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# Green light or black flag? Greenwashing environmental sustainability in Formula One and Formula E

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## ABSTRACT

Historically, Formula One motor racing has had a deleterious environmental impact: burning fossil fuels, the wanton waste of resources while producing a complex global carbon footprint. However, as global concerns and expectations have escalated around environmental sustainability, Formula One has advanced what is largely superficial and deceitful 'green' credentials via perfunctory hybrid technologies and promulgating piecemeal sustainability strategies. In doing so, Formula One harnessed the considerable symbolic power of its global brand to popularise a largely superficial approach to sustainability, while focusing on its own global expansion and growth. Formula E is similarly premised on purportedly more sustainable 'green' technologies. Nonetheless, the sport's environmental credentials are also contestable, due to its constitutive partnerships with high-tariff environmental polluters, as well as the efficiency of the electric and battery technologies that it promotes. Via greenwashing rhetoric and practices, this article explores the symbolic power both sports espouse through notions of sustainability.

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## Introduction

Across contemporary sport and leisure, increased attention is being paid to environmental sustainability. However, many initiatives enacted by sport and leisure organizations tend to be performative and perfunctory; grandiose claims and slick marketing campaigns celebrate the promise, if not the likelihood, of realizing positive environmental impacts through organizational change. Motorsport, specifically the FIA Formula One World Championship (henceforth, Formula One) and the ABB FIA Formula E World Championship (henceforth, Formula E), have become synonymous with promulgating sustainability initiatives and innovations that are spectacular in their presentation, but

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questionable in their impact. Formula One deploys tactics that promote hybrid technologies, biofuels and other transformations to events, yet these are largely undercut by the organization's failure to address its substantial global carbon footprint and ongoing environmental impacts meaningfully. As such, Formula One has been rightly accused of adopting greenwashing strategies as a means of symbolically (not materially) redressing the vast levels of non-renewable energy use in the sport's structure, delivery and experience and the equally problematic levels of carbon generated thereby.

By comparison, as a sport founded on sustainability initiatives centred on the development of electronic cars, battery technologies and forging strategic environmental partnerships, Formula E would appear more meaningful and better intended. Nevertheless, it also exhibits significant greenwashing tendencies. Although presented as the environmentally sensitive variant (and perhaps future) of elite motorsport, Formula E's sustainable credentials are called into question as a result of the questionable efficiency of its technological innovations; its reliance on car manufacturers (themselves high-tariff polluters) and its large carbon footprint as a global series (travelling to 17 individual races across 13 countries in 2023–2024). As such—and arguably despite the wishes of many adherents—Formula E exhibits more similarities with Formula One than one would expect. Both global motor racing series, albeit in differing ways and intensities, can be accused of fulfilling environmentally sensitive marketing objectives, rather than fostering meaningful, positive environmental change. With an explicit focus on the greenwashing tactics of Formula One and Formula E, our discussion offers a critical examination of the power relations underpinning sport organizations' instantiation of what are inherently contradictory approaches to environmental sustainability.

## **Sustainability, leisure and power**

In environmental terms, the early 2000s could be described as a conjunctural moment (Clarke 2010): what became a highly politicized struggle of positions between those deeply concerned with the impacts of human-generated (anthropogenic) environmental change and those who denied its very existence. Over recent times, the preponderance of catastrophic climactic events (devastating heatwaves, fires, droughts and floods) has almost resolved the environmental struggle, leaving only the most intractable reactionaries seemingly willing to refute the derivation of the planetary destruction we are already witnessing (Jylhä, Strimling, and Rydgren 2020). Indeed, as a prime example of climate change, Gaiand (2016) observes that within six decades, few world cities will be cool enough to host summer sports safely.

In the wake of what has become ever more acute public sensitivity to environmental concerns and futures—and as has been well established within the academic literature (see Cury, Kennelly, and Howes 2023; Dingle and Mallen 2021; McCullough and Kellison 2018; Millington and Darnell 2020; Svensson et al. 2023) – environmental sustainability has taken on increasing importance within leisure organizations, delivery and experiences. Nevertheless, precisely what sustainability means for the leisure industry remains vexed (Evers 2019, 2023; Johnson, Everingham, and Everingham 2022; O'Connor et al. 2022; Smith and Mair 2022; Tirone and Halpenny 2017). For sectors of the leisure industry not directly engaged in the stewardship of the natural environment (i.e. adventure tourism, surfing and skiing), an increased sensitivity to sustainability is often allied to

'the potential environmental threat posed by the continued and unmanaged economic growth and development of sport, tourism and leisure' (Mansfield and Wheaton 2011, 383). Conversely, within high-profile sport, sustainability strategies are routinely touted as an unavoidable prerequisite for future growth and development. Therein lies the contradiction at the core of our analysis.

Sustainable aspirational terms are often promulgated as necessary for positive change in planning prominent sport events and competitions (Gammelsæter and Loland 2023). However, the future envisioned by sport administrators as they enthusiastically advance their purportedly green sustainable strategies (i.e. those related to carbon neutrality, landfill reduction and natural resource conservation) is routinely one in which these strategies are positioned as prerequisites not only for ensuring future planetary health and well-being but also crucially, the continued growth and development of the sporting entity. Thus, strategic efforts towards lessening the environmental impacts of human activity (i.e. those related to emission reduction, biodiversity preservation and water wastage) are often contradicted by policies that perpetuate environmental degradation (Evers 2023) and/or reinforce a dependence on climate-changing fossil fuels (Millington et al. 2022). This economic-environmental contradiction speaks to Han's (2021) notion of capitalism's 'death drive': the seemingly irreversible—even in the face of impending ecological catastrophe—impulses of capitalism towards unrelenting growth leading to the inevitable self-destruction of the capitalist system and, indeed, planet. The nostrum that growth is good and even essential is taken as read.

