

Carbon Emissions: Obligations, Options and Opportunities for the VSCC.

VSCC 'Carbon Emissions Initiative' Sub-Committee*

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Summary Introduction

The VSCC now needs to be contributing publicly and significantly to the UK becoming carbon neutral. Parliament (including the governing and all opposition parties) has endorsed the words of the President of the COP Conference in Glasgow, who summarised the commitment for all those attending to keep "the goal of limiting global warming to 1.5C above pre-industrial levels within reach. And [...] we have won historic commitments from countries to act on coal, cars, cash and trees." In view of the fact that we are already within 0.3C of that 1.5C limit, all fossil fuel powered motoring will be under tremendous – and increasing – public scrutiny for the rest of the decade as we attempt to meet that target.

Notwithstanding the significant national heritage inherent in Edwardian, vintage, thoroughbred and classic cars¹, the wider political realities now render superfluous any arguments that organizations such as the VSCC do not need to be contributing explicitly and significantly to the UK being carbon neutral. In contrast the VSCC is ideally placed to provide strong leadership, delivering a viable, sustainable future for vintage motoring and competition throughout this decade and beyond. Further to the Club's Environmental Statement and the recent President's Letter, this report focuses on how the Club can both reduce its emissions and recover² those emissions that are unavoidable, during the period before 100% sustainable fuels (as opposed to biofuels) become readily available.

The report summarises the due diligence exercise carried out on five carbon recovery providers – see Appendix 1. It notes that partnering with a formally accredited scheme is essential for acceptance by stakeholders and interested third parties. Further to discussions with the Board, the report takes as a starting point the need to ensure the Club's long-term financial sustainability on the grounds that for the Club to be able to contribute anything at all, it must remain in existence. It also notes that all involved with historic vehicles should stand united in their commitment to the environmental future.

Recommendations

With these starting premises, the report makes a set of Primary Recommendations (Appendix 2) concerning which scheme the VSCC should partner with and for what purposes. In short, on the strength of the due diligence exercise, this report recommends the Club enters into an arrangement with Tree-V (the preferred partner of the Federation of British Historic Vehicle Clubs) to a) recover around 400% of the total annual emissions from all of its events, equally balanced in offsets and capture and b) 100% capture 10,000 miles of modern car emissions, which more than covers the annual mileage accrued by the Club's staff.³

* John Barrott, Jonathan Reeve, Liz Tubb, Mark Dibben and Steve Allen; see Appendix 3. For all inquiries please email: library@vsc.co.uk with the subject header Carbon Emissions Initiative.

¹ Each of these terms represent different periods of car design, from the beginning of motoring though to WW2. For the present purposes, we will use 'vintage' as a general term to describe cars from each of these eras that are recognised by the Vintage Sports Car Club, as eligible for its motorsport events. 'Classic' is another word used in a similarly general way, by people referring to cars of these eras, and indeed any car that the DVLC officially regard for their taxation purposes as an 'Historic Vehicle.'

² By 'recover' we mean a balanced approach that includes both carbon offsetting and carbon capture. Carbon offsetting is purchasing carbon credits directly connected with schemes that have *already* reduced the amount of CO₂ in the atmosphere. Immediate offsetting schemes are almost always international. Carbon capture is the attempt to lock away CO₂ being produced now, in the future, by for example tree planting; the trees take time to mature. Future capture schemes are almost always nationally based and to meet the needs of the Club, given its primarily UK focus, those chosen by the Club should in the first instance be UK-based.

³ These recommendations were approved by the Board on the 16th March 2022. To allow for the necessary accounting arrangements to be put in place, the first event to be covered by the new scheme was the Welsh Weekend Tour, 26-27th March.

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1.0 Political Realities and Clarity in Terminology

It's like the Wild West out there. You need to be very careful who you put your money with and what claims you make about it. Jonathan Brunyee, regenerative agriculture expert⁴

1.1 Can 'Net Zero' Claims be justified?

As was noted in the Introduction, the external political realities make it imperative that the VSCC develops a comprehensive and coherent strategy for achieving net zero emissions as soon as possible. The newly established industry body, the Historic and Classic Vehicles Alliance (HCVA, self-described as representing the businesses restoring and selling cars), is itself explicitly working towards bringing the industry towards net zero, not only through strong media campaigns but also most notably through its newly launched emissions scheme 'Net-Hero' (the title is a play on words that draws on their close links to the Historic Endurance Rallying Organisation). We need to be working equally quickly.

In point of fact, however, it is difficult to accurately quantify absolute net zero⁵ emissions for an organisation that has, at its core, vehicles used year-on-year in a variety of ways and in varying amounts that produce CO₂. This is because of the question of how one goes about recovering them (see below). As such, it is perhaps more straightforward to address the more qualitative question of whether or not one is operating the Club in a manner that is carbon neutral, eliminating the reliance on e.g. carbon-intensive suppliers of heat and electricity, as well as doing all that is possible to recover those emissions that are unavoidable. For a Club with such prominence as the VSCC in the vintage car scene, it would be easy for well-intentioned actions to be undermined by describing them as 'achieving net zero', only for third parties to measure the use accurately (by for example soil ecosystem and chemistry analysis) and decide they do not.⁶

1.2 How to have positive arguments for vintage cars listened to

The political challenges do not end there. While the general public may hold a nostalgically positive view of vintage cars, that is beginning to be undermined by the drive for the modern vehicle fleet to be made zero-emitting at the point of use. Arguments that vintage cars are 'cleaner than a newly washed Tesla' because a) they lack precious and non-recyclable metals, b) they do not rely heavily (if at all) on plastics, c) they were simple to manufacture and are easily repaired, d) they were not manufactured in high volume by energy intensive factories⁷ as compared with today's cars, e) they are unlike modern vehicles that become obsolete as soon as their sophisticated electronics are no longer supported, f) in sum, they have a longevity that means their true 'first bolt made through to last bolt recycled' carbon footprint is minimal, all do not wash! This is partly because the tendency is for most people only to consider the driving of the car, as opposed to its in-manufacture or in-disposal emissions, much less the materials used.

