



Sustainable.Golf

SCORECARD + CARBON REPORT

2021

Herronfield Golf Club

OnCourse®

As a global sport set in nature, with deep community roots and millions of players and spectators ... golf is stepping forward as a leader for sustainability and climate action.



Herronfield Golf Club was GEO Certified in 2018 and renewed in 2021. The certification is the most credible and widely-respected mark of sustainability in golf worldwide; assured by the not-for-profit GEO Foundation for Sustainable Golf, in accordance with the ISEAL Alliance Codes of Credibility.

Find out more at www.sustainable.golf or by following @sustainablegolf on social media.



ABOUT YOUR SCORECARD

Sustainability is a continual journey and along the way, tracking key indicators within a practical framework can help prioritise and plan areas for improvement. Measuring baselines and progress can also identify areas to celebrate and share.

The Sustainable Golf Scorecard + Carbon Report is prepared from the key data you record in OnCourse each year, to help you spot trends and represent your progress across key elements of environmental performance and social value.

During what the United Nations has called the Decade of Action, we have a great responsibility to evaluate our impacts on the planet, take actions to improve, and track our progress.



The Sustainable Golf Scorecard provides you with three things:

1

Annual Data Insights
with metrics to track
performance and trends

2

**Carbon Report and
recommendations to
improve your footprint**

3

Separate Infographic Kit
to share your successes
internally and externally



USING YOUR SCORECARD

The Annual Data Insights comprise key Sustainable Golf Metrics, all based on the information you provided in OnCourse. A review was then conducted, taking into account your climate, type and size of course, etc. in order to provide observations on possible areas for improvement, and areas that seem on track or worthy of communication. However, you will know your specific circumstances best, so you may want to add to or adjust the observations.

The Carbon Report calculates your carbon emissions and sequestration, again using the data you provided in OnCourse, combined with internationally endorsed algorithms with regional customisations for items like the national energy grid. You will find practical recommendations on reducing emissions and increasing sequestration to help improve your footprint year-on-year.

As you review your Scorecard, it is useful to think about:



Areas for improvement – a question mark indicates an area that seems to have room to do better. Consider what practices and projects could help achieve that?

- Revisit the relevant section of **Best Practices** in OnCourse to find additional ideas and actions.
- Browse ideas from other golf clubs around the world in the **Sustainable Golf Highlights Hub**.
- Use the guidance and tools in the OnCourse **Communications** section to help engage staff and golfers where needed.
- Consider collaborating with a local advisor on new projects, or seeking government support for larger projects.



Opportunities to promote – a check mark indicates an area that seems to be on track. Often room to still do better, but consider communicating the success within your club and externally.

- Use the infographics or statistics in articles or a press release to share your social and environmental responsibility and value.
- Share one or more of your good projects or outcomes as a 'Sustainable Golf Highlight' on the **sustainable.golf** website.
- Promote your Sustainable Golf Highlights on social media and in your newsletter, or print and post on notice boards.
- Present your Scorecard or the graphics at meetings or events with committees, golfers and community.



ANNUAL DATA INSIGHTS



FOSTERING NATURE

Golf is perhaps the sport with the closest connection with landscapes, ecosystems and biodiversity. Over 39,000 courses globally span an area roughly the size of Belgium, and around 50% of that is natural or semi-natural habitat. Golf also appears in often important ways – acting as green oases in towns and cities; protecting sensitive coastal strips; and providing buffers adjacent to wetlands, in watersheds and near nature reserves.

No matter where a golf landscape is set, there are important considerations in the role of an environmentally responsible land steward.



Habitat & Biodiversity

It is important to understand the current value of the golf landscape to nature and consider the potential of the site over time. There are opportunities to expand or improve habitats and foster biodiversity, including notable species

Turfgrass Management

Responsible turf management is key to providing great playing conditions with minimal inputs. Focusing on plant health and durability specifically tailored to the local climate and soils, giving the right amount of irrigation and nutrition for long-term health.

Pollution Prevention

It is essential to consider the practices undertaken to safeguard the quality of the environment, avoid potentially significant risks, and meet all legal requirements. Staff should also be trained in the storage and handling of potentially hazardous materials.



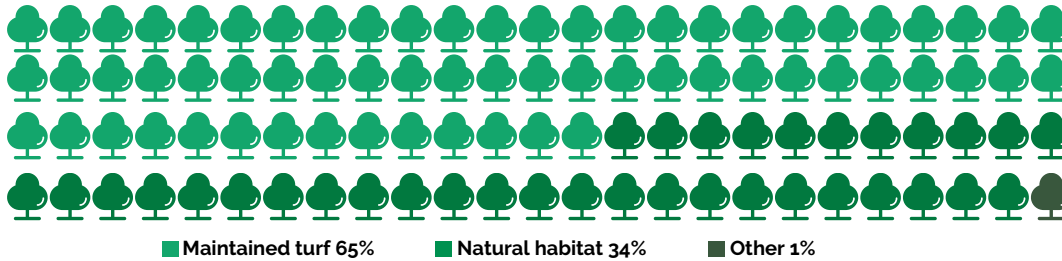
NATURE AND TURFGRASS MANAGEMENT METRICS

		2019	2020	2021	Improve	On track
Habitat	1 Area of natural habitat	19.2 ha	19.2 ha	19.2 ha		
	2 Percentage of total golf facility areas that is habitat	33.7%	33.7%	33.7%		
	3 Area of newly created habitat in last year	0 ha	0.05 ha	0.06 ha		✓
Biodiversity	4 Number of notable* species identified	5	5	11		✓
Turfgrass Management	5 Percentage of nutrients from organic sources	0%	0%	0%	?	
	6 Total area of maintained turf	37.1 ha	37.1 ha	37.1 ha		
	7 Percentage of maintained turf of overall area	65.1%	65.1%	65.1%	?	
	8 Number of pesticide applications	6	6	3		
	9 Active ingredient volume, pesticides	n.a	9.37kg	4.6kg		
	10 Total weight of nutrients applied	361kg	341kg	905kg		
	Total weight of nitrogen	167kg	185kg	362kg		
	Total weight of potassium	61kg	78kg	320kg		
	Total weight of phosphorus	133kg	78kg	223kg		
	11 Weight of nutrients relative to turf area	9.7kg/ha/yr	9.2kg/ha/yr	24.4kg/ha/yr		