Elements of many high-profile sports and entities have been reconfigured according to the prescient concerns of increased ecological sensitivity. However, the accompanying celebration of sport as part of the broader climate solution is highly problematic (Warren 2020). Sustainability-driven changes incorporated into contemporary sport are often vociferous in their presentation yet limited in their impact (Johnson and Ali 2018). For example, the emphasis on recycled cardboard beds at the 2020 (2021) Tokyo Olympics and recycled plastic Nike playing kits and later dismantling Stadium 974 (composed of 974 shipping containers) at the Qatar 2022 FIFA World Cup are reflective of micro-level changes rather than fundamental structural transformations to address the systemic environmental contradictions inherent within global sport (Miller 2017). Moreover, the much-vaunted nature of these piecemeal sustainability strategies obfuscates an inherently problematic relationship with the environment. Compelled by growth logics to expand the number of sporting events, spectators, viewers and both direct and indirect forms of consumption, the global leisure/sport industry is thereby subject to transnational neoliberalism's contradictory and ultimately deleterious relationship with the environment, as well as being a net contributor to capitalism's accelerating 'death drive'.

### **Greenwashing, sport and power**

Within sporting settings, the aforementioned environmentally sensitive palliatives have been accused of being little more than examples of greenwashing: 'Popular usage of the term greenwash encompasses a range of communications that mislead people into adopting overly positive beliefs about an organization's *environmental performance, practices, or products*' (Lyon and Montgomery 2015, 225, *italics added*). Skey (2023, 752)

suggests such strategies are driven less by concealment or deception than ‘distraction and positive association’. To be sure, it is virtually impossible to discern the authorial intent of any architects of greenwashing, be they driven by deceit or distraction. However, there may be an alternative driver of such initiatives: well-intentioned, yet blinkered, capitalist ignorance. Goldman and Schurman (2000, 567) poignantly observe that ‘environmental degradation and resource exhaustion are being diagnosed as management problems rather than as a crisis or breakdown; this management exercise then becomes a new source of dynamism for capitalism’. The widespread, hegemonic adoption of superficial sustainability strategies and mantras within and through, sport, does nothing to disrupt the industry’s environmentally destructive impulses and further serves the overdetermining capitalist order.

As such, many corporations connect with sports in the hope of ameliorating their image via a faux environmentalism that seemingly will cleanse them in front of sports fans and help to elude democratic regulation. Gelles (2015) describes the process:

Greenwashing, when a company tries to portray itself as more environmentally minded than it actually is, has intensified in recent decades as consumers have warmed to sustainable and organic products and services. Brands, trying to capitalize on that trend, often try to outdo one another with eco-credentials. But in the rush to be seen as green, companies often exaggerate claims, or simply make things up.

These companies share putatively positive information about their environmental records, concealing the negative (Marquis, Toffel, and Zhou 2016), while seeking to promote themselves as good environmental citizens through an association with ‘sustainable’ sport. Of course, many sport/leisure organizations and activities themselves produce massive carbon footprints, by construction, maintenance, transport, energy, sanitation, water use and media coverage that further undercut any alleged environmental orientations (McCullough and Kellison 2018).

Whatever the motivation for greenwashing, the phenomenon exemplifies a non-governmental iteration of Clarke’s (2010, 341) ‘political-cultural work’. Informed largely by a Gramscian understanding of the contextual and fluid nature of power and power relations, Clarke’s understanding mirrors that of Viviani (2023, 150) specifically in regard to the notion of power ‘being something that is not possessed but exercised’ across a range of enmeshed cultural fields, including sport. Hence, within the pseudo-democratic, and ostensibly non-authoritarian, confines of contemporary neoliberal societies, power is not simply a matter of orchestrated and imposed domination. Rather, power is exercised within ‘political society through the public apparatus’, within economic society through the corporate apparatus and within ‘civil society through the private apparatus’ (Viviani 2023, 164). This suggestive notion illustrates how culturally (and economically) powerful organizations—such as Formula One—exercise the representational authority or power to inform public perceptions on a topic, particularly during times of a ‘heterogeneity of forces, antagonisms and contradictions’ (Clarke 2010, 341). Hence, as the climate crisis becomes ever more ensconced within public consciousness, many prominent sport organizations have involved themselves in strategic political-cultural work, particularly the adoption and advancement of carefully orchestrated forms of greenwashing to be publicly seen to resolve any potential contradictions and conjunctural schisms regarding their largely unresolved negative environmental impacts.

The governing body of motorsport, the Fédération Internationale de l'Automobile (FIA), possesses a sufficiently powerful cultural presence to exercise its authority in shaping public perceptions of the organization, specifically in terms of its environmental efforts and sustainability initiatives. As a recent announcement proudly proclaimed:

With the introduction of hybrid engines in Formula 1, the creation of Formula E (the world's first fully electric motor sport championship), ongoing research into environmentally friendly fuels, the establishment of the Environment and Sustainability Commission, and our adhesion to the United Nations Sport for Climate Action Framework, the FIA is committed to leading positive change on environmental issues. (Fédération Internationale de l'Automobile 2023, paragraph 1)

Despite the symbolic power of this type of 'political-cultural work' (Clarke 2010, 341)—and as with any attempt to establish a hegemonic position more broadly—the articulation of Formula 1/Formula E's positive environmental credentials was unavoidably subject to challenge, not least because of the enduring unsustainability of the organizations' conditions of material production. As Tranter and Lowes (2009, 163) assert 'though motorsport organizations might attempt to reframe their image as 'green' or environmentally friendly, it is difficult to disguise the direct, negative environmental impacts of the sport on energy use, local pollution, and greenhouse gas creation'. We will further probe Formula One's and Formula E's sustainability initiatives shortly.