⁴Farm-Ed.co.uk, Shipton Under Wychwood (five miles from TOPO), pers.comm. 20/01/2022; see Appendix 3.

⁵ Net-zero has a quantitative meaning, that through accurate measurement the carbon emitted into the atmosphere is equal to the carbon taken up from the atmosphere.

⁶ In fact, some may even question the term 'carbon neutral' as being too quantitative. They would say the only accurate phrase is 'low carbon'. However, for the purposes of the Club's membership, 'neutral' has a qualitative meaning. The neutral position on a gear lever can be found across the entire width of the gate. It does not refer to a particular gear and indeed the car can roll forwards or backwards when it is in neutral.

⁷ As Tesla founder Elon Musk noted, as a car maker dependent from the outset on heavily automated, robot-intensive manufacturing, he had first to "build the machine that builds the machines" (12/06/16; presentation to Tesla shareholders, <https://www.youtube.com/watch?v=f9uveu-c5us>); an energy intensive process in and of itself. In contrast, car factories at the time vintage cars were made were of course reliant entirely on (mostly) skilled manual labour. They were also manufacturing far, far fewer vehicles a year.

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Furthermore, there is no getting away from the fact that the exhaust of a vintage car driving down a city road can sometimes be seen and indeed smelled. The effect of this on the impression it creates with passers-by is out of all proportion to its minimal impact on climate change. The impact is minimal not least because annual vintage car mileages are so low, less than 1500 miles on average per vehicle.⁸ In addition, it is well understood that the exponential increase in CO₂ emissions that has led inexorably to the immediate climate crisis commenced during World War 2 and has continued unabated ever since.⁹ Vintage cars, on the other hand, were used as daily workhorses in the 1920s and 1930s; their legacy impact on the present circumstances is therefore remarkably small. To reiterate, however, relying on such arguments only creates a *perception* of nay-saying and climate change denial. It is therefore imperative that we are seen to be doing everything we can to contribute towards the UK being carbon neutral by 2050. Only in this way will arguments about the true impact of vintage car use, be listened to in any way positively.

⁸ We do not here seek to deny there are air quality implications but we would argue that, again, the limited annual use of the cars means the pollution they cause too, is comparatively small. This is so even although their engines are almost always entirely atmospheric, i.e. unless they are supercharged (and very, very few are) their air fuel ratio is naturally stoichiometric at 14.7:1. Modern direct injection, high compression petrol turbo engines are in excess of 30:1, ie. more than twice as lean burning, and the most modern have particulate filters too. However, the average mileage of a modern car is in excess of 7000 miles a year; many do a great deal more. Assuming an average of 1500 miles a year and 25mpg, on average they each emit probably no more than three-quarters of a tonne to a tonne of CO₂ a year (<https://clear.eco>).

⁹ 'The Great Acceleration' trend in CO₂ emissions (https://en.wikipedia.org/wiki/Great_Acceleration).

2.0 Achieving Carbon Neutrality

2.1 Due Diligence Exercise

In order to assess the best approach possible for the Club to adopt, a five-way due diligence exercise was carried out assessing the relative merits of leading carbon offsetting and capture organisations. Inclusion was on the basis of a) their offering the offsetting or capture of emissions from vehicles, b) broadsheet recommendations, c) having an existing relationship with the Club, d) longevity, e) UK focus. More specifically, evaluation, which occurred in January 2022, was against the following three sets of criteria¹⁰, (see Appendix 4; anonymised):

First, whether or not they offered accredited schemes, official Gold Standard schemes (see 2.2 below), multi-site schemes, UK sites, immediate international offsetting (i.e. immediate impact), peatland restoration as this was something asked for by Club members, and over-recovery options (i.e. greater than 100%). Second, whether they were themselves accredited as organisations, were car specific in their offer, and had other sports organisations as named clients. Third, what was the best price per tonne of CO₂ recovery. On balance and with due regard for a requirement to offer both immediate impact carbon offsetting and long-term UK carbon capture, Tree-V was ranked first. This position was reinforced when price was considered in detail.

2.1. Events

In regards to the events the Club runs for and on behalf of its members, it is important that these are rendered at minimum carbon neutral. Just as a golf club is not responsible for the emissions its members cause in getting their golf clubs to the club, so the VSCC is not strictly speaking directly responsible for emissions caused in driving to the events – be this in the vintage car or in a modern towing car. While it would have been ideal to maintain our relationship with the Woodland Trust, who are the recognised leaders in woodland planting, restoration and management, their updated partnership scheme requires a minimum capture of 300 tonnes¹¹.

It is imperative that emissions are immediately offset and are also recovered by capture schemes that are UK based. This should include peatland restoration to take into account the wishes of members and recognise the fact that the events take place in the UK. Fortunately, Tree-V undertook to offer the VSCC the option of accessing their forthcoming peatland scheme immediately. To ensure emissions from the various event types run by the Club are recovered accurately, a detailed exercise designed to determine the estimate average emissions per car in each event type was carried out, the main results summarised in Appendix 3. In short, three on-road mpg scenarios were modelled, Scenario A 20-25mpg, Scenario B 15-20mpg and Scenario C 28-32mpg, the latter being the weighted average of Autocar test mpgs in period for a sample basket of cars. All were corrected on advice from the VSCC competitions team to take into account the use of the cars in the different event types. On analysis, it was decided that the most realistic Scenario to use and the most believable to the wider public, was Scenario A; this was subsequently agreed by Tom Worthington at Tree-V.¹² The results of Scenario A are detailed in the Introduction and represent a cost-effective way of rendering the main activities of the Club carbon neutral.

