

With The Ever Changing More Sustainable Environment Around Us Do People Believe Formula E Will Become The Forefront Of Motorsport Making Formula 1 Obsolete? 2017-18 M5X01238 Design for Manufacture

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<http://www.evo.co.uk/formula-1/20353/formula-1-vs-formula-e>

Motorsport has been part of car culture almost since the car was invented. There are many forms of motor racing from quarter-mile drag races and rally championships to endurance races the list is extensive and viewed by many as one of the most thrilling and most technological advanced sports on the planet. One of the most notable forms of motorsport is Formula 1; Formula 1 bills itself as the world's most prestigious form of motorsport and is the highest class of single seater auto racing sanctioned by the FIA (Federation Internationale de l'Automobile) the cars are built for top

performance reaching unimaginable speeds, all the teams are backed by masses amounts of funding from sponsors and the championship travels to some of the most wealthy countries such as Monaco and Abu Dhabi. However, as we move toward a more sustainable planet, the world of motorsport has had to follow suit. Formula 1 has taken a big step in the right direction by making their cars hybrid but one of the front-runners toward a more sustainable future in motorsport is Formula E. Formula E is the world's first electric racing series which is run by a major sanctioning body (FIA). The circuits are temporary within streets across the world and its main purpose along with the racing is to help fight climate change and promote the possible future of racing. With this in mind is there a world where there may not be Formula 1 anymore with Formula E taking over or will Formula 1 adapt use its funding to stay on top and continue to excite fans with thrilling high-performance races?

There are many different definitions of sustainability in the English dictionary, the first being "able to be maintained at a certain rate or level" followed by "conserving an ecological balance by avoiding depletion of natural resources" and finally it states that sustainable means being "able to be upheld or defended". According to (Christian Sylt.(2015), Is Formula one the world's most sustainable sport?) "If a sport is self-sufficient or growing, and can be defended because it gives back, then it is sustainable.F1 does this and then some." Formula 1 has made many changes over the years, between the positioning of the engine, new safety measures, Lotus inventing the Aluminium 'Monocoque' chassis, Turbocharged cars and other regulations put in place, but more recently Formula 1 has been focused on making the sport more environmentally friendly/sustainable. The first signs of change appeared in 2006 (Olivia Solon (2011) Formula 1 must commit to sustainability) Max Mosely the head of F1's governing body at the time spoke of a "green overhaul for the sport" and ever since it has been improving, a year before this article was published the Formula 1 teams association unveiled "an externally audited carbon reduction program that aims to cut emissions by up to 14 percent over three years", there is also another big factor of carbon reduction in F1 which is a resource restriction agreement which forces teams to be more efficient throughout the supply

chain. Within the year of this article, there have been regulations making teams reduce the allocated amount of tyres down from 14 to 11 per race weekend and gearboxes must last five race weekends rather than four. Also in the year 2011 F1 brought back KERS, which recycles energy generated by braking which was "expected to deliver a 35 percent reduction in fuel consumption". However in 2014 a big step towards reducing the environmental impact in Formula 1 happened, this being the change of engine, from "the old 2.4 litre V8 gas guzzlers used over the past eight years" to the "1.6 litre hybrid turbo engines" (James Allen (2014) F1 sponsors and supporters drive the shift to sustainability) These new engines mean the cars use a third less fuel to cover the same amount of distance at the same speed, according to the article in the financial times "it is the biggest shake up of F1 technology for 30 years". Andy Cowell, head of the Mercedes F1 engine programme said that "in terms of CO2 per kilometre, that means a 35 percent reduction from last year"



Above, the new 1.6-litre engine in the cars.
<https://jalopnik.com/how-formula-ones-amazing-new-hybrid-turbo-engine-works-1506450399>

This year although the same premise of engine as in 2014 there have been changes to the rules a bid to make F1 power units more reliable and further reduce costs teams are only allowed three engines/power units for the 21-race campaign ((2018) What's new for 2018?) this means that emissions of the supply chain and transportation decrease which was a big problem from the article in 2011 stating that "99 percent of the 215,588 tons of CO2 emitted by 10 teams in 2009 came from the supply chain and transportation.