Sporting bodies demonstrate their cultural power by articulating environmental credentials through high-production value, multi-platform promotions, which celebrate largely piecemeal (and, to all intents and purposes, ineffectual) approaches to environmental sustainability. Ironically, the seductive and normalizing capacities of this 'political-cultural work' (Clarke 2010, 341)—or perhaps more accurately in this case, cultural-political work—negatively contribute to environmental politics more broadly. When powerful corporate sport actors advance a 'portfolio of green solutions to maximize their symbolic rather than substantive performance' (Bowen 2014, 77), they effectively contribute to the normalization of a perspective that incorporates sustainability into existing patterns of growth and development, while glossing over the structural and systemic contradictions underpinning the relationship between the environment and leisure/sport. Thus, the global sport industry engages in the popular dissemination of what Blühdorn (2011, 45) labels a politics of 'sustained unsustainability', which acts as little more than an 'exercise of societal self-delusion' (43) when it comes to the efficacy of strategies designed to address impending planetary degradation. The numbers produced to justify motorsports' claims are capitalist classics: 'policy-based evidence' masquerading as 'evidence-based policy' (Marmot 2004).

Importantly, this flexing of global motorsports' economic, political and cultural power invokes Barry's (2012, 7) condemnation of the environmentally indifferent power elite, in that those organizations patently benefiting from 'unsustainability (which is the exploitation of people and planet), are willing to do everything to realize sustainability' except discontinue their unsustainable *modus operandi*. Such are the contradictions of motorsport organizations' strategic attempts to resolve—through exercising their cultural authority—what are inherent and on-going environmental contradictions. Poignantly, Chen's (2023) analysis of the Dakar Rally in South America points to the intertwining of transnational capitalism and ecological imperialism as such an 'unsustainable' and exploitative

relationship. In Chen's (2023, 1255) terms, global motorsport organizations speak to the complexities of contemporary transnational power relations, which transcend the 'simple dichotomies of European/South American, or the West/East, and instead, might be more accurately described as transnational power coupled with internal (local) power structures to make the global project operational and viable'.

Accordingly, Chen (2023) frames the Dakar Rally as tinged with European colonial hubris, extracting ecological resources from the Global South to benefit transnational capital, all the while being met with pockets of localized resistance to these perceived environmental injustices. Similarly, steeped in European origins and alleged gravitas, Formula One offers a global template of the 'technological sublime' (Miller 2017) which, through its commercialized and mediated spectacle, greenwashes its own global environmental destruction as it exudes a corporatized and techno-futuristic vision of transnational motorsport. Formula One's seductive and symbolic power exhibits real ecological consequences in its various race locales and via its long-standing unsustainable history with the extractives industry, as we shall examine in more detail.

### **Formula one's 'green' global ambitions**

As the premier FIA single-seater series, Formula One has operated internationally since its inception in 1950, involving drivers, teams and events from various regions of the globe (Naess and Chadwick 2023). However, under the leadership of Bernie Ecclestone in the 1980s and 1990s, the series was transformed into the elite spectacle of motorsport it is known as today: a mixture of speed, performance, technology, glamour and corporate entertainment (Sturm 2014). The most recent changes to Formula One followed its takeover in 2017 by the Liberty Media Group, which deployed a strategy aimed at furthering geographical and commercial growth through intensified engagement with current fans and aggressive nurturing of spectator markets in previously untapped countries and regions (Bustad and Andrews 2023).

This colonizing approach has been realized through additional events and corporate marketing efforts in 'key growth markets' (Dewhirst 2023). These include the United States (Miami joining in 2022 and Las Vegas in 2023) and the Middle East (races starting in Bahrain [2004], Abu Dhabi [2009], Qatar [2021] and Saudi Arabia [2021]). Following an economic downturn due to the COVID-19 pandemic, the strategy seems to have been effective. Formula One revenues increased from \$2.136B to \$2.573B from 2021 to 2022, with operating income increasing from \$40M to \$173M; these results were, in part, due to an 36% increase in total attendance from 2021 to 2022, and extended media and television deals with ESPN in the United States and other regional providers in Latin America (Brown 2023).

### **Formula One, sustainability and ecological destruction**

As Formula One sought to continue to expand its global popularity and commercial appeal, the series also developed an increased focus on sustainability, building on earlier statements from the FIA regarding the role and responsibility of motorsport in environmental research and implementation (Dingle 2009). Historically, however, garnering either team buy-in or media interest for sustainability initiatives had been problematic for Formula One.

Former FIA president Max Mosley noted that while various FIA road-safety measures were invested in and adopted by international governmental agencies, attempts to reduce sulphur levels in fuel, as well as efforts by the FIA to make Formula One carbon-neutral in 1995 (in conjunction with Edinburgh University) generated no media interest at the time (Mosley 2015). Instead, later publicity would focus on Formula One's acquisition of forests in Mexico in 2014 as perceived efforts to offset carbon emissions (Saward 2009).