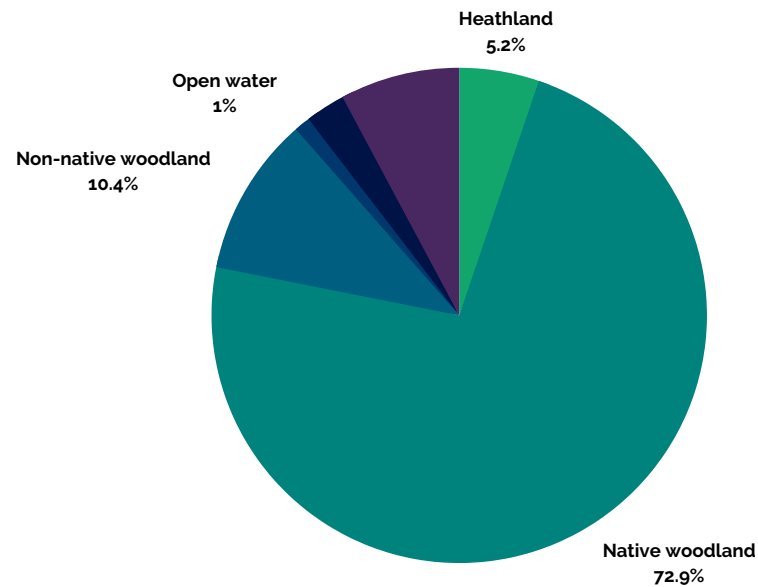
*Notable species include rare, protected or important to the area



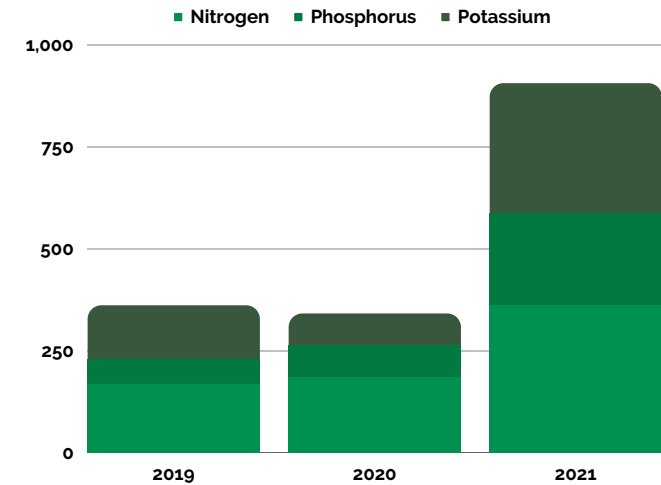
Total Land Area Breakdown (%)



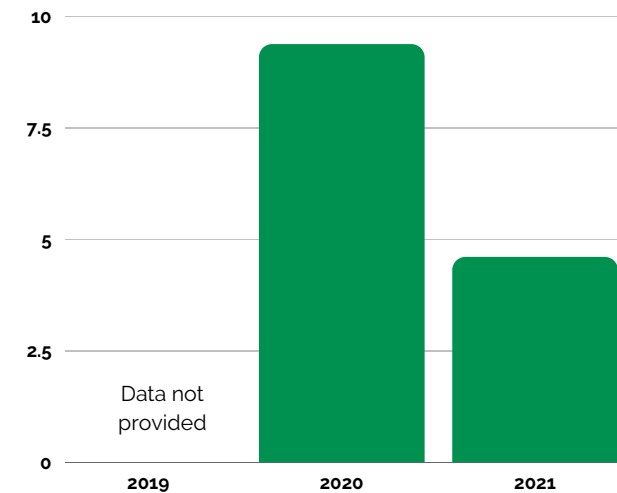
Breakdown of Natural Habitat (%)

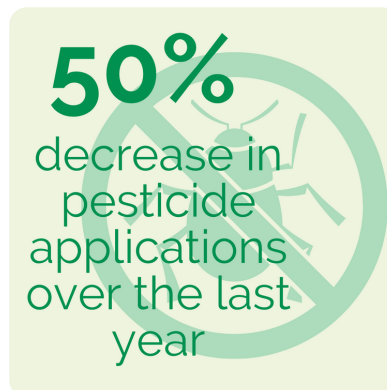
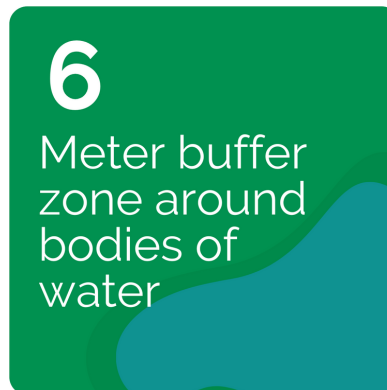


Weight of Nutrients Applied (Kg)



Weight of Active Ingredient Applied (Kg)

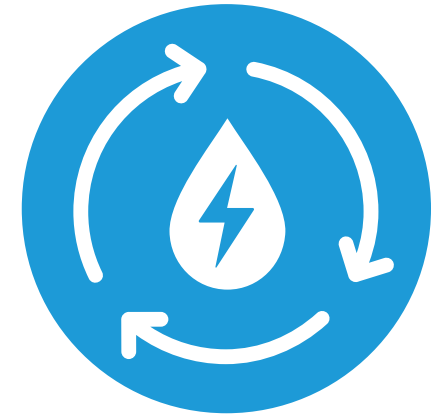






CONSERVING RESOURCES

Natural resources, materials and products contain a range of environmental and social impacts. The aim is to minimise or avoid the consumption of non-renewable resources – particularly fossil fuel energy, potable water and single-use materials. With water availability becoming more pressured in many locations; and water, energy and raw materials supply becoming ever more expensive, adaptation and innovation are important for people and the planet - and also good business sense.