Moving onto Formula E, Formula E series was conceived in 2011 by Jean Todt to two politicians named Alejandro Agag and Antonio Tajani. The

championships didn't begin until 2014 were the first race was held in Beijing. The first and most obvious reason that Formula E is driven toward sustainability is that the cars are run on electric motors, which means environmentally speaking helps massively as it offers a sensible solution to air pollution in city centres and according to Formula E's official website they "believe that electric vehicles represent the future and are the answer to sustainable transportation and fighting climate change". However there's a lot more behind the main focus of the electric motors, From the official website of Formula E they have 5 key areas which contribute towards there concept of sustainability which is to reduce their footprint as much as possible and to have a positive impact on people and the planet. The first area being energy (as discussed already), they are committed to powering their cars with virtually zero emissions and 100% renewable fuel which comes from there very own Glycerine generators. Next area discussed are the tyres, Formula E are no ordinary tyres as they are specially designed by Michelin as a hybrid which is suitable for all weather conditions, last an entire race unlike its Formula 1 competitors and all of the tyres after use are recycled. Thirdly is the tracks which are temporary as they are held in cities which mean they do not take up any more of the landscape which would be harming the environment whereas we see in Formula 1 that the majority of there tracks are permanent. Next, they move onto how they have ingeniously used their spectators to reduce the championships carbon footprint through holding the races within city centres which encourages the fans to use public transport and they also do not offer parking spaces reducing the chance of the spectators to travel by car to the race weekends. The final area they use is how they map out there racing calendar, they've designed the calendar to use a cluster approach moving region by region which optimises there freight to use more boats or road freight and fewer planes using there official logistics partner to do so DHL.



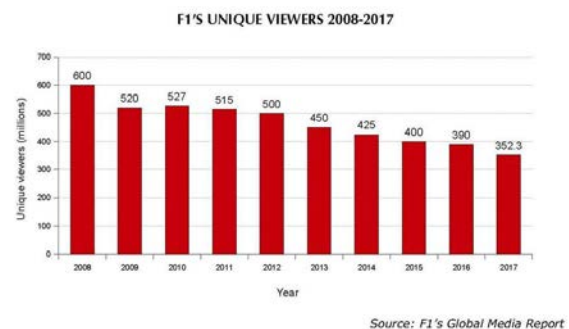
Above, the Paris E-Prix showing that the tracks are in the heart of some of the most well-known cities in the world.

<https://www.redbull.com/gb-en/formula-e-tracks-manufacturers-drivers-cars>

Even after the first two seasons of the Formula E championship you could see a massive improvement in the footprint, according to (DHL (2017) How sustainable is Formula E?) "The footprint from the second season was calculated at 12,000t CO₂-eq, a significant decrease on the season one footprint which was 25,000t CO₂-eq". To put that into perspective the second season created a footprint of electricity consumption of 7,900 UK households per annum whereas season one had a footprint equivalent to the electric consumption of 11,000 UK households. A report was conducted by Ernst & Young which projected the potential global impact that Formula E would have over the next 25 years, the truly astonishing fact from this report is that it would save four billion barrels of oil. As far as the future of sustainability in Formula E is concerned according to Argo group by 2020 all events will be 100% powered by renewable energy and from the report mentioned earlier will have encouraged the sale of an additional 77 million electric vehicles by 2040.

To really gain an understanding of which of the two is most popular currently and who will be in the future I have found viewing stats and opinions of fans/celebrities. According to (Christian Sylt (2016) short circuit: Report reveals Formula E has 4% of F1's TV audience) Formula 1 had a staggering 1.5 billion viewership for the 2015 season which was 24.6 times more than the debut season of Formula E which began in September 2014 having a tv audience of 61.5 million, I suppose you can assume that this would be expected as Formula 1 has been around

for years capturing a larger audience as years have gone by whereas Formula E is new, some unsure of the concept of a fully electric race car so less are going to be interested in this form of racing. While on the topic of Formula 1 culminating a larger audience over the years more recently the numbers of people watching the championship have actually dropped from Forbes's website (Christian Sylt (2018) F1 TV audience reverses by 40 million under new measurement system) showing a graph of unique viewers from 2008-2017



<https://www.forbes.com/sites/csylt/2018/01/06/f1-tv-audience-reverses-by-40-million-under-revised-measurement-system/#2982dcda3a52>