Additionally, in 2007, Honda provided an 'earth dream' inspired livery of planet earth on a black space background devoid of any notable sponsorship. This was allegedly done to raise awareness of environmental issues, with team boss Nick Fry reportedly stating

Climate change is probably the single biggest issue facing the global community and F1 is not immune from it. On the contrary, we believe that F1 with its huge global profile and cutting edge technology can play an important role in not only highlighting the issues but also playing our part in developing solutions. (Eurosport 2007, para. 5)

Nevertheless, the purportedly 'green' objectives underpinning this approach were largely lampooned by Formula One fans, insiders and the press, who cynically pondered whether Honda's new environmental focus was designed to divert attention from the exit of former tobacco sponsors (Saward 2009). Despite allegedly 70,000 people pledging £98,000 to environmental charities via the website [www.myeearthdream.com](http://www.myeearthdream.com), prominently displayed on the 2007 car (Rodgers 2020), Formula One as an environmental platform continued to be critiqued due to its large global carbon footprint and other ecological excesses (Tranter and Lowe 2009). Honda also faced ridicule for its livery, dire on-track performances and leaving the sport at the end of 2008 (Rodgers 2020).

Overall, there appears to have been a broader reluctance towards environmental measures that were largely instigated due to external forces. For example, in 2013, Nick Nuttall of the UN Environment Programme warned that the FIA needed to make motorsport more sustainable or face regulations that would impose this (Allen 2014). Equally, Formula One faced pressures from manufacturers and sponsors seeking to demonstrate their 'green' credentials, with Mosley (2015) noting that energy-efficient fuel systems first proposed in 2006 were grudgingly accepted by teams in 2014 (as were other FIA-energy recovery systems in 2009), primarily due to corporate-sustainability expectations.

In 2019, the series announced its 'first-ever sustainability strategy', including an overall 'ambitious target to be a net zero carbon sport by 2030'. The opening statement of this report from then-CEO Chase Carey emphasized the sport's historical record of 'technologies and innovations that have positively contributed to society and helped to combat carbon emissions' and the potential for a net-zero carbon hybrid power unit (*Formula 1* 2019). Furthermore, this initial plan indicated sustainability policies and measures that would be implemented in various dimensions of the sport both on and off the track (Öztopcu 2023). We will return to some of these initiatives shortly.

Reminiscent of Clarke's (2010, 341) 'political-cultural work', Formula One's initiatives and Carey's statements seemingly evoke a retrospective greenwashing that speaks disingenuously to Formula One's 'green' past, while connoting an even 'greener' future. Specifically, this rhetoric contextually ignores the deleterious history of environmental destruction, waste and excess that has become inextricably associated with the sport. Notably, and in terms of compromising biodiversity, Formula One events often impinge

upon, if they do not destroy, local birdlife, waterways, trees and greenspaces within host locations (Tranter and Lowes 2009). A prime example has been the staging of the Australian Grand Prix since 1996 in Albert Park, a historic public park in Melbourne. Dispensing with a range of environmental and planning laws in the process, this event negatively impacts upon the ecosystem and detracts from public use of a green space for approximately three months each year (Lowes 2004). Similar ecological concerns have been raised for other events. The short-lived Korean Grand Prix required clearing 1000 acres of rice paddies in the rural, remote and relatively poor South Jeolla Province, while concerns have been raised due to potential damage to sand dunes at the Dutch Grand Prix at the Circuit Zandvoort, situated close to the North Sea coast. Additionally, despite securing a contract with Formula One, plans to destroy a native forest in Rio de Janeiro for a new track were abandoned in 2021 due to widespread criticism (Sturm 2023). Therefore, while Formula One's recent sustainability initiatives and pronouncements (described below) may project an attempt to improve upon, if not counter, some of these environment impacts, persistent issues remain.

### **Formula One's sustainability initiatives**

Currently, Formula One's overarching strategical sustainability framework is predicated on two separate initiatives that concentrate on streamlining on- or off-track components of the series. Hence the 'Countdown to Zero' involves on-track operations, such as alterations to the design, fuel systems and power units of the cars, as well as innovations to operations, logistics and travel by teams and materials. Meanwhile, the 'Positive Race Print' strategy encompasses off-track operations, focused on enhancing the legacy of events for host cities through reduced waste, increased low-carbon travel initiatives and efforts towards biodiversity and community engagement (*Formula 1* 2019). Specifically, some implementations have included redesigned team motorhomes in 2022 for spatial and energy efficiency, having host nations track sustainability data and the promotion of public transportation usage or reusable water bottles by teams and fans (L. Smith 2023). Moreover, sustainable bio-fuels and carbon-alternative variations, which will allegedly provide a potential 'drop-in' application for road cars (Dyson 2023) are also being refined for new power-unit regulations that will apply from 2026 (*Formula 1* 2022).

Problematic questions persist over the suitability, validity and applicability of these technologies and fuels, both for mass road-car use and the future of motorsport (O'Shea, Perry, and Duffy 2020). Greenpeace political scientist Benjamin Stephan asserts that Formula One's sustainability transformations are superficial, cosmetic and mere greenwashing. Specifically, Stephan suggests that Formula One's approach to mobility is backwards rather than revolutionary, noting

Combustion engines, even if they become a bit more efficient in Formula 1, are out of date. Synthetic and biofuels are not a solution because they are inefficient and too expensive ... In the current transformation, Formula 1 is decoupling itself from the rest of the world. (*Grand-prix* 2023, para. 7–8)

Arguably, therefore, Formula One is initiating largely symbolic solutions that are out of step with contemporary sustainability pathways. Instead, Formula One is seemingly promoting empty corporate social responsibility (CSR) campaigns based around slick slogans and

public relation opportunities for its corporate partners, such as big oil companies (whom we will interrogate shortly) to promulgate their often-dubious green credentials.

