Yahli Kotler

Mrs.Furer

AP Seminar, B Period

9 Oct 2024

Word Count: 1,284

Formula 1's Impact on the Environment

According to Hannah Ritchie, a researcher at the Oxford Martin Programme in Global Development, and Max Roser, Programme Director of the Oxford Martin Programme in Global Development, "carbon dioxide emissions are the primary driver of global climate change" (Ritchie, Roser 2024). According to Formula One's 2019 impact report, the organization emitted 256,551 tons of carbon dioxide. The statistics showed that 45% of emissions came from logistics, 27.7% from business travel, 19.3% from facilities and factories, 7.3% from event operations, and 0.7% from the engines of the vehicles ("F1 2019 Impact Report" 2019). Since the release of this report, F1 has made significant changes to promote sustainability and reduce its carbon footprint, which has completely changed the sport and how it is viewed. Drivers and engineers have different opinions on the sport's changes and future. Formula 1, proving that it is capable of becoming fully sustainable, could considerably benefit the environment and help reduce climate change because other racing organizations would make similar changes. Overall, F1 harms the environment but is on the right path to becoming fully sustainable.

Formula 1 has made many changes in the past few years to reduce carbon emissions and become more sustainable. For instance, Stewart Mitchell, a technical researcher and engineering journalist, states, "Formula 1 introduced new fuel regulations for 2022, including a 10% ethanol fuel percentage" (Mitchell 2022). In relation to this, the Driving, Boating, and Transport sector

of the New South Wales government states, “E10 fuel can lower greenhouse gas and other emissions that cause serious health and environmental damage” (“E10 and the environment” 2021). As a result, F1 experienced a 13% decrease in carbon emissions by the beginning of the 2023 season (“Formula 1 2023 impact report” 2023). The fuel adjustment indicates a change made by F1, positively impacting the environment, which shows the organization staying proactive towards its cause. However, this change may not have been beneficial to the vehicles. Hywel Thomas, the engine chief for the Mercedes F1 team, talks about issues of using the E10 fuel: “The engine is going to react slightly differently to the fuel. Some areas of the performance we are really happy with, and other areas… honestly, we are less happy” (Thomas 2022). Although the changes may benefit the environment, he still believes that the fundamentals of the sport are essential and the engine’s efficiency is crucial to his team's success. In summary, Formula 1 has already made positive changes to reduce emissions and plans to become fully sustainable in the near future.

Formula 1 has plans to implement changes in the coming years that will completely change the dynamics of the sport and how it is viewed worldwide. To begin, Samarth Kanal, a staff writer for Formula 1, talks about the upcoming changes to the engines of the F1 cars: “The new F1 power units will run on fully sustainable fuels” (Kanal 2022). He then says that “in 2013, 160kg of fuel was used in a race; in 2020, that stood at 100kg; and in 2026 F1 is aiming for each car to use just 70kg of fuel during a Grand Prix” (Kanal 2022). In relation to this quote, Lucas Di Grassi, a former Formula 1 and Formula E driver turned journalist, talks about the increase in electrical power: “The electrical power output will almost triple from 120kW to 350kW…But it should be noted that the new V6 engines will be less efficient” (Di Grassi 2023). Formula 1 plans to make all of these changes to benefit the environment; however, they will compromise certain

aspects of performance. F1 is prioritizing the environment because it understands that the future of the sport relies heavily on the changes it makes today. Many F1 drivers support this approach. For example, Lewis Hamilton, a driver for the Mercedes F1 team, states, “In terms of the things that I’m doing in my life, I’m trying to make sure that I’m carbon neutral at the end of the year…I have a new smart electric (car) at home” (Medland 2019). On the other hand, when Max Verstappen, driver for the Red Bull F1 team, is asked the same topic, he responds, “I like fuel…I don’t like electric stuff” (Medland 2019). Although drivers have differing opinions on the future of the sport, ultimately, they will all have to accept the drive to sustainability as F1 already has plans for their future to ensure they do not harm the environment. However, there are still problems hindering the sport from reaching its goal of being sustainable.

Although Formula 1 has already addressed many issues regarding sustainability, there are still aspects that the sport must work on before being considered fully sustainable. This is evident in research done by Hope Ross, a student at the University of Strathclyde Glasgow, in which she calculates, “The estimated air freight emissions produced by F1 in 2019 [was] 77,414 tonne” (Ross 2020). Air travel is the primary source of carbon emissions for the F1 organization, and it has yet to address this problem which prevents it from reaching its goal. To further illustrate this, Jack Graham, a journalist for the Thomson Reuters Foundation, writes about a statement from Benjamin Stephan, a transport expert at Greenpeace Germany, in which he states, “He pointed out that in 2024 there are a record 24 grands prix, compared to 22 in 2023 and 16 when he first started watching as a child” (Graham 2023). Similarly, Madeline Coleman, a Staff Writer following Formula 1 for the New York Times, talks about how the sport must work on grouping the calendar better: “Although the sport said it wanted to better group the calendar regionally to reduce travel, the placement of the 23 races in 2023 slate is hardly mileage efficient. For