Looking at the graph above we can see a gradual drop in viewings, whether this is an omen for the future viewing figures is remained to be seen however a good point for both Formula 1 and Formula E is that there has been a significant increase in social media followers in 2017, with Formula 1 coming up trumps with a 55% increase followed by a 43% increase for Formula E beating massive sporting organisations such as La Liga, NFL, The Premier League and the NBA. Forbes also reported that Formula E themselves estimate their audience has hit 192 million more recently and to Formula 1 who had 390 million viewers in 2016 if the two respective championships viewings continue in that fashion then there is a large possibility that Formula E's viewings could surpass that of Formula 1's. From evo's website (Sam Sheehan (2015) Richard Branson thinks Formula E could overtake F1 by 2020) we were able to see what Richard Branson's thought on both of the championships saying, "In four or five years, you'll find Formula E overtaking Formula 1 in terms of number of people[who support it]. And in 20 years from now, there will be no new cars built that aren't battery cars". Branson is a man well known in

both Formula E and F1 he has invested in both of the championships, from the 1st year of Formula E he couldn't see "a lot of negatives" and could spur on a revolution that is needed in the world. The report also suggests that Michelin express an on going support of the Formula E championship, however they also stated that although that the narrow, close compact racing with a back drop of some of the most beautiful cities in the world was a credit to watch along with some of the most experienced racers around its racing experience wasn't quite up to scratch of touring cars, F1 and even Formula 3, the reason behind this, the low volumed high pitch whine of the cars were not close to the experience of hearing a "deep, gruff note of a V8 GT racing car or even the complex, textured sound of a modern turbocharged F1 car". This talking to some fans of motorsport was one of the concerns that came up into the conversation of the Formula E cars it is whether people could get over the long-standing tradition of there being noise in motorsport is the question for the future.

Finally, were do people see the future of both the championships, beginning with Formula 1 sky sports discussed the future along with a few well known pundits (Martin Brundle, Paul Di Resta and Damon Hill) and they all came up with the conclusion being that F1 bosses need to become very "bold" in the direction they take the sport into the next decade, as already Ferrari are doubting the future of F1 threatening to walk away unless a blueprint for the future is agreed. Brundle believes that formula 1 "have to be the fastest, the scariest, the best racing cars with the finest drivers wheel to wheel". Moving onto an article including McLaren's executive director and chairman of motorsport network Zak Brown (Kate Magee (2017) McLaren boss Zak Brown on the future of Formula 1) talk about the future of F1 under the new owners who plan on investing heavily into the sport to expand it's popularity, the boss of the new owners Liberty Media has outlined a vision to turn the race weekends into a spectacle "21 Superbowls with week-long extravaganzas with entertainment and music that capture a whole city" with brown being excited about the plans that Liberty media have to offer.



<https://edition.cnn.com/2018/02/23/motorsport/formula-e-gen-2-race-car-specs/index.html>

With the Gen 2 car of Formula E being unveiled for the next season of racing (above) the future of the sport looks bright, with futuristic styling and increased power and range the Formula is distancing itself from F1 and IndyCar. There will be a number of well-known manufacturers as the sport is easily joined at a reasonable cost, the likes of Audi, Porsche and Mahindra are getting involved in the sport. The new cars will also offer a new battery pack which has been developed over time meaning that the cars can last a whole race without having to pit which means no strategies will be needed to decide the outcome of the race so close wheel to wheel racing will be required which is what fans of motorsport strive to see along with the fierce competition of different teams and drivers currently the future looks bright for Formula E.

Now then, let's remind ourselves of the original question I set, with the ever-changing more sustainable environment around us do people believe Formula E will become the forefront of motorsport making Formula 1 obsolete? From all the research I've collected and given opinions of I can honestly say I don't know whether Formula E will become the forefront of motorsport but I do however believe that Formula 1 will not become obsolete, I see that the future looks bright for both Formula's with the new owners in F1 looking to revamp and excite the fans of the sport again and the new look Gen 2 formula e-car along with its environmental roots looking to use 100% renewable energy. I believe the two Formula's however could look to work together using each others research and technology to further enhance each other's respected areas of motorsport as I believe the two are far enough apart as far as viewing experience and attitudes toward motorsport and the environment they will not have to really compete with each other

to still be popular. With the possibility of Formula 1 going electric and Formula E using some of Formula 1's research and technology, I see the two working well together in the future.



Formula 1 car and Formula E car together, above.
<https://www.youtube.com/watch?v=W4uuGmNg9G0>

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