

Fashion has been an intrinsic part of the golf world for centuries. With ECOFAST™ Pure, Dow’s innovation for more sustainable cotton dyeing, golf apparel brands can achieve the same great designs with less water and a lower carbon footprint.

**Apparel**

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