Water

Water conservation across course, grounds and buildings is essential. Key supporting principles include using turfgrass varieties most suitable to local growing conditions and implementing solutions for responsible water sourcing and efficiency. Communication with golfers can also build appreciation of more natural seasonable course tones and textures.

Energy

Reducing energy consumption is a continual aim for every business. From implementing small-scale changes such as modern, efficient lighting and heating and practices to minimising energy and fuel use, to investments in energy-efficient appliances, machinery and vehicles, and exploration of renewable energy on-site.

Materials

Well considered consumption and waste management is important for sustainability. Attention should be directed at recycling and reusing materials, ideally moving toward zero-waste to landfill. Steps can also be taken to reduce unnecessary purchasing and packaging, and buying from with local producers and businesses wherever possible.

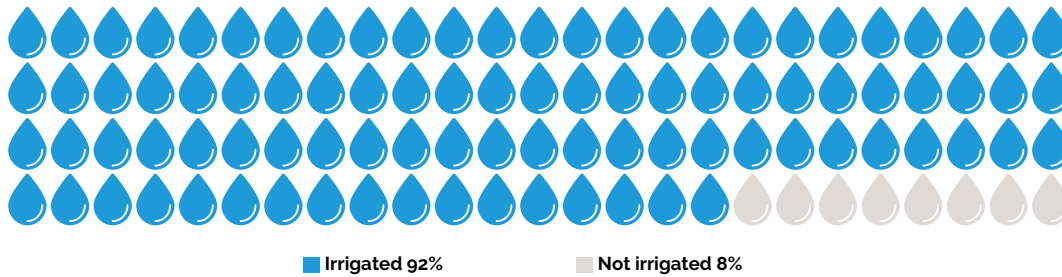


RESOURCE CONSERVATION & WASTE MANAGEMENT METRICS

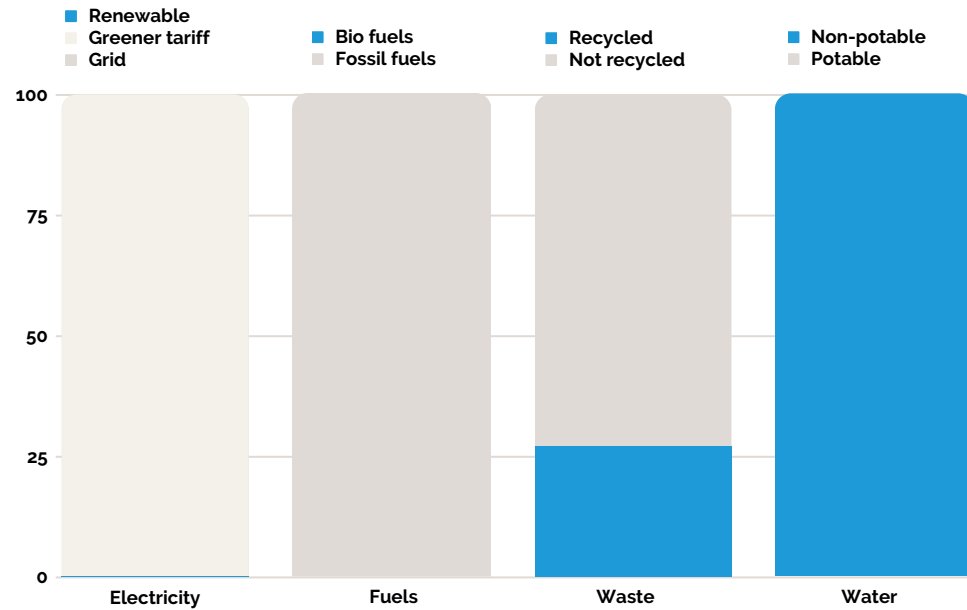
		2019	2020	2021	Improve	On track
Water	12 Total facility water consumption	32,219 m3	40,348 m3	12,993 m3		
	13 Irrigation from recycled/non-potable sources	100%	100%	100%		✓
	14 Percentage of turf that is irrigated	92%	92%	92%	?	
	15 Area of irrigated turfgrass	34.1 ha	34.1 ha	34.1 ha		
Energy	16 Total facility electricity consumption	124,806 kwh	108,894 kwh	103,844 kwh		
	17 Percentage of electricity purchased through greener tariff	0%	100%	100%		✓
	18 Percentage of electricity from onsite renewable sources	0%	0%	0.2%	?	✓
	19 Percentage of liquid fuels from biofuels	0%	0%	0%	?	
Waste	20 Percentage of waste recycled	25.8%	26.4%	27.2%	?	
Supply Chain	21 Percentage of suppliers who are local	58.3%	61.1%	62.5%		✓



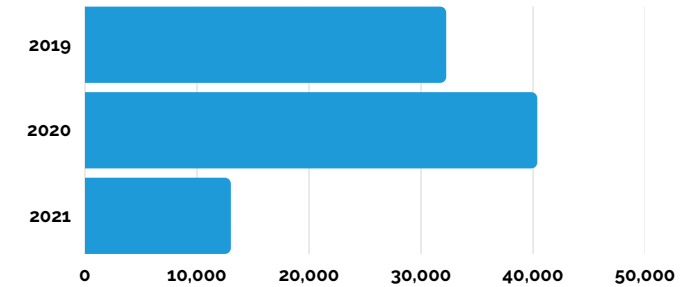
2021 Maintained Turf Irrigation



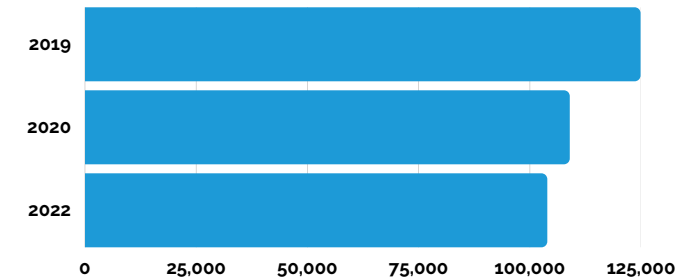
2021 Resources used (%)