Our modelling shows that in the very worst case Scenario B, the emissions caused during our events in 2021 were 115t CO₂. We therefore fall under the Woodland Trust's partnership scheme minima and are unable to access their UK wide presence and tree planting activity despite the fact it better represents the VSCC's own UK wide presence and events activity. On the other hand, the low emissions we produce as a Club are well within Tree-V's planting capability, especially since the tonnage would be captured on a 50:50 split between planting and peatland restoration. Lastly, the

¹⁰ Developed on the strength of discussions with the experts consulted.

¹¹ Email correspondence, 19th January 2022.

¹² Pers.comm. 01/02/2022.

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Club should also consider working with event location owners to ensure on-site services are provided in a manner that is both as environmentally friendly as possible and also in a way that meets the expectations of younger generations; bacon butties are no longer guaranteed to hit the spot!

2.3 The Daily Business Activity of the Club

As the VSCC is not a manufacturing organisation, making the day-to-day operation of the Club carbon neutral and indeed sustainable in the long-term can be achieved relatively straightforwardly, by:

- a) ensuring all suppliers are themselves operating within carbon neutral policies;
- b) actively recycling all materials in line with local District Council requirements;
- c) capturing all mileage accrued in the day-to-day business of the Club; and
- d) promoting a well thought-through working from home policy, to cut down as far as sensibly possible on commuting miles.

In short, there is no reason why the day-to-day operation of the Club cannot be rendered carbon neutral almost immediately. For example, it has been agreed that the FBHVC's partner Tree-V shall capture, through UK tree planting, 10,000 miles of business travel for £75.00.¹³ Indeed, the most problematic issue might be where we have entered into long-term contracts with suppliers to achieve best price stability, for example printers or suppliers of gas and electricity. Even so, it should be possible to switch at minimum to 'carbon offset at source' arrangements immediately in most cases and at minimal additional cost, where it is not possible to switch suppliers.

2.2 Problems Associated with Vintage Car On-Road Mileage Emissions Recovery

The President of the Club originally asked the sub-committee to look at the recovery of on-road emissions. This was both because of the environmental benefit¹⁴ and because it would enable members driving their cars to point to evidence, in the form of a sticker, that the car's emissions were already recovered – in the event they were approached by members of the public taking a strident view against vintage cars. However, the following ten problems arose when considering the implementation:

First, members have expressed a desire for peatland restoration as well as tree planting and a desire to have their emissions recovered in the UK. This is so, even although the most immediate impact is to be found in international offsetting.

Second, following on from the first point, in order to ensure the Club would be able to stand by the emissions recovery schemes it might choose, given the many, many organisations now offering offsetting and capture schemes, it was immediately clear that any schemes chosen by the Club would need to be externally accredited. In brief, there are schemes that are internationally accredited against the UN's Clean Development Mechanism criteria. These place an emphasis on immediate, or near immediate, impact of the offset on climate change. Gold Standard Schemes are therefore mostly focused on projects with a more immediate impact on climate change, such as

¹³ That is travel incurred by staff, other than commuting to work, on Club business.

¹⁴ The average vintage car (see Appendix 3) driven the average 1500 miles per annum at 25mpg (Scenario A) emits 0.77tCO₂ a year. This figure is clear.eco's calculation and has subsequently been verified by Tree-V. As there are over 3000 vintage cars in total owned by Club members, the importance of on-road emissions recovery becomes evident.

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small-scale hydro-electric plants, clean burning stoves, waste water treatment projects and rainforest habitat preservation, in emerging economies.¹⁵

Third, given the time it takes for trees to reach maturity, and for peatland to recover, these are no longer deemed to meet the CDM criteria; schemes assessed as Gold Standard against the UN benchmarks tend to list tree planting as a 'voluntary' component of their accreditation paperwork.¹⁶ As such, UK tree planting is only accredited through national accreditation schemes such as the Woodland Carbon Code and the Peatland Code in the UK. Nonetheless these oversight bodies serve an important function.

Fourth, given the risks of sapling loss before maturity, coupled with the fact that cars can be carbon neutral either by being left in the garage or in a museum, in order for the Club to make a mitigated and preferably even a regenerative contribution towards helping the UK become carbon neutral by 2050, the option to over-capture emissions is seen as being very important. In other words, there has to be a genuinely positive reason for driving them in the context of the climate crisis.

Fifth, it would prove unrealistic to recover the emissions from a Member's fleet of vintage cars, on the grounds both of cost and given the simple fact that not all members declare all their vintage cars to the VSCC. It was therefore decided that the Club should aim to recover the emissions of one vintage car per Member.

Sixth, there was the question of how to deal with Family memberships, where two people might be driving on one membership; it was decided from discussions with Library staff and others with years of VSCC experience that that on balance very rarely would two members be driving two separate cars.

Seventh, there was the question of Junior members and it was decided that it would be unfair to expect Junior members to pay to recover emissions from cars they could not drive (since they have no on-road licence).

Eighth, it can be questioned whether emissions offsetting, in particular, is sufficient and therefore it was imperative the Club investigate other initiatives that could be taken in addition to emissions recovery, including but not limited to the elimination of as much CO₂ emitting activity as possible (see 2.3 below).¹⁷

Ninth, the question of what date to begin considering the emissions impact of our vehicles is open to debate. Notwithstanding the minimal legacy component to their carbon footprint discussed above, there is no getting away from the fact that the cars have contributed to global warming from the very moment they each began to be built some 80+ years ago. Some may argue that all of that needs to be addressed and recovered.¹⁸ This would become impractical from the point of view of measurement and also probably unfeasibly expensive.

Tenth, the question of timing also potentially opens up current owners to finding the cost of the emissions of their cars long before their ownership, which many would argue is unfair and unreasonable. The risk is then that people decide to do nothing at all, which is just precisely what we

¹⁵ See for example <https://clear.eco/carbon-offset-projects/>

¹⁶ Pers.comm. Ian Roderick, Director of the Schumacher Institute (07/01/22), who runs a Gold Standard certified carbon offset scheme himself. All experts consulted concurred that while planting trees is undoubtedly a good thing to do, it is problematic because of the survival rate of saplings and the time taken to reach a maturity that enables the tree to capture the carbon it was planted (presumably in a manner that meant the species chosen is in concert with the local ecology) to capture. Thus tree-planting may help the UK achieve net-zero emissions by 2050, but it does little to offset emissions today. To offset emissions today requires one to purchase carbon credits *already achieved* by offsetting schemes.