example, races in Azerbaijan and Miami are back-to-back, but nearly 7,000 miles apart" (Coleman 2023). F1 states they are working hard to benefit the environment, however what it has been doing seems counterproductive. One can see that F1 must make changes to reduce the distance teams must travel to deliver their equipment to each race, which would lower the total amount of carbon emissions. In a separate article, Madeline Coleman talks about another way that F1 could reduce its carbon footprint; she states, "Mercedes was the first global sports team to invest in it(Sustainable Aviation Fuel). The F1 team estimated that using SAF would reduce its personnel's air carbon footprint in half" (Coleman 2024). There is a way to reduce emissions; however, only one team has invested in it, which demonstrates how there is not enough attention within the organization towards this topic. The reader can see that F1 should invest in SAF to reduce its total carbon footprint. Therefore, it is evident that Formula 1 must continue to work on ways to lower carbon emissions regarding air travel.

Overall, Formula 1 is detrimental to the environment, but as of recently, it has been striving towards becoming fully sustainable, and it has work to do before reaching this goal. The changes that F1 has made and plans on making in the next few years prove they are being proactive towards their cause. However, to reach their goal, they must develop new fuels to reduce their travel emissions. Looking at the bigger picture, F1 must make these adjustments because it is just one of many racing organizations worldwide. If they prove it is possible to become fully sustainable, many other organizations will benefit from this as they would understand that they are capable of making similar changes. This would benefit the environment tremendously and could change the path in which the planet is currently heading.

Works Cited

Coleman, Madeline. “Can F1 Stay Fueled amid Climate Change? - Sports Illustrated.” *Sports Illustrated*, 21 Apr. 2023, www.si.com/formula1/2023/04/21/f1-stay-fueled-climate-change.

---. “How F1’S Sustainable Fuel Shift Powers Its Carbon Neutral Ambitions.” *The New York Times*, 13 Feb. 2024, www.nytimes.com/athletic/5270385/2024/02/13/f1-sustainable-fuels-carbon-neutral/.

Formula 1. *2023 FORMULA 1® IMPACT REPORT*. 2023.

---. “Mercedes Engine Chief Explains Why Move to E10 Fuel Demanded “Fundamental Relook” at Power Unit | Formula 1®.” *Formula 1® - the Official F1® Website*, 4 Feb. 2022, www.formula1.com/en/latest/article/mercedes-engine-chief-explains-why-move-to-e10-fuel-demanded-fundamental.5OoNDRlUajwImP6CnNpNvE.

Graham, Jack. “Can Gas-Guzzling Formula One Ever Go Green?” *Context.news*, Context, 23 Nov. 2023, www.context.news/net-zero/can-gas-guzzling-formula-one-ever-go-green#.

Kanal, Samarth. “7 Things You Need to Know about the 2026 F1 Engine Regulations | Formula 1®.” *Formula1.com*, 16 Aug. 2022, www.formula1.com/en/latest/article/more-efficient-less-fuel-and-carbon-net-zero-7-things-you-need-to-know-about.ZhtzvU3cPCv8QO7jtFxQR.

L, Jennifer. “The Race to Sustainability: Formula 1’S Carbon Footprint and Net Zero Pledge.” *Carbon Credits*, 16 Nov. 2023, carboncredits.com/the-race-to-sustainability-formula-1s-carbon-footprint-and-net-zero-pledge/.

Lucas di Grassi. “How F1’S Impending Engine Revamp Puts New Emphasis on Electrical Power.” *Motorsport.com*, Motorsport.com, 28 Nov. 2023, www.motorsport.com/f1/news/how-f1s-impending-engine-revamp-puts-new-emphasis-on-electrical-power/10553133/.

Medland, Chris. “Hamilton’s Climate Change Comments Open up F1 Debate.” *RACER*, 24 Oct. 2019, racer.com/2019/10/24/hamiltons-climate-change-comments-open-up-f1-debate/.

Mitchell, Stewart. “Mercedes HPP’s Hywel Thomas on F1’S E10 Fuel.” *Racecar Engineering*, 20 July 2022, www.racecar-engineering.com/articles/mercedes-formula-1-on-race-fuel/#:~:text=Formula%201%20introduced%20new%20fuel.

Ritchie, Hannah, and Max Roser. “CO2 Emissions.” *Our World in Data*, Jan. 2024, ourworldindata.org/co2-emissions.

Ross, Hope. *Future Sustainable Practice for Formula 1 Logistics*. 2020.

Trading, NSW Fair. “E10 and the Environment.” *NSW Government*, 19 Jan. 2021, www.nsw.gov.au/driving-boating-and-transport/e10-fuel/e10-and-environment#:~:text=E10%20fuel%20can%20lower%20greenhouse.