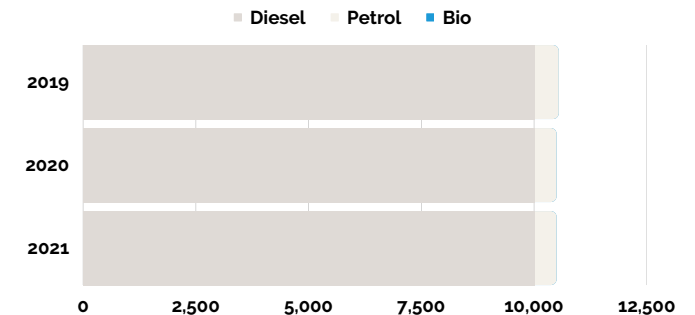
Water used (m3)



Electricity used (kwh)



Liquid Fuel used (litres)

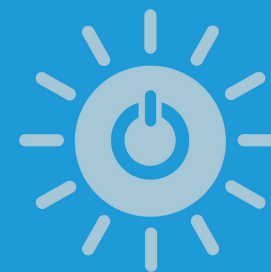
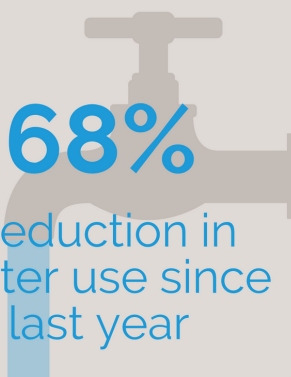


**0.2%**

of total
electricity
consumption
is from on site
renewables

**68%**

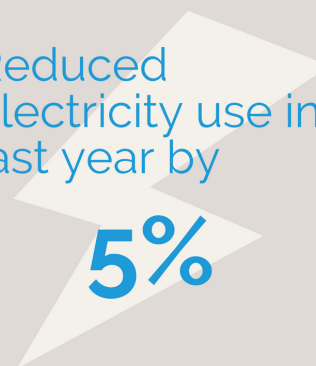
reduction in
water use since
last year



Fuel use
stable in the
past 3 years



Reduced
electricity use in
last year by

5%**63%**

of suppliers
are local

**27%**

of waste is
recycled





STRENGTHENING COMMUNITY

Sustainability is also about social responsibility, equity and overall positive value generated. Golf is extremely well placed to build on hundreds of years of community engagement and social value, at a time when there is a need and opportunity to provide more. Fair employment, diversity, equity and inclusion, and positive contributions to health and well-being can all be wrapped up in access to the sport and spaces; including local people, families, schools, producers and suppliers.



Outreach

As community-based sports facilities, it's important to do as much as possible to make a wider positive impact in the local area. This includes exploring ways to make the property and facilities accessible to non-golfers; to work in partnership with local organisations; to promote volunteering; and to support charities.

Golfers & Employees

Golf courses serve the community by providing active recreation and skilled employment, to the benefit of people's physical and mental health, and their overall well-being. The golf facility should provide a welcoming, accessible and inclusive friendly environment as well as aim to introduce young people to important values and life skills.

Communications

Sustainability can be integrated into internal and external communications to raise awareness and to encourage other businesses and individuals to get involved. Visitors, members and staff should be engaged with sustainability initiatives, and the wider community made aware of the ambitions and success laid out by the club.

