

name: Michael Cuniffe (P148021)
Module: Sustainability through technology
level: BSC Motorsport level 6.
Date: 14th/05th/2020
Module code: MBX02212

Q3) a) Snetterton were forced to take a look at their track as noise became an issue for surrounding residents. It is a flat landscape track and there are no elevations with a small paddock in the centre therefore the sound waves can carry horizontally across the landscape. They were forced to decrease this by introducing elevated viewing stands and tall landfill mounds at the outside of slow to medium speed corners that would heavily decrease the sound travel and rise it vertically. Since it's a flat track these mounds and stands would direct sound vertically so it would travel less distance. It was found that on mid rev range ~~that~~ the droning sound was the greatest irritant so that why ^{such} object were placed on medium corners. They also had restricted the number of days the track could be used, like testing track days and racing events. A rule was also set that no racing could begin before 9.00am and after 6.30pm which hindered the track from hosting endurance races. Also a noise testing area was set up to ~~me~~ scrutinize cars for noise testing to see if they met requirements.

3. b) The past years vehicles have been perceived as a huge factor contributing to the worlds ~~car~~ carbon emitters. In recent years to motorsport industry have begun to become more green by carbon offsetting, reusing parts and materials and this has influenced the automotive industry. In f1, teams reuse broken carbon parts on track to be used for other parts again. In Formula e, used ~~bat~~ and worn batteries get reused to power smaller machines in the factory. This has influence automotive manufacturers like BMW, which they have begun to use these techniques in there new 7-series. They are being more considerate of their raw materials by putting ~~reused~~ ^{recycled} carbon and reinforced plastic into the cockpit shell of the 7-series, an BMW i8. The engine bay and boot is made from ~~carbo~~ aluminium. More recycled product use has grown in the industry due to vegan/green influence. This can be seen in the industry like on some eco cars where instead of ~~leather~~ ^{alcantara} trim and seating you can get recycled (PET) polyester that looks identical to suede and is alot cheaper than alcantara. An alternative to leather which is taken from slaughtering of cows, you can use (vegan leather) which is a natural leather alternative made from cellulose fibres extracted from pineapple leaves. Also known as PLA (petroleum based resin).

- 1) a) The Kyoto protocol was a treaty negotiated in Japan. The agreement is set to for industrialized countries to reduce their collective emissions of greenhouse gases by 5.2% in 1990 but in 2010 levels were 29% cut. The goal is to lower 6 greenhouse gases, carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFC's and PFC's ^{that are} calculate every 5 years period. here are 3 mechanisms of countries do so.

- 1) Carbon Credits (emissions trading)

They set up an emissions trading framework it allows the industrialised countries to express allowed emissions or assigned amounts. As a result countries with unused units can trade them to other countries who have surpassed their own allowance, and require additional units.

- 2) Clean development mechanism.

this allows industrialised countries to meet their targets through investment or co-operation in an emission project, in a non industrialised country or developing country.

- 3) Joint Implementation

allows for emission reduction units ^(cerus) to be earned by one industrialised country from a project in another industrialised countries. An example of this maybe sharing new technology or foreign investment in an emissions reduction project.

Q1 / B) The mechanism's of Kyoto gives many allowances for wealthy super powers to take advantage of third world countries that need foreign investment. The clean development mechanism gives industrialised countries greater flexibility in terms of the best way of meeting their goal, this is done by investing in a developing country to have a emission reduction project in ~~a~~ the developing country to benefit the developed country. Some of the Kyoto methods of carbon offsetting is too lenient. In Motorsport Formula 1 is a huge carbon emitter; in 2018 total carbon emission were calculated as 256,551 ^{tonnes}.

- 45% Logistics (DHL, air travel, lorries and sea freight).
- 27.7% Personnel travel
- 19.3% Factories and Facilities running
- 7.3% Events
- 0.7% F1 car emissions.

Since this sport is a huge emitter of carbon, teams have plans of supposedly becoming carbon neutral in 2030. There plans are to retain the ICE but make it even more efficient and reducing its carbon footprint through offsetting. Offsetting is to be done by planting trees and developing new technologies of capturing carbon from the atmosphere. Just a plants, trees and bog's do.

→
next

more of
Q1 B)

All of these ways of carbon offsetting allow too much flexibility, the way of planting trees and carbon capture seem to be the most beneficial ways with the addition of reusing recycled materials. Carbon capture plants seem to be the next big impact on offsetting. Direct air capture technology plants can capture 1 mega tonne a year and formula 1 emits 0.25 mega tonne of carbon a year. or this is the equivalent of 250,000 vehicles in the ~~use~~ US. This can be achieved ~~by~~ at a levelised cost of 100 → 150 dollars per tonne. Meaningful carbon removal requires large scale so companies have copied the Kyoto mechanism of "Joint implementation" or ~~a~~ colluding with one another by merging/acquiring an investing in one another. It works by firstly by capturing CO₂ by a "equious contractor" which is a water based solution that allows the contractor to run continuously. the Joint implementation allows the contractor to be built at low capital cost. Using technologies arised from cobling towers. 2nd step is removing the liquid surface to collect impurities (dust pollution). Then extract the carbon dioxide from the carbon solution. My opinion of offsetting is now it is starting to be meaningful to carbon removal whereas in ~~that~~ the past it may have been a publicity stunt to get vegans and eco-warriors off their back.