### **Challenges and contradictions**

A broader environmental challenge is posed by the travel and transportation involved in the racing calendar. The scale and scope of the competition result in an expansive carbon footprint, even in comparison to other major and international sport competitions. For example, the 2019 sustainability plan indicated that Formula One generated approximately 256,000 tonnes of CO<sub>2</sub> each year, compared to 31,842 tonnes for the National Basketball Association and 1430 tonnes for the National Hockey League (Singliarova 2023). Hence, while some of the aforementioned measures may demonstrate efforts to incorporate sustainability across the gamut of Formula One's operations and mitigate some of their associated ecological impacts (Öztopcu 2023), there remains an imbalance in regard to the sport's larger environmental effects: international travel by administrators, sponsors, media, drivers and, perhaps most impactfully, the legions of fans who attend races.

According to Bustad and Andrews (2023, 613),

F1 has been actively seeking to develop and implement initiatives aimed at addressing issues of sustainability across the sport, including the operations of teams, events, and the regulation of hybrid technologies in the cars themselves. Yet these measures do less in engaging with the overwhelming source of the majority of carbon emissions – and therefore ecological impact – of an annual season of racing across countries and continents.

Referring to Formula One's sustainability report from 2018, Bustad and Andrews (2023) observed that 27.7% of the CO<sub>2</sub> emissions for that season came from business travel, 45% from transportation of teams and equipment, while the 'event operations' CO<sub>2</sub> emissions (e.g. from circuit energy use, broadcasting and hospitality) totalled 7.3% and the Formula One cars just 0.7% (see also O'Shea, Perry, and Duffy 2020).

Further compounding this issue are ambitions to continue expanding the global calendar, which has progressively risen from approximately 16 races in the 1990s to 24 in 2024, while Formula One has a stipulated calendar goal of 25 races (Dewhurst 2023). Future schedules envision approximately a third of races in Europe, with 'heritage' races (including the Monaco, Silverstone, Spa-Francorchamps and Monza circuits) essentially protected. The remainder of the schedule would provide flexibility, allowing for potential expansion to various other cities and nations. A shift to regionalization or clustering the race calendar is also being discussed as an attempt to maximize transportation resources and minimize globe-trotting across continents and nations. Nevertheless, this remains haphazard, as evidenced by the less-than-ideal 2023 calendar (L. Smith 2023), while Greenpeace's Stephan highlights the lack of a regionalization plan for 2024 as another exemplar of Formula One's greenwashing (*Grandprix* 2023).

### **Formula one and greenwashing**

A primary contradiction remains at the core of Formula One's twin imperatives: on the one hand, a strategy of sustainability seeks to realize and produce a 'zero carbon sport' by 2030; and on the other hand, the sporting and commercial structure is designed to

expand its global reach. Such a move would see further involvement of multinational corporate sponsors, potentially more global car manufacturers, teams and drivers and an increased number of fans attending an increased number of races across a variety of international locations. The pitfalls of sustainability in Formula One thus demonstrate a contradiction between the forms and sources of carbon emissions that are being directly addressed by the series and its teams, and the actual majority of the carbon emissions produced through the sport's global operation.

Therefore, seemingly evoking Clarke's (2010, 341) 'political-cultural work', while Formula One's recent sustainability efforts may project an attempt to improve upon, if not move away from, some of these specific environmental issues and impacts, arguably these have simply been directed to another set of problems and contradictions. Formula One has been proactive in 'hybrid technologies' since the 2010s through a range of innovations related to engine and car design and the use of biofuels (Öztopcu 2023). However, as a form of greenwashing, Formula One selectively discloses its purportedly environmentally positive developments, while concealing, deflecting or downplaying more significant issues around travel and transport. Fundamentally, Sturm (2023, 171) asserts, Formula One is 'espousing greenwashing rhetoric that ignores the environmental impact and ecological incongruity of global travel, transport, motorsport and car cultures'.

Formula One's prominent historical and contemporary association with a range of oil, petroleum and other extractive industries, as well as airline, cellphone and car manufacturers, belies the environmental harm inflicted by such partners and sponsors as significant global polluters (Chen 2023). Indeed, despite (or perhaps more accurately, because of) Formula One's allegedly 'greener' sustainability initiatives, many oil companies are being repositioned as significant partners 'driving' a sustainability focus on biofuels to help the sport achieve its specified 'zero-carbon' 2030 goals. Thus, companies, such as Shell (Ferrari), Petronas and INEOS (both Mercedes), are innovation and technical partners, despite having been accused of deleterious environmental impacts and ecological damage (Millington et al. 2022). Most recently, the Saudi Arabian Oil Group, Aramco, became a 'sustainability partner' with Formula One in a 10-year deal valued at an estimated \$450 m (Rayman 2023). Subsequently, Aramco can symbolically greenwash and sportswash through the prominence, prestige and public relations platform of Formula One.

