Garden Club of Dublin: 10 Week Challenge 2020

Week #9: Driving Towards a Greener Future

ON THE ROAD: Who doesn't love a Road Trip? Just about everyone's has a memory of a favorite trip to a special place, or in a well loved car, maybe your first, or perhaps just the thrill of being on the open road all by itself.

For many of us, it's a given — part of our heritage--- as American as baseball, rock' n roll, or Labor Day picnics. And yet, projecting into the future, let's consider what happens when you cross the American appetite for bigger, that is equating bigger with somehow better, and our undeniable love affair with the road?

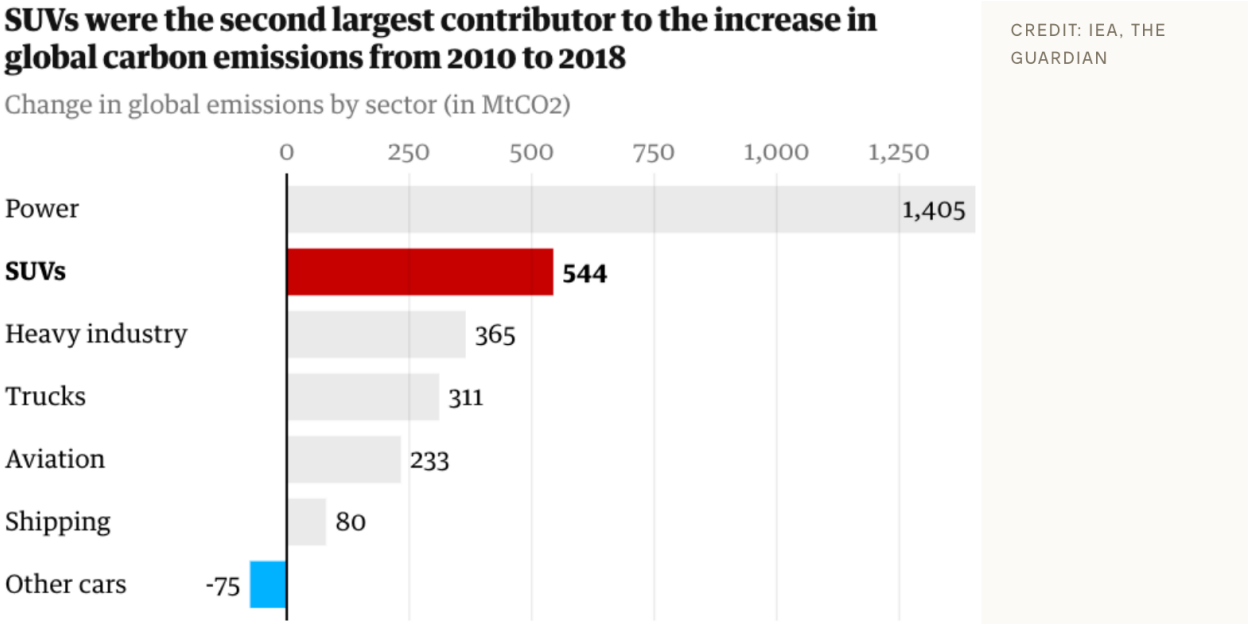
The answer is our ever increasing affinity for trucks and SUVs, whether large, midsize, or Crossover, all of which directly counter what reliable science is now reporting about cars and their effect on climate change. As environmental scientists are sincerely alarmed about the health of the planet today, it is time to investigate how our driving habits and driving choices create such long term, destructive conditions.

This challenge is designed to project *forward*, to our next car purchases, rather than serve as any kind of commentary about what's in our driveways right now. Above all, it's offered with the hope that we understand how car manufacturers skillfully bypass regulations and, at the same time, manipulate us by catering to a certain image, one appealing to our rugged American individualism and spirit. However, when we examine scientific data, that sentiment or image may be as dated as that of the Marlboro Man (remember him?) as we look for constructive alternatives to runaway, extreme consumption in favor of a greener, more eco-friendly 21st century.

What exactly does the newest data tell us? It is interesting that these findings surprised even the scientists conducting the study just last year: they concluded that SUVs comprise the second highest factor in accelerating carbon emissions of any industry.

Take a moment to let this sink in: SUVs rank **Number 2** in emitting toxic greenhouse gasses that are heating up the planet at an alarming rate. This week's challenge was informed by findings published in the Yale School of Environmental Studies in its newsletter, Yale 360, titled, "Demand for SUVs a Major Contributor to the Increase in Global CO2 Emissions," (October 29, 2019). The Yale 360 Newsletter is a free, thought provoking resource that both explains and investigates climate change. Anyone may

sign of up to receive it, and I encourage you to do so. The chart below, ranking the major contributors to global warming is from YALE 360 as first reported in The Guardian (2019).



FIRST, SOME BACKGROUND: So exactly when and how did our affinity for SUVs first appear on the American horizon? And, equally important, what accounts for their exceptional popularity?

> **PreWar Models:** Although the first prototypes for SUVs surfaced just before WW II, with most manufactured in Germany and Japan, the early precursor of the SUV, came around 1949 in the form of the Willy's JEEP Station Wagon (some may even remember it). The Jeep was followed by the first CHEVY SUBURBAN (1955), then by the INTERNATIONAL HARVESTER TRAVELALL (1956), with the even more popular SCOUT arriving shortly after (1961).
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> **The Jeep:** But it wasn't until some 20 years later that the first contemporary style SUV came to capture the public's interest in a big way, when the JEEP CHEROKEE was introduced and the term "Sport Utility Vehicle" entered our national parlance. And while it may seem a natural evolution from those earlier models, the SUVs of the 80's and up were in fact part of a major campaign by automakers to bypass a new set of stringent government regulations aimed at reducing harmful toxins. How? Several movements came together. First,

answering the call for environmental oversight after a major oil spill and amidst growing concern about natural resources as the public began paying attention to Rachel Carson's Silent Spring, President Nixon created the EPA in 1970, nominating William Ruckelshaus as its first Director, and establishing new guidelines for car manufacturers to follow in order to protect the environment.

Not long after, in 1975, the government issued the CAFE (Corporate Average Fuel Economy) standard which aimed to lower fuel consumption after the gas shortage of 1973-74. However, car makers soon found a loophole —by officially classifying certain vehicles as "light trucks"-- they avoided the higher tax on trucks altogether. In short, car makers responded with a squadron of new vehicles, now reclassified as "light" trucks and marketing them, the Jeep Cherokee, for instance, as "passenger vehicles."

Thirty years later, almost 35% of the vehicles on US roads are SUVs: there are now 76 million around on our highways, country roads, and even on city streets. As anyone out driving today can attest, there are a lot out there and, in fact, SUVs makeup 1 in 2 out of all cars sold in the United States.

When you factor that popularity with the International Energy Agency's sobering analysis that carbon emission from SUV's is up 4 X over the past 8 years, making them 2nd only to power as the major producer of global carbon emissions— ranking higher even than heavy industry (including iron, steel, cement and aluminum), aviation, and shipping. "We were quite surprised by this result ourselves," said Laura Cozzi, the chief energy modeler of the International Energy Agency, which