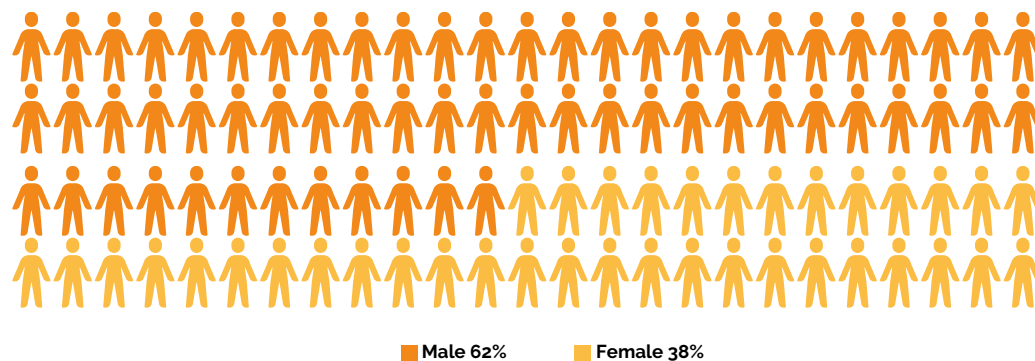


COMMUNITY ENGAGEMENT AND VALUE METRICS

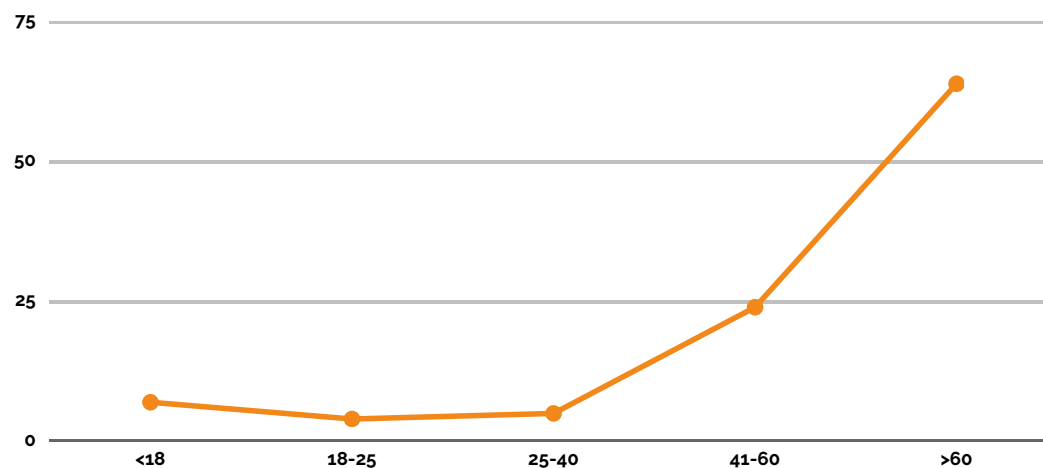
		2019	2020	2021	Improve	On track
Outreach	22 Number of charity events organised	4	4	0		
	23 Total money raised	£5,000	£0	£10,000		
	24 Estimated volunteering at the club	80,000 hours	80,000 hours	80,000 hours		✓
Golfers & employees	25 Number of individuals playing golf	2,177	2,480	2,611		
	26 Percentage of junior golfers (under 18)	5%	4%	7%		✓
	27 Percentage of female golfers	38%	38%	38%		✓
	28 Calories burned by walking golfers	41 million	30.8 million	38.1 million		✓
	29 Percentage of rounds walked	95%	95%	95%		✓
	30 Number of jobs provided	13	11	11		



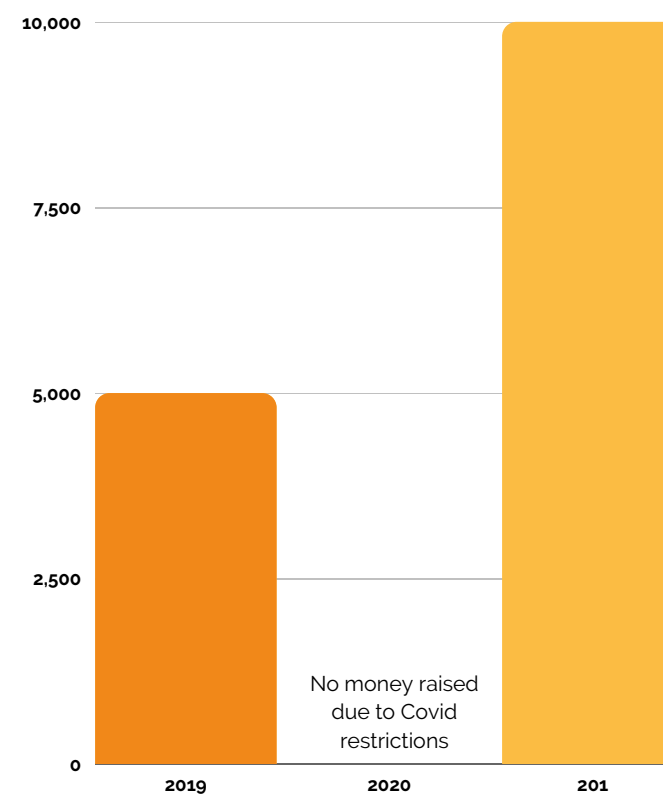
Golfer Demographic



Breakdown of golfer age (%)



Money raised for charity (£)