The overt oxymoron of some of the world's most significant global polluters now proclaiming sustainability expertise, while brandishing allegedly green credentials and environmental solutions, points to broader empty CSR campaigns that aim to generate positive publicity but fail to usher in meaningful sustainability initiatives (Miller et al. 2023). In this vein, Aramco can bolster and self-promote via empty CSR rhetoric due to 'Formula One seemingly engaging in virtue signalling and moral grandstanding without meaningfully tackling any of these issues or enacting any real change' (Sturm 2023, 177).

Following Dyson (2023, para. 14), the current strategy features 'initiatives around racing fuel and the events [that] are the most visible and eye-catching' yet, given the limited impact of these measures in comparison to the 'immense logistics operation' of the sport, 'question marks are likely to persist' into the future regarding the net zero-carbon goal by 2030. It remains to be seen, then, what type of global environmental impacts might be signalled by the series tagline that accompanied the initial sustainability strategy in 2019: 'Unleash the Greatest Racing Spectacle on the Planet' (*Formula 1* 2019).

Intriguingly, Formula One's initiatives have been circumscribed in terms of their scope, impact and global recognition, in part, due to the emergence of Formula E.

### **Formula E: the future of sustainable motorsport?**

Created in 2014, Formula E is a global motor-racing series that promotes sustainable forms of mobility through electronic car-racing. Formula E has been devised as an alternative and futuristic vision of motorsport rather than a direct rival to Formula One (Sturm 2018). The series is premised on 'green' technologies, deploying battery packs and hybrid technologies to underpin the race action on offer, while claiming to revolve around the four pillars of energy, environment, education and entertainment (Ross, Pfahl, and Trendafilova 2024). Significantly, Formula E has an exclusive licence as the premier all-electronic racing car series with the FIA for 25 seasons (Kalinauckas 2018), allowing Formula E to pursue electric sustainability innovations. This limits the advancement of electric motorsport competition (e.g. what Formula One is permitted to do), while making the sport attractive to global car manufacturers via new electric-car technologies (Næss and Tjønndal 2021).

#### ***Formula E and sustainability***

Specifically designed as one of the world's first eco-friendly motorsport series, Formula E proclaimed in 2017 that it would provide a 'unique fusion of entertainment, sustainability, technology and innovation. We are fighting climate change by offering electric vehicles as a solution to air pollution in city centres and breaking down the barriers to the electric vehicle market' (Formula E 2017). The sport also entered into a global partnership with the UN Environment Programme in 2017 to improve inner-city air quality, profile alternative energy solutions and promote the increased uptake of electric vehicles as part of a broader anticipated global shift to hybrid transport technologies. Buttressing such perspectives, the Formula E sustainable development policy for 2022 explicitly states that, 'Formula E exists to accelerate sustainable human progress through the power of electric racing ... Formula E was founded to counteract climate change by accelerating the adoption of electric vehicles', while also suggesting that the series offers 'an unparalleled proving ground for race-to-road electric vehicle and sustainable mobility technologies' (Formula E 2022b).

Nevertheless, seemingly reflective of Clarke's (2010, 341) 'political-cultural work', while Formula E projects its sustainability credentials via certifications (e.g. ISO20121), awards (e.g. 2022 Global Sustainability Benchmark in Sports), achievements (meeting 10 of the 17 UN sustainability goals) and global partnerships on environmental and societal projects (e.g. UN and UNICEF), challenges to these 'green' credentials persist.

Formula E strives to initiate change by providing zero emissions, using recycled tyres and reducing its carbon footprint at events, while often freighting equipment by sea and road. Events tend to be clustered in global locations to achieve this, albeit not always coherently, as was evidenced by Season 8 in 2022 requiring return trips to both Asia and the US for separate races. Thus, while Formula E proudly proclaims itself as the 'only sport to be certified net zero carbon since inception' (Formula E 2022a), like Formula One, travel and transportation remain an issue, accounting for 73% of Formula E's carbon emissions in 2022 (Formula E 2022a).

## **Formula E events and greenwashing**

The majority of Formula E events are run within inner-city locations to showcase technologies and innovations afforded by the electric cars, as well as to draw focus to public transportation, waste initiatives and other sustainability-infused opportunities and promotions. However, despite achieving ISO20121 certification for event sustainability practices since 2018 (Naess 2021), there has been a question of how 'green' Formula E really is. While electric cars may be relatively quiet, converting the event into spectacles amplifies noise pollution via blaring PA systems and helicopters filming, not to mention the noisy and disruptive infrastructure demands associated with creating temporary city-based circuits (Sturm 2018). We will examine this further via the series' London races.

Poignantly, Robeers and Van Den Bulck (2018, 347) observed that 'the Formula E website does not properly indicate whether the much-reduced carbon footprint from race cars outweighs the extra emissions from building temporary race tracks in cities as opposed to using existing race tracks', with concerns cited around the impacts on host locations. Therefore, perhaps unsurprisingly, a criticism of Formula E is the need to shut down parts of the city to stage races (often in a lengthy and disruptive fashion), with calls to reconsider using existing permanent racetracks (e.g. like Mexico City) or stadium-style locations (e.g. Seoul and London). The proposed or existing Formula E events have been cancelled in Brussels, Hyderabad, Montreal, Moscow, Paris, Rio de Janeiro and Vancouver due to costs, disruptions and/or the prohibitive dimension of requiring street races (Schrader 2017).