¹⁷ These are listed in full in the detailed recommendations (see Appendix 2).

¹⁸ We are grateful to Dr Bruce Elliot (<https://clear.eco>) for pointing this out; email exchange (03/03/22).

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want to avoid. Our view is that there is no time like the present, a line must be drawn somewhere and pragmatically therefore, it makes sense for the line to be drawn here.

2.3 400% Recovery of Carbon Emissions Created by Competing Cars at Events

Given the difficulties associated with attempting to recover on-road emissions, the sub-committee gave a great deal of further thought to the question of what level of recovery should be the target for the Club's event responsibilities. It settled on 400% recovery, balanced equally between immediate international offsetting and long term UK capture, for the following reasons.

1. The expert advice we have received recommends a 'balanced' approach, i.e. that the approach uses both immediate international offsetting and UK long term capture equally. Further that the UK capture should itself be split equally between tree planting and peatland restoration.
2. 200% immediate international offset (which is cheaper per tCO₂ than UK capture) recognises we live in one world and we can be an influence for good where, arguably, change is needed most urgently. It also immediately accounts for the emissions we make, and doubly so.
3. 200% UK long term capture recognises our events are in the UK and we need to do what we can at home too. This is why we are capturing through both tree-planting and peatland restoration, and doubly so.
4. We recognise there are particulates that our cars emit as well as CO₂ and the over-recovery goes some way towards compensating for that.
5. We recognise that additional emissions are created by taking the cars back and forth to and from the events and we need to go some way towards compensating for that also.
6. We recognise that the cars' engines are running at events for longer than the time in actual competition. That is, they are warmed up, they spend time behind safety cars on sighting laps, they get themselves lost on rallies and so on!
7. We recognise that the use of the cars in our events degrades oils and tyres.
8. The expert advice we have received leads us to conclude that 400% recovery is a very reasonable position to adopt; nobody can accuse us of simply 'greenwashing.'
9. 400% sends a clear signal to younger generations - who want to see action - that we take the matter very seriously; it also puts us in a position where the arguments regarding the very small carbon legacy of our cars can then be heard properly.

In sum, 400% demonstrates that the use of our cars can make a genuinely positive, perhaps even regenerative, contribution towards the UK achieving net-zero by 2050.

3.0 Discussion

I must say the last thing I would want is to do away with the vintage and classic car scene. It's a great celebration of human achievement. Ian Roderick, Director of the Schumacher Institute¹⁹

3.1 Remaining Financially Sustainable

Notwithstanding the argument that the Club can only be responsible for the emissions created by its cars during events, as well as the ten problems discussed in detail above, the idea of covering on-road emissions offsetting (one vintage car per paying, driving member) was put to the Board for discussion. This was because the emissions from on-road use of members' cars even at an average of 1500 miles per annum represents a far greater level of emissions than are created by cars competing in events. However, even at current best price international offsetting costings from clear.eco, it quickly became obvious that doing so would not be financially sustainable. It would either require a sizeable five figure sum to be found from reserves annually which would significantly constrain risk mitigation, or it would require such a rise in the annual membership fee as to make membership no longer viable for many members. This in turn would impose a real risk to the Club's future.

In the final analysis, the Club can only do what it can in taking full responsibility for its event emissions. At the same time, however, it can encourage its members – and others who come to spectate – to take personal responsibility for their own on-road emissions, be this from vintage or modern vehicles. The choice of Tree-V to achieve a balanced recovery through both international offsetting and UK capture gives the best value possible for the Club while ensuring vehicle emissions are immediately offset. Furthermore, by going towards projects that by their nature help limit global emissions today as opposed to by 2050, the international offsetting significantly improves ecosystems and local communities in emerging economies – where the effects of climate change are often most keenly felt. In addition, the choice of Tree-V ensures that we have a strong UK aspect to our carbon capture that meets members expectations, and especially since this will be achieved through an even split between tree planting and peatland restoration.

3.2 Staying Out of Politics and Being Open to Opportunities

Simply because the VSCC is focussed very largely on the first half-century of motoring, nothing about either the UK economy, general mobility or even trains should stray it far from its mission. Motoring caused a huge and beneficial revolution in everyday life, in Britain and around the world. Our job as a Club is to celebrate that; it should not be forgotten that up until the early 1900s, electric motorcars were more advanced and more popular than petrol ones. Our role in celebrating motoring competition also is a celebration of the very crucible of technological development that has, in the last decade, seen the tremendous advance in technology that is allowing electric motorcars to become viable once again.

The authors of this report are clear that our Club needs to keep as far away from politics as possible to maintain the goodwill we currently enjoy. If members feel so inclined they can and perhaps should also belong to conservation-minded organisations that operate openly in politics. However, it would in our view be lethal for the VSCC, as we know it in our lifetimes, if we contribute much longer *negatively* to global warming. We must therefore become neutral in that respect, make sure everyone knows that we are climate friendly and doing all we can to positively contribute to fighting global warming. It is only by operating in this way that the often-overlooked, but remarkably

¹⁹ Pers.comm. (07/01/22).

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important, social and psychological wellbeing benefits that vintage cars bring to enthusiasts, spectators and the general public alike, can most reliably continue to be experienced: In “All walks of life, the [old] cars fetch people together.”²⁰

More broadly, the sustainability of the Club relies on attracting new members and younger generations of members. We argue it is insufficient merely to have a coherent approach to offsetting the emissions caused by our cars, such as that which we have laid out above. It is imperative the Club moves in a variety of directions all at the same time. As such, in addition to the offsetting schemes and the elimination of emissions wherever possible through excellent business practice (see. 2.3 and Appendix 2), it should look to work with potential synthetic fuel suppliers such as Zero Petroleum²¹, to explore the extent these petrol alternatives can be used in older cars.