**80,000**

Hours of
volunteering at
the golf facility
this year

**95%**

golf rounds
were played
walking

**38%**

of
members
are
women

**194,864**

Hours spent in
nature

**7%**

of
members
are
juniors

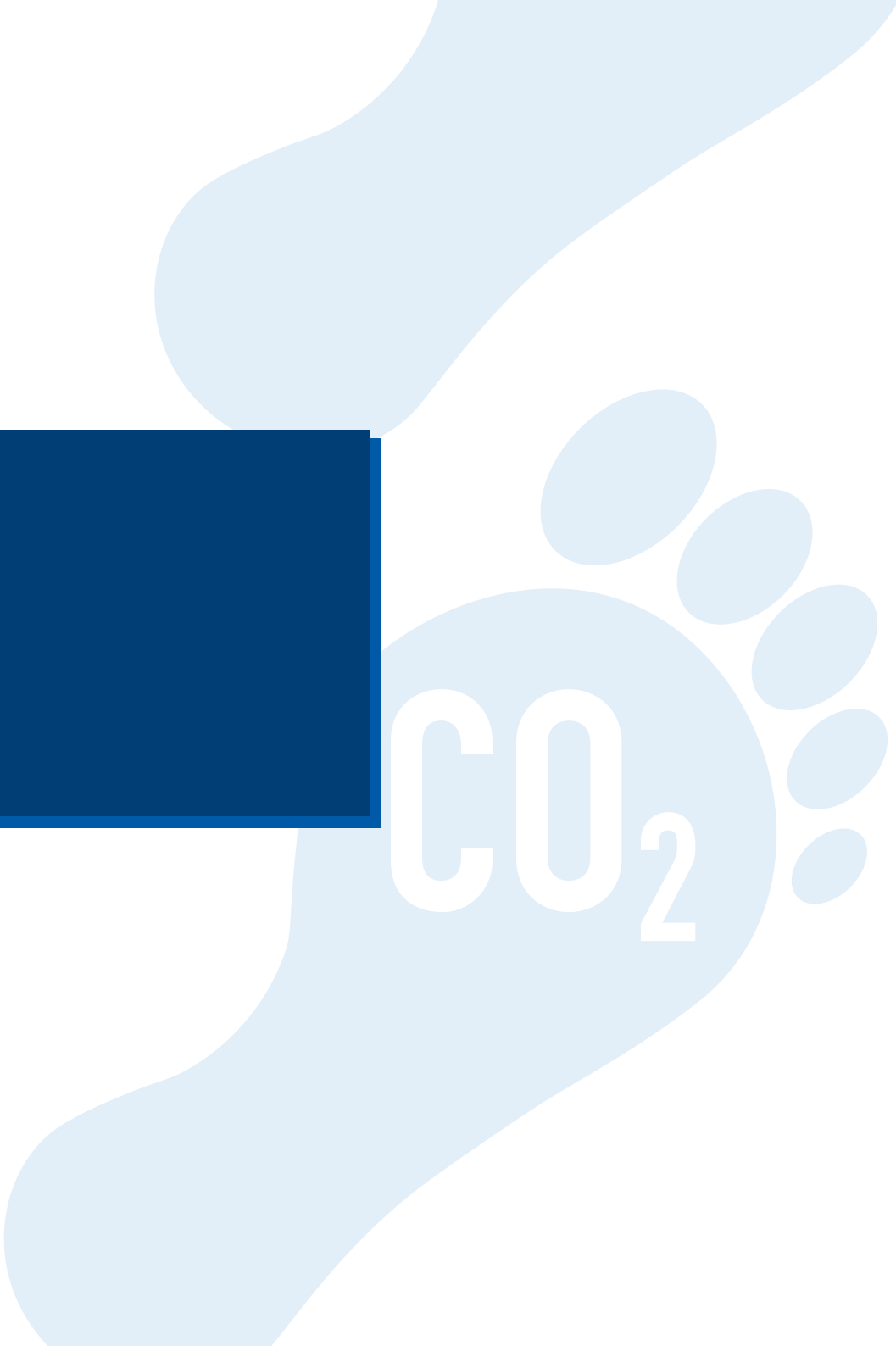
**38,149,694**

calories burned
by golfers
walking
on the
course



CARBON REPORT

CO₂





TAKING CLIMATE ACTION

As we are witnessing more of the effects of accelerating climate change, golf has a role and responsibility to do all it can to minimise direct and indirect greenhouse gas emissions; to help by sequestering carbon in its landscapes; and to inspire awareness and action amongst golfers close to home as well as the hundreds of millions of followers in countries around the world. It is helpful to quantify the impact on climate by calculating the core carbon footprint of golf operations, identifying areas for improvement.



Emissions reduction

Carbon emissions reduction covers a range of actions including efficient energy use and more renewable energy; using naturally treated and recycled sources of water; favouring products and materials with recycled content; avoiding single-use materials and waste to landfill; shorter supply chains; more sustainable travel; and more local, seasonal, plant-based menus.

Carbon sequestration

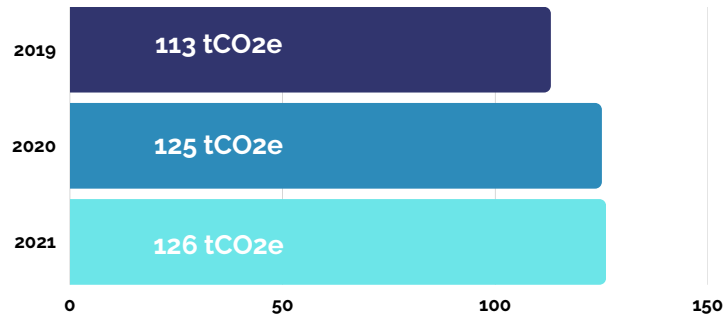
Carbon sequestration is the long-term storage of carbon and plants and soils can both be good opportunities. Within golf's landscapes there are many ways to increase carbon sequestration, including introducing or allowing more natural vegetation, native trees and shrubs; adding or protecting natural wetlands; and carefully managing turfgrass.

Carbon offsetting

Even with continual reduction strategies, it's often not possible to avoid carbon emissions altogether but there are ways to credibly mitigate remaining emissions. This is commonly described as carbon credit purchase, which means multiplying CO₂ emissions by a credible financial amount per tonne and putting that amount toward credible climate protection programs and projects.



Total Carbon Emissions (tCO₂e/year)



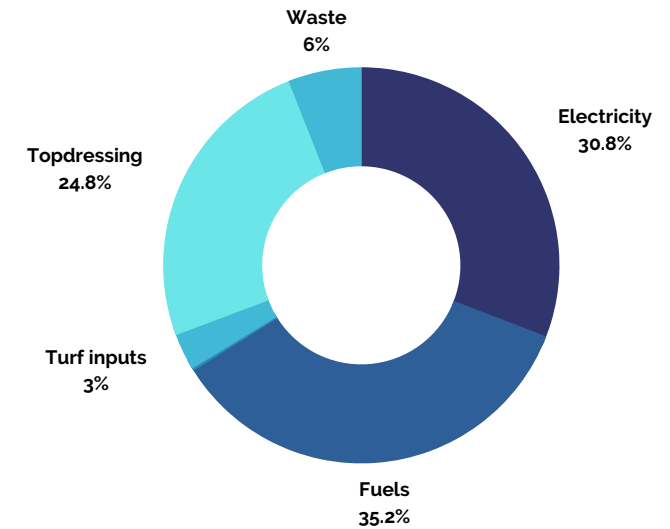
126
tCO₂ emitted
across the
facility this
year

Fuels
are the largest
part of your
carbon
footprint

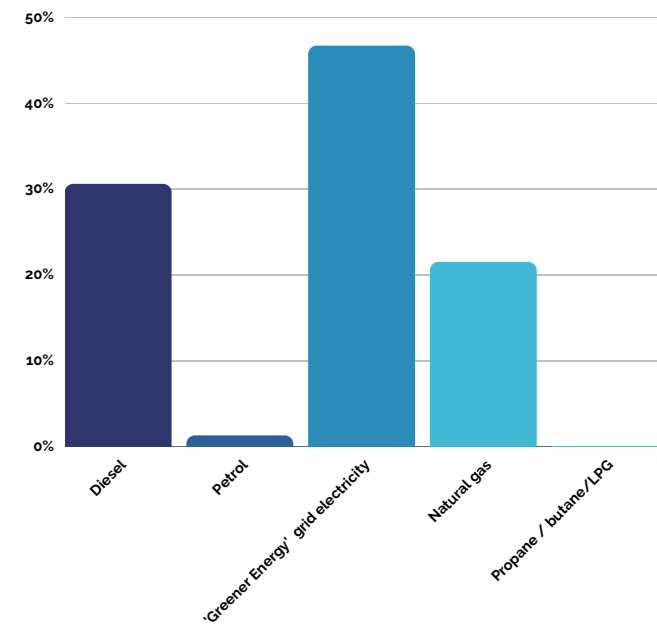
Your carbon
emissions are
about the
same as
38
households

It's good that you switched your provider because this helps secure the national power grid more access to renewables in the future. However, in nearly all cases, the energy isn't coming directly from renewables, it's still coming from your national grid. So, while 'greener energy' purchasing is the right thing to do, you will not see a reduction in your carbon emissions figures.

Carbon Emissions breakdown (%)

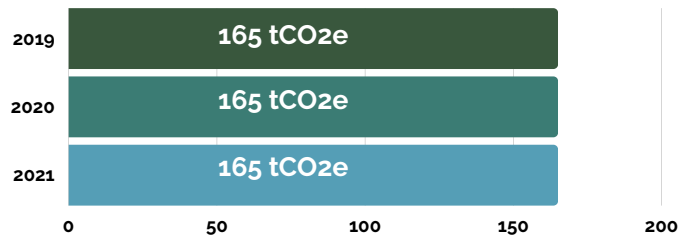


Emissions by Energy Type (%)

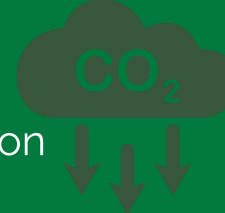




Estimated total Carbon Sequestration (tCO₂e/year)



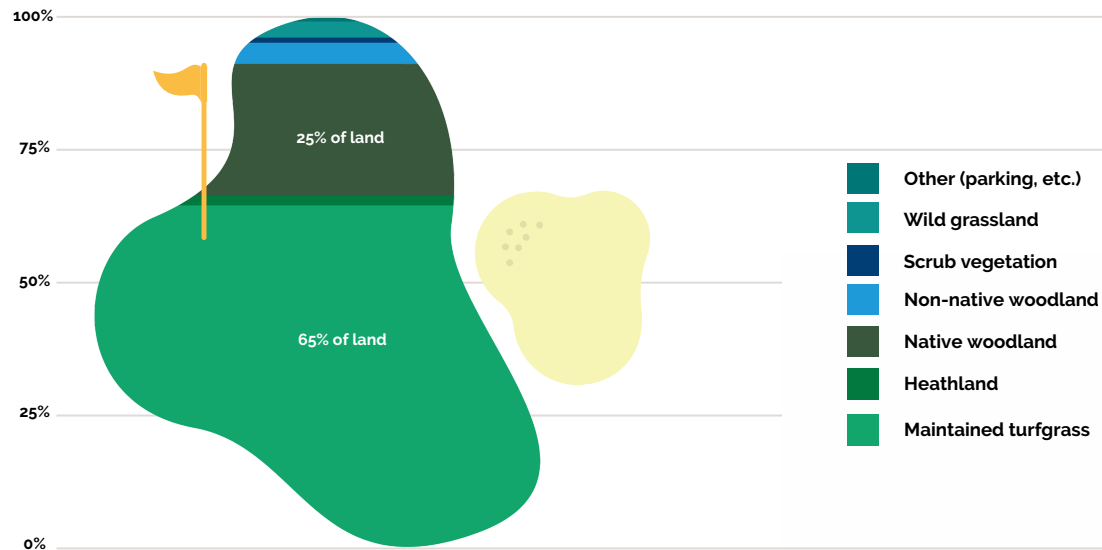
165
estimated
tonnes of carbon
sequestered



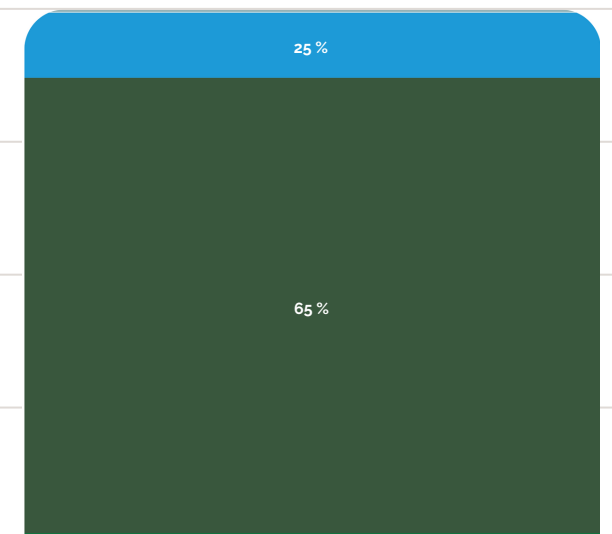
That is equivalent to **17**
hectares of European
forests in one year

Comparison of your land types and how successfully they sequester carbon

Total area by each land type



Percentage of your total carbon sequestration, by each land type





CARBON RECOMMENDATIONS

There are a number of ways to improve your carbon footprint and thus take positive actions on climate change. These may not all be within your immediate reach, but many are easily actionable and require little if any up-front investment. Remember that reducing emissions also means saving money either immediately, or with a short or medium return on investment.

Based on the breakdown of your carbon emissions, the two areas that would make the most difference at your golf facility are: **Fuels** and **Electricity**.

In the pages that follow, low or no cost improvements are shown in **blue** text, and there are also mentions of relevant areas in **OnCourse** shown in orange, to find further ideas and guidance.



EMISSIONS

Lower electricity usage

Buildings

- **Conduct an energy audit of the clubhouse and maintenance shed, either professionally or a self-assessment. Energy companies and local government often provide for free or, there is a guide in [OnCourse/Resources/Energy](#).**
- **Reduce lighting demand with the use of LEDs and improved control (such as photo and motion sensors in areas with good natural light and infrequently used rooms).**
- Consider upgrading the Building Energy Management System and/or adjusting on-off schedules and settings.
- **Consider installing electricity sub-meters to help identify where and when electricity is used.**
- **Consider the use of Half hourly (HH) electricity meters for comprehensive monitoring and targeting of electricity use.**
- Purchase energy efficient and A rated equipment where possible. Upgrading old inefficient appliances, like refrigeration can pay back quickly in saved costs.

Course

- Consider variable speed drive for any fans and pumps used (e.g. irrigation pumps)
- Old or inefficient irrigation requires requires longer run-times. Even upgrading sprinkler heads can help.
- **Consider alternatives if you use compressed air for washing golfer or maintenance equipment. This is a particularly inefficient use of electricity.**

Consider renewable energy

- **Switch your electricity provider to a guaranteed renewable source or certified offsetting if available. [OnCourse/Resources/Energy](#)**
- Explore on-site solar power (i.e. solar PV) to help reduce grid electricity demand or to power smaller units like your electric golf carts and your irrigation system.
- Explore the use of a biomass boiler to provide space heating to your buildings.



- Consider micro wind turbines to provide power for security and other small power uses and/or larger turbines to help offset grid electricity demand.
- Explore the benefits of ground source heat pumps for new build or existing underfloor heating/warm air heating systems.

Lower emissions from waste

- **Set up recycling throughout your operations - OnCourse/Materials**
- **Purchase reusable items and items with less packaging.**
- **Lower food waste which emit carbon from landfills.**
- Lower or remove single use and petroleum based plastics.
- Consider less frequent removal of waste from the site, and speak to your waste contractor for any recommendations they may have.

Modify course management practices

- **Reduce the amount of sand used for topdressing and/or explore other ways to source it. Quarried sand, transported a long distance, has high carbon emissions.**
- Your emissions figures include a calculation for manufacture/transport/maintenance of each of your vehicle. If you were able to reduce the number of vehicles, that would lower your emissions. (This is calculated separately from fuel usage emissions).
- **Try to reduce amounts of fertiliser and pesticide as there are high levels of energy and carbon in the manufacturing, transport and 'denitrification' of these materials. Adapt other practices to support healthy turf and look for organic options to add to your regime - OnCourse/Turfgrass**

Consider turf reduction

- Every space you can naturalise means lower fuel for mowing and energy for irrigation (and lower costs and new habitat as well!) **OnCourse/Turfgrass**



Lower fossil-fuel usage

Buildings

- Install underfloor, cavity wall and roof insulation. These can be very cost effective ways of reducing your heating or cooling demands and there are often government schemes available.
- Ensure windows are double/triple glazed or install secondary glazing as an alternative. Again, government schemes may be available.
- **Ensure all gaps around windows and doors are draught proofed.**
- **Consider optimising heating schedules and temperatures to reflect the usage patterns of your buildings.**
- Consider installation of Thermostatic Radiator Valves (TRVs) on hot water radiators.
- Reduce hot water usage with low flow and motion sensor/percussion taps.
- Create new shading and screening to naturally cool areas in and around buildings when it is warmer outside.

Course

- **Examine your mowing regime. Minimise double-cutting greens or excessive striping of fairways and approaches, less frequent mowing of the fairway approaches, etc.**
- Consider investing in hybrid mowers and electric golf carts (could even be fitted for solar power).
- Consider opportunities for addition/switching to biofuels or natural gas to replace diesel and petrol.



SEQUESTRATION

- **Naturalise! Rough, grassland, wildflower meadows and scrub vegetation typically store more carbon than maintained turf. This is especially true for older courses where sequestration from established turf is lower. Even small areas when applied across the course can add up to make a big difference in landscape improvement, cost saving, carbon storage and biodiversity.**
- Plant more native trees in a way that enhances the golfing landscape. You may even be eligible for a grant if you can plant a woodland on a corner of unused land.
- **Avoid over-management of your woodlands and wetlands as the gradual decay of vegetation helps the soil store carbon (not reflected in your carbon balance, but a good practice)**
- **Return clippings to turf to reduce emissions from their breakdown, contribute to plant nutrition and increase carbon storage in soil.**



OFFSETTING

Become a Climate Leader

- Depending on your situation, even the efforts above may not allow you to reach what is often called a 'net zero' carbon footprint, or 'climate positive'. In this case, you may want to offset your unavoidable climate impacts. This can be an excellent point of engagement and pride for staff and golfers.
- There is now an easy, credible way to do this. Using your carbon footprint, GEO Foundation can calculate what it would cost to achieve 'climate neutral', or even 'climate positive' status if you wish to do more. This is provided to you as a total cost, and also divided by golfers or rounds, so you can consider getting more involved and paying the offset through many small contributions.
- GEO Foundation can then help you offset by contributing to Golf's Climate Projects—a network of projects adopted by golf through GEO Foundation's partnership with The Gold Standard, a world leading standard for climate and sustainable development intervention projects. Contributions to these projects make a real difference toward one of the world's biggest issues, and contributing into this fund also helps raise awareness of the collective commitment golf is taking to playing its part in climate action.
- To find out more and join with others across the sport and get your facility recognised as a Climate Leader, please contact hello@sustainable.golf or visit sustainable.golf





Sustainable.Golf

SCORECARD+
CARBON REPORT

OnCourse®