Robeers and Van Den Bulck (2018) question whether the total ecological impact of Formula E has been considered or presented, notably as significant issues and protests have emerged throughout the history of Formula E. In the United States, the Miami contract was terminated after season one despite a five-year deal. A lack of disclosure or explanation shrouded the event's demise although alleged environmental concerns, including needing to tarmac over 'green' spaces around the Biscayne Boulevard waterfront, alongside an approximately US\$2m cost, were raised. Sturm (2018, 150) observes

Negative press coverage and public opposition questioned the 'green' credentials of an event needing to transform and replace a green space. Moreover, rather than promoting green events and sustainable practices, it appeared that Formula E was being used primarily for image-building and as a beautification project within the Miami area.

Additionally, in Europe, an allegedly 'friendly' environmental protest caused an estimated \$400,000 in damages and vandalism when 1000 protesters cycled through the Bern circuit two days prior to the 2019 event to highlight its increased transportation demands around logistics and for spectators (Swissinfo 2019). The Bern event has not returned, while in 2023, climate-change protesters disrupted the start of the Berlin e-prix by sitting in front of cars and attempting to glue themselves to the track (S. Smith 2023b).

Arguably the most ecologically destructive Formula E event occurred in London in 2015 and 2016. Hosting Formula E required shutting down and modifying parts of the heritage-protected Battersea Park, which was vehemently opposed by protest groups who cited a lack of initial consultation, as well as concerns around accessibility, usage, tranquillity and potential damage (A. Smith 2019). Focusing on the 2015 event, Sturm (2018, 149) surmises,

Despite Formula E paying £1m in compensation, of which the Council suggested £200,000 would go directly back into the park, as well as repaving some of the pathways, concerns were raised at the damage caused. Large machinery was needed within the park to erect barriers, spectator points, and to establish the track by widening carriageways. Additionally, thousands of concrete barriers and fences were transported to and from the park. As such, the installation was a noisy and disruptive affair which, (un)surprisingly, also transformed previous green areas into tarmac. Opponents suggested that such processes transformed a conservation area into a construction site.

Due to these disruptions, damages, and closures, an even more vociferous and litigious public response would ensure the 2016 event was the last at Battersea Park.

### ***Formula E and 'greenfluencing'***

Formula E also targets relationships with global 'smart' cities to spread its sustainability message. Where possible, events have been staged in major cities, such as Berlin, Buenos Aires, Hong Kong, Hyderabad, Jakarta, London, Mexico City, New York, Paris, Rome, Santiago, Sao Paulo and Seoul, often in central city locations. Ironically, Formula E first commenced in Beijing in 2014, the world's most polluted city at the time (Robeers 2019). Furthermore, Luerdi (2023) notes the city-branding opportunities that Formula E afforded Jakarta for 2022 and 2023, and questions whether this truly reflected a commitment to sustainable climate change. In a similar vein, Formula E entered into a 10-year race deal with Saudi Arabia from 2018, allegedly to showcase the benefits of renewable energy and sustainable electric vehicles in an oil-dependent, wealthy nation, while arguably further contributing to global forms of sportswashing (Dewhirst 2023; Skey 2023). Fundamentally, with Formula E visiting some of the world's worst polluting nations and major oil-dependent states, the perceived benefit of linking with 'smart' global cities (and transnational car manufacturers) remains highly contentious, given their roles as high-tariff environmental polluters (Miller et al. 2023).

Conversely, as an enactment of Clarke's (2010, 341) 'political-cultural work', the counterargument could be made that this enables Formula E to extol its 'green' electric credentials and expound its sustainability messages via 'greenfluencing' (Næss 2020; Robeers 2019). For example, in their analysis of the Zurich e-prix in 2018, Bjerke and Naess (2021) extrapolate that Formula E events attempt to co-create experiences that are futuristic, inclusive and point to innovations and technologies around sustainability initiatives. Creating a festival-like atmosphere, green elements are purportedly infused within event programming and influence the activities on offer rather than proffering a lecture (Bjerke and Naess 2021). Formula E's 'greenfluencing' approach potentially educates, entertains and challenges its audiences in a manner distinctive from traditional motorsport (Næss and Tjønndal 2021).

Formula E targets young, 'tech-savvy' audiences. Described by Hahm (2023, 257) 'as an eco-friendly motorsport event and a platform for showcasing innovative digital technology', many innovations and digitized gamifications have been created to promote the sport, notably via eSports or FanBoost, which allows for interactive fan voting to provide extra power to select cars and drivers (Finn 2021). By involving notable global partners and activist groups, such as the UN, UNICEF and Greenpeace, these technological innovations and sustainability initiatives serve to underscore Formula E alleged 'greenfluencing' (Næss 2020).

Nevertheless, concerns have been raised as to whether Formula E's 'greenfluencing' initiatives are primarily for marketing and promotional purposes rather than green values (Ross, Pfahl, and Trendafilova 2024). For example, while an influx of major car manufacturers intimates at Formula E's elevated significance and legitimacy in motorsport, arguably many entered purely as a public relations exercise. 'Diesel-gate', the Volkswagen emissions scandal in 2015, resulted in the automobile industry needing positive publicity because Volkswagen had falsified low-emission reports for an estimated 10 million vehicles (Robeers 2019). Seeking to redeem its tarnished reputation, Volkswagen entered its subsidiary brands, Audi and Porsche, into Formula E, while an array of other global manufacturers aligned with electric racing and 'green' road car developments to promulgate their allegedly environmentally conscious endeavours (Sturm 2018).