After all, the Club has a large fleet of cars, all having comparatively simple internal combustion engines: Surely even a small number could be made available, by those among the membership wishing to contribute further, to test (most immediately, we suggest) alkylate fuels, followed by the emerging fossil-free fuels such as those being developed by (e.g.) Zero Petroleum and Porsche.²² The sooner the gap can be bridged, between the existing reliance on petrol and viable alternatives becoming available for use in internal combustion engines, the better for everyone. Building from this, we suggest innovative sponsorship approaches be taken to widen public awareness of alternative carbon-neutral fuels.

3.3 Working with the Federation of British Historic Vehicle Clubs (FBHVC)

The FBHVC’s vehicle emissions recovery scheme in partnership with Tree-V works via an organisation called Forest Carbon. It was “founded in 2006 with the twin ambitions of increasing woodland creation in the UK and putting a price on businesses’ carbon emissions.” It works to “build strong partnerships with landowners, companies and individuals, enabling private sector investment to fund the planting of over 12 million trees, primarily in the UK.”²³ Our relative size as a Club within the Federation makes a collaboration politically important. We will each be seen to carry more weight if we work as far as possible together, e.g. in supporting the All-Party Parliamentary Historic Vehicle Group.

In addition to the events being covered by the Club, members can of course offset both their vintage and modern on-road vehicles at a discounted price through the FBHVC’s existing Tree-V scheme: <https://trees.fbhvc.co.uk/>. Even given the present economic circumstances, members may well be surprised at how cost-effective this is.

3.4 Positioning the Club for the Values, Attitudes and Beliefs of Younger Generations

The drive for carbon neutral motoring can most usefully be seen as part of a wider shift towards all organisations operating with due regard to high standards of social, environmental, and governance best practices. A great many pre-war cars are not as expensive as they once were and there exist now innovative vintage car loan schemes that allow young people to experience the joys of vintage

²⁰ Direct quote, Sarah Crabtree in the Series 1 Introduction to Episodes of the ‘Bangers and Cash’ TV series.

²¹ Porsche-Siemens have also developed synthetic ‘climate-neutral’ fuels. Both Porsche and Zero Petroleum have run vehicles using these fuels, which use the Fischer-Tropsch process to derive hydrogen from water and carbon from carbon dioxide (or carbon monoxide; https://en.wikipedia.org/wiki/Fischer-Tropsch_process) sourced from the air to then synthesise petrol, diesel and kerosene (see e.g. <https://zeropetroleum.com>).

²² We are grateful to Guy Lachlan of Classic Oils at the Bicester Heritage Centre for this suggestion (pers.comm. 11/01/22)

²³ <https://www.forestcarbon.co.uk/about>

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car ownership and learn life-enhancing and confidence-building skills along the way.²⁴ Our role in enabling, if not a social movement then at the least a neo-tribe that brings people together young and old, be this as family, friends, competitors or spectators, to have fun in ways which at their very best can confound established personal and societal roles, class structures and expectations, presents us with many opportunities.

Made as they were from extremely long lasting and very repairable, often sustainable, materials the cars the VSCC mostly represents will outlive us all. It would be a very great shame if they were soon to cease being used, either due to laws, lack of fuel or perhaps worse still, lack of interest. Younger generations increasingly expect – and why not? – economic systems change that moves the earth's human population towards a more ecologically sound footing in which issues such as justice, equity, diversity & inclusion become taken-for-granted. We note that clear.eco are now a B.Corp²⁵ certified organisation. We see no reason *prima facie* why the VSCC could not fruitfully explore this or a similar avenue. Even if it did decide not to proceed to certification, a great deal could surely be learnt in the process of the exploration.

More immediately, and however many or few of the recommendations are adopted, a focused communications strategy will be required, including an updated responsibility statement that positions the Club for future fuel technologies. It should also include the development of a number of stickers in concert with Tree-V for events that are similar to the ones Tree-V issues to those who pay to have their on-road emissions recovered via the FBHVC scheme. Nothing will communicate the message that the Club is serious about being carbon neutral better, than visible stickers on cars and information in race programme entries. These can be the starting point for conversations and wider public awareness. Over and above the foregoing discussion, however, there remains a very straightforward moral point:

The Club should eliminate the emissions it can and comprehensively recover all unavoidable emissions because, simply put, *it is the right thing to do.*

²⁴ One such is the FBHVC's 'Classic Car Loan Project' run by Bob Wilkinson: <http://classiccarloanproject.co.uk/>

²⁵ <https://www.bcorporation.net/en-us/>

4.0 Conclusion

We note that environmentalists and politicians could very easily dismiss vintage car use with the line ‘They are carbon neutral when sitting in the garage or in a museum. They are contributing positively when they are recycled.’ Of course, were they to be made, such comments would reveal a lack of understanding of the many ways in which these cars contribute to society and the economy, of how small their carbon footprint legacy is or how very little, comparatively speaking, they contribute in their use today to global warming. The fact their use today causes so few emissions presents an opportunity that we urge is grasped with both hands. It is not expensive for the owners of these cars, whether they compete with them or simply use on the roads or indeed both, to recover the emissions.

In this way, by determinedly recovering more CO₂ than our cars create, both through immediate impact Gold Standard and otherwise accredited carbon offsetting schemes as well as accredited longer-term tree planting and peatland restoration for carbon capture, members can positively and actively contribute to meeting our nation’s obligations under COP26. If their vehicles are sitting in the garage or stuck in museums, all they can do is not make things worse. Besides, in reality, we do not believe that car owners in general will pay to recover emissions their cars do not create while in their ownership. We are confident, however, that our members will pay to significantly over-recover the emissions they do create: Simply put, why on earth – quite literally, wouldn’t they want to do just as much as they feasibly can to help?

This is why we recommend that the Club does as much as it financially can afford to recover emissions. A target of 400% recovery is achievable *at current pricing* and makes a significant, perhaps even regenerative contribution towards the UK achieving net-zero by 2050. We suggest it would be very difficult for anyone, except the most adamantly opposed on fundamental points of principle, to argue against the continued use of our vintage vehicles. That is, when we are able to say that using them with the amounts of over-recovery we suggest should actually improve matters in the long run.

This is particularly so, when the purpose of the approach is not to be an end in itself, but merely to ‘bridge the gap’ between the present day and the time when true synthetic fuels are commercially available at prices that make them viable. In short, the climate crisis undeniably presents us with severe challenges individually, economically, societally and indeed as a Club. In this report we have set out in detail some of the ways in which not only a) the challenges as they manifest themselves for the Club can be addressed, but also b) the opportunities that present themselves can be grasped. We trust this is a useful beginning.

Never waste a crisis.

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**Appendix 1
Due Diligence Table**

Organization	1	2	3	4	5
<i>Year Established</i>	2021	2021	1972	2020	2005
<i>Accredited Schemes</i>	Not discernible from the website and not to our knowledge; through BeZero Carbon ²⁶	Yes (International)	<i>Recognised industry leader for tree planting</i>	Yes for tree planting and peatland restoration (national UK only); through Forest Carbon	Yes - first UK carbon offset organisation to have accredited schemes. (International)
<i>Gold Standard Schemes</i>	No	Yes	No	Some	Yes – some are GS, all are QAS certified
<i>Accredited Organisation</i>	No	No	No	No	Yes – B.Corp
<i>Multi-site</i>	Presumed; info not available	Yes	Yes	Yes	Yes
<i>UK Sites</i>	Yes	Yes	Yes	Yes	No
<i>Carbon Capture: Tree planting</i>	Yes	Yes	Yes	Yes	No
<i>CC: Peatland Restoration</i>	No	No	No	Yes	No
<i>Impact Now</i>	No	Yes	No	Yes	Yes
<i>Best price per tonne of CO₂</i>	£30.00 website	£83.88 minimum Website	£25.00 negotiated	£18.40 mixed offsetting and recovery, valid to June negotiated	£10.90 valid to mid-Feb negotiated
<i>Over-offsetting available</i>	No	Yes	Negotiable	Yes	Yes
<i>Car Specific</i>	Yes – by design	No – avg person in the UK	Yes – by arranged contribution	Yes – by design	Yes – by design
<i>Sports Organisation Client</i>	Not at the time of writing	Not at the time of writing	Not at the time of writing	Not at the time of writing	Yes – the England Football Team
<i>Existing Relationship</i>	No	No	Yes	No	No
<i>Rank</i>	5	4	3	1	2

²⁶ Pers.comm. Guy Lachlan (11/01/22).

**Appendix 2
Detailed Recommendations**

1.0 Primary Recommendations

- 1.1 The VSCC should develop and implement a coherent sustainability strategy that ensures the Club is operating in a genuinely low carbon manner by the beginning of the 2023 event season or, at the latest, the 2023 AGM.
Within this strategy, the Club should:
- 1.2 Partner with Tree-V (FBHVC) for both carbon capture through UK tree-planting and UK peatland restoration and immediate impact internationally accredited offsetting as follows (1.3 – 1.5).
- 1.3 Capture club business-incurred modern car emissions with Tree-V (£75.00 for 10,000 miles).
- 1.4 Render Club events 400% carbon emissions recovered. That is, 200% recovered through accredited immediate international offsetting and 200% recovered through accredited UK capturing of emissions. Emissions capture should be by tree planting and peatland restoration on a 50:50 basis with Tree-V (instead of the current £1 per entry fee arrangement with the Woodland Trust). Modelling following research by the VSCC Library using a representative sample of cars plus two other scenarios along with accurate mileage and entrant numbers information from events in 2021 (Appendix 3)²⁷, yields the following reasonable average emissions additional cost estimates per entrant per event. These are at Tree-V's price/t CO₂ of £18.40²⁸ and are the costs to be added to the existing event entry fee: Race Mtg £1.77; Pomeroy (2020) £2.39; Hill Climb (£0.73); Speed Trial (£0.81); Trials £2.06; Auto Solo (£0.94); Driving Test (£0.91); Rally £2.48; Tour £2.39. **The average per entrant / per event is 0.023t CO₂ produced²⁹ and the average event entry fee rise across all events would be £0.71.³⁰**
- 1.5 To be as accurate as possible, current budget-year entry forecasts should be used to determine the actual sums paid to Tree-V and any over- or under- payments in the first year of the scheme should be adjusted for in the second – and so on. This will ensure payments to Tree-V remain balanced.³¹
- 1.6 Encourage members to recover any other vintage vehicles, as well as their modern ones, through a recognised offsetting and/or capture scheme.
- 1.7 To assist in the achievement of 1.1, the Club should audit its main suppliers to ensure it is able to reduce as far as possible its direct and indirect CO₂ emissions. Within this, the Club should:
- 1.7.1 Ensure that TOPO's heating and electricity is supplied through best-price providers that, preferably, use clean sources of energy or, at the least, offset at source any emissions created in the provision of that energy.
- 1.7.2 Switch to best-price verifiably Carbon-Neutral providers of all other services.
- 1.8 Work with fuel companies such as BP, Shell or Esso, to source a Club fuel card for all members, where all fuel purchased is offset at source, i.e. by the fuel company. Only

²⁷ As the Pomeroy event was not run in 2021, the data from the 2020 event are used.

²⁸ Valid to June 2022.

²⁹ This being the overall total of 70.17 tonnes divided by 3028 total entrants in the year.

³⁰ This being the overall charge for all events divided by 3028 total entrants.

³¹ We are grateful to the Club Accountant for this suggestion.

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Shell presently offer an individual fuel card that offsets emissions at source, applied for on an individual basis.³² However, it is well known that fuel offset cards only account for around half of the carbon emission created 'from crude oil to exhaust pipe'. Thus a fuel card on its own is not a true or complete substitute for other emissions offset schemes. At present A VSCC badged fuel card is apparently not possible because of the question of the credit history assessment of individuals members.³³

- 1.9 Amend the Mission Statement of the Club so that it is explicit in its determination to operate at carbon neutral and beyond.
- 1.10 Develop a clear and targeted marketing approach, including a responsibility statement that: a) has a positive and proactive narrative; b) explicitly recognises the national heritage value of vintage cars as well as the social and psychological wellbeing that derives from them; while at the same time c) positions the Club for future fuel technologies.

2.0 Suggested Mechanisms for the achievement of Primary Recommendations

- 2.1 Work with Tree-V to ensure emissions recovery is built into number boards displayed on cars at events and also that car stickers can be displayed by members on their chosen cars where they have decided to recover their on-road emissions, as if it were an annual tax disc. While the present stock of number boards are still in use, work with Tree-V on a suitable sticker to go onto all competing cars perhaps at the time of scrutineering.
- 2.2 Add a small green tariff to the paper newsletter surcharge.
- 2.3 Investigate whether and how to implement a Gift Aid or similar tax-reduction scheme for those over-recovering their vehicles.
- 2.4 Negotiate arrangements with Tree-V, such that VSCC membership allows individuals to recover extra cars at discounted rates; encourage members to recover their other vehicles either through Tree-V or Clear.eco (who offered the best price for offsetting alone).
- 2.5 Encourage members to reduce the environmental impact of their modern car ownership to the minimum.
- 2.6 With regard to recovering Events: a) make one-off payments to Tree-V, to cover event entry fees that fall due between the date of the formal approval / AGM and the date of the recovery scheme going live; and/or b) from the date of the recovery scheme going live, entry fees are to include the Event Offsetting Fee (1.5). This is so that *all* Club events are either included in the carbon recovery scheme a) immediately and /or b) within one calendar year.
- 2.7 Make 'carbon emissions initiative' a standing item on the Board and AGM agendas and ensure the Club's published annual accounts include information on the delivery of its carbon emissions initiative.
- 2.8 Develop a clear marketing campaign that: a) encourages members to recover the emissions of their vehicles, including those used to transport their vintage cars to events; b) promotes public awareness of the Club's carbon emissions initiative, both through the

³² <https://www.shell.co.uk/motorist/loyalty.html>

³³ However it should be noted that Shell do not guarantee their premium fuel is ethanol-free; at the time of writing only Esso do this and it is not certain they will continue to do so. The Porsche Car Club arrangement with WEX-Esso is the exception on account of credit histories being more easy to trace through WEX and estimate from the value of the vehicles (pers. comm. BP and Esso fuel card representatives, 25/001/22 and 26/01/22 respectively). Both BP and Esso have small business cards that could be used by those members who are able to run their vintage cars through their own businesses.

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- website and in e.g. event programmes; and c) encourages (i) members and (ii) spectators to recover their – (i) other and ii) own – vehicle emissions through accredited recovery schemes such as Tree-V or clear.eco
- 2.9 Under the auspices of the ‘trust-but-verify’ principle, independently audit the FBHVC / Tree-V emissions recovery scheme through, for example, direct engagement with the Woodland Code and the Peatland Code.
- 2.10 Add ‘Carbon Neutral VSCC’ as a quarterly Board meeting standing agenda item.
- 2.11 Establish a Sub-Committee reporting to the President, to monitor the implementation of the recommendations and identify further opportunities.

3.0 Secondary Recommendations

- 3.1 To reduce the costs associated with moving to carbon neutral, the Club might consider a more regular ‘advertisers insert’ to the Bulletin, similar to the Mercedes Benz Car Club. Per the MBCC also, perhaps a Recommended Suppliers booklet once a year; ideally these should be vetted for their own carbon neutral activity.
- 3.2 Through e.g. sponsorship arrangements, partner with tyre and fuel suppliers to ensure any tyres, fuels and oils provided for competitors at events are carbon neutral. When achieved this will ensure that, taken together with the event fee increase (1.5), events indisputably make a regenerative contribution.
- 3.3 Partner with fuel suppliers in the development of less carbon emitting and synthetic fuels suitable for vintage cars, using the vehicles of willing members to do so.
- 3.4 Work through the FBHVC to publicise and make it as easy as possible for one-make clubs and other vintage car clubs, such as the Veteran Car Club, to move as far as possible towards being carbon neutral themselves if they have not already done so.
- 3.5 Give members who win ‘pots’ [trophies, medals etc] at events the option to donate the value to the Club’s carbon neutral initiatives.
- 3.6 Work towards having the Club’s 90th anniversary event closely associated with our carbon neutral initiatives.
- 3.7 Develop a purposeful working from home strategy for the Club’s employees, to actively limit the amount of vehicle commuting – and thus limit the pollution caused by direct emissions and also by brake dust and tyre granulation (which gets into water run-off).
- 3.8 In the event of a change of HQ location, ensure future HQ building acquisition is focused on achieving a carbon neutral infrastructure as part of the development of a sustainable model of Club operation.
- 3.9 Work with the FBHVC to support the All-Party Parliamentary Historic Vehicle Group.
- 3.10 Work with Motorsport UK and event location providers, for example in sustainability and the provision of catering, to ensure the event experience is in keeping with expectations, particularly of younger members who are the future of the Club.
- 3.11 Investigate the possibility of the Club also becoming accredited as an organisation in its own right, with a recognised net zero body such as ICROA and/or a sustainability and CSR accrediting organisation such as BCorp. This would in effect create a type of ‘quadruple bottom line’ with regard to its responsibilities: 1) accredited schemes in the UK for the future capture of today’s emissions; 2) Gold Standard or similarly-accredited schemes for immediate overseas offset of today’s emissions; 3) capture day-to-day business mileage; 4) separate external accreditation of the Club for its carbon reduction, sustainability and corporate social responsibility.