While Formula E has attracted significant car manufacturers and brands, many have subsequently exited. For example, Audi, BMW and Mercedes left in 2022, with S. Smith (2023a, para.18) noting that 'big guns Porsche, Nissan and Jaguar are all concerned about where the championship is heading and what return on investment they will get from it'. Additionally, Hahm (2023) points to the significance of the visceral and sonic sensory experiences of loud and fast cars for motorsport fans, with silent and slow cars remaining a systemic issue for Formula E. The series fails to generate large in-situ or television audiences, attracting poor attendance figures at some events and a global television audience of 216 m for 2022 (S. Smith 2023a), approximately half that of Formula One. Moreover, while Ross, Pfahl and Trendafilova (2024, 3) observe that 'environmental issues and global sustainability efforts facilitated the idea of Formula E and are at the core of its strategic planning', they also note inconsistencies to the format and content of its annual reports. Therefore, despite Formula E perceivably offering good public relations for sustainability, it remains inconsistent in disseminating these sustainability strategies and outcomes, while the associated costs and diminished audience interest has driven many manufacturers away to other series.

Finally, the 'green' credentials of Formula E's electric battery technology and its application to road cars have also been challenged. Former Formula One World Champion Sebastian Vettel, himself an outspoken advocate for environmental issues, allegedly asserted,

I don't understand the meaning behind [Formula E]. The battery technology that is being developed has nothing to do with the technology that a normal car could use. It is not good for the environment if the batteries are charged not with renewable energy but with fossil fuels. (Noble 2022, para. 5)

This point has been underscored by Formula One journalist Joe Saward, who stated that he had seen first-hand that diesel generators were being used to power batteries at the French e-prix in 2015 (Saward 2023), while also challenging both where the batteries come from and their effectiveness (Saward 2019). While perhaps attributable to Formula One insiders disparaging a 'rival' series, such criticisms disrupt the 'green' credentials of Formula E.

## Conclusion

Through our exploration of Formula One and Formula E, we have seen the enactment of the seductive and normalizing capacities of Clarke's (2010, 341) 'political-cultural work', in

which largely superficial and symbolic initiatives are proudly presented as sustainable environmental measures. Of course, these strategies are mostly perfunctory, affording promotional opportunities for both series to make grandiose claims and pronouncements without linking them to meaningful or transformative environmental policies. Shrouded within a history of environmental destruction, waste, and excess, Formula One has attempted to shift its premise, promises and projections towards more 'sustainable' practices. Thus, while purporting to champion sustainability initiatives in which buzzwords around 'maximizing logics', 'travel efficiency' and 'volume optimization' are promulgated, Formula One is using greenwashing rhetoric to account for what are negligible transformations, particularly in relation to its own mammoth carbon footprint (Sturm 2023). Notably, Formula One has implemented measures that stem some impacts of travel and transport while ironically pursuing the relentless global expansion of more races in more territories (Dewhurst 2023). Formula One's use of hybrid technologies also offers a convenient 'green' narrative with dubious industry implications and an uncertain future (O'Shea, Perry, and Duffy 2020).

In contradistinction, Formula E remains aspirational and seemingly well-intended in its orientation towards sustainable motor-racing, innovations and partnerships (Næss and Tjønnedal 2021; Ross, Pfahl, and Trendafilova 2024). However, its sustainability premise also remains vexed. Specifically, Formula E's electric and battery technologies are contestable, the series has failed to captivate or sustain large manufacturer or audience interest, and many of the event locations are the world's largest global polluters, affording potential greenwashing and/or sportswashing opportunities (Miller et al. 2023). Fundamentally, Formula E projects virtuous and altruistic 'forms of greenfluencing' that, arguably, promotes but does not necessarily enact real change in contemporary travel and transport issues for contemporary motorsport.

These orientations are indicative of a broader politics of 'sustained unsustainability' (Blühdorn 2011, 45) that ensnares organizations and industries within the illusory rhetorical end-game of proclaiming ambitious 'net-zero' goals, brandishing dubious green credentials and promoting environmentally-conscious ideals for predominantly capitalist-driven, as opposed to climate-driven, gains (all the while advancing incommensurate growth and development logics). The UN's High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities (2022, 12) has some sobering reflections in response: 'If greenwash premised upon low-quality net zero pledges is not addressed, it will undermine the efforts of genuine leaders, creating both confusion, cynicism and a failure to deliver urgent climate action'. Currently, a third of the world's largest two thousand companies claim commitments to net-zero emissions. Based on their current policies and programmes, 93% won't achieve that supposed goal (Accenture 2022).

High-profile forms of sport/leisure are not immune to accusations of, at best, environmentally irresponsible traits to, at worst, blatant greenwashing. Hence, major sports venues continue to generate excessive energy use and waste (McCullough and Kellison 2018); pollution and sewage remain rampant in nature-based activities such as surfing (Evers 2023); while ice hockey and golf are prone to excessive water and pesticide use (Johnson and Ali 2018; Millington and Darnell 2020). Executive and player travel also remains contentious, accounting for 61% of the English Premier League's carbon footprint, while clubs are regularly lambasted for often unnecessary 10–15-minute flights (Pereira, Filimonau, and Ribeiro 2019).

Per greenwashing, putative CSR generates new markets, massages labour, delivers positive public relations and heightens brand recognition. Problematically, sport/leisure organizations and their associated sponsors/partners appear to be locked in Han's (2021) notion of capitalism's 'death drive': focused on their own expansion and growth with little substantive environmental concern or action all the while recognizing the need to make reassuring sustainability pronouncements to placate the masses (Chen 2023). Such platitudes underpin the premise and potential of both Formula One and Formula E and highlight the pitfalls of their current sustainability smokescreen.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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