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Appendix 3: Rationale and Method Used for Calculating Emissions at Events

Without separate emissions costings, certain Event types will end up heavily cross-subsidising others, which is unfair. The following iterative method was used to overcome this:

1. The development of a representative sample of ten cars' mpg figures, from a Bentley 4 1/2 at one end to an Austin Seven at the other, taken from road tests in period.
2. The study of representative entry lists, one of each of the 2021 event types, as follows: Halloween Driving Test; Summer Rally; Lakeland Trial; Hertfordshire Tour; Silverstone races.
3. An appreciation of the relative numbers of each sort of car in the events, and of the mileages for each event.
4. A calculation of the estimated average mpg for cars participating at each event weighted by the numbers of each car type.
5. Using Clear.eco's on-line calculator, based on calculated average mpg and miles travelled, a figure for the estimated amount of CO₂ emitted by the 'average car at each event type'. From this:
6. The cost to recover the emissions produced by the 'average car at each event type':

Miles Per Gallon Estimates <i>Illustrative Basket of Cars</i>	Derived From Autocar <i>Year</i>	Road Tests Figures in Period <i>[MPG Scenario A: 20-25 B: 15-20 C: Autocar]</i>
AC 12hp	1924	30 – 35
Alvis 12/60 [x 2 weighting]	1931	28 – 30
Amilcar CC	1921	45 – 50
Austin B7 [x 5 weighting]	1937	35 – 40
Bentley 3 Litre	1924	20 – 25
Bentley 4 ½ x 2 weighting	1929	15 – 17
Fraser Nash Super Sports [x 5 weighting]	1930	25 – 30
Ford Model A	1930	20 – 22
Gwynne 8	1923	44 – 46
Humber 8	1924	38 – 40
Singer Junior	1930	40 – 45
Sunbeam 25	1930	12 – 17
Vauxhall 14/40	1925	22 - 24

Discipline (2021/22) *Pomeroy 2020	Pessimistic Average mpg: Number of Meetings Each Year	Competitive Miles (Avg) / Competitor (incl. practice)	Expected MPG Minus Corrections Advice From VSCC Competitions Section – with extra pessimistic correction for heavy throttle events.	Avg Number of 2021 Entries	[Tree-V admin fee included] -> Avg tCO ₂ per event	<- Estimated Additional Cost £ per entry at 400% recovery
Race Mtg	10: 4	29.4 (= 4 races)	10 from the lower figur.	163	6.125	£2.77
Pomeroy*	10: 1	36.0	10 from the lower figur.	114	5.245	£3.39
Hill Climb	10: 8	2.90	10 from the lower figur.	134	0.497	£0.27
Speed Trial	10: 1	2.00	10 from the lower figur.	112	0.286	£0.19
Trials	20: 7	65.0	Use the lower figure	83	3.447	£3.06
Auto Solo	15: 2	1.0	5 from the lower figure	36	0.031	£0.06
Driving Test	15: 3	1.5	5 from the lower figure	57	0.073	£0.09
Rally	20: 2	74.0	Use the lower figure	28	1.324	£3.48
Tour	25: 6	90.0	Use the higher figure	33	1.518	£3.39

Appendix 4

The Sub-Committee, External Expert & Potential Partner Consultations, and Other Inputs

The sub-committee includes an academic with specialist knowledge on the management implications of ecologically sustainable development, the Head of Sustainability for a global aviation support company and the Managing Director of a technology intensive engineering and consultancy SME. The report benefits from the input of five external experts, whose opinions were sought on various aspects. The advice received from each was never contradictory; they were independently all in agreement.

Stephen Andrews (Chair, Overview and Scrutiny Committee, Cotswold District Council whose brother-in-law is a Former President of the VSCC and who has a strong professional background in North and East African emerging economy policy development and implementation). Regarding the role the VSCC can play in leading sustainability initiatives in the vintage car industry, the requirement for the VSCC to be able to explicitly verify its claims and justify its approach to net zero, and the comparative strengths and weaknesses associated with tree planting, peat restoration and emerging economy clean development schemes.

Jonathan Brunyee (Farm-Ed at Shipton-Under-Wychwood, a former Nuffield Fellow who specialises in regenerative agriculture and advises the farming community on this subject. He also has his own farm that uses this approach to food production). Regarding farming and woodland developments in the area surround Chipping Norton (the present location of the VSCC HQ), the challenges of choosing carbon offset schemes that are verifiably effective, and the differences in – and timeliness of – the potential impact of international clean development schemes, as compared with UK planting schemes.

Guy Lachlan (Classic Oils at Bicester Heritage, who established the first carbon offset scheme from private aircraft in the UK). Regarding Net-Hero in particular, differences among car emissions calculators, the public opinion of vintage cars, the problems of accurately quantifying the effects of carbon offset schemes, and the vital importance of VSCC's leadership in what is "the central issue of concern for the classic car industry."

Ian Roderick (Director of the Schumacher Institute in Bristol who also has his own long-standing Gold Standard carbon offset scheme). Regarding international standards for assessing the effectiveness of carbon offsetting schemes, the challenges of achieving immediate impact on global warming from these schemes, the limitations of tree planting as a means to achieve net zero emissions, and suitable levels of over-recovery to ensure not simply carbon neutral but genuinely regenerative contributions.

Wm. Andrew Schwartz (Co-Founder of the Institute for Ecological Civilization, a leading American think tank based in San Diego CA, whose Directors have an enviable track record in galvanising the contemporary American green movement and the thinking behind the so-called 'New Green Deal'). Regarding the challenges we face in moving to an ecologically-focused, as opposed to economically-focused society, and the problems and complexities associated with achieving net zero emissions.

The report also benefits from sometimes lengthy and always very supportive conversations with Tree-V, the Federation of British Historic Vehicle Clubs, clear.eco, BP and WEX-Esso. Again, there was no discernible disagreement among any of them on their understanding of the problems, or the principles, regarding the achievement of carbon neutral / net zero. Lastly the report benefits from the input of a number of Club staff, including the Club Accountant, the Competition Administrator, the Competitions Secretary and the volunteer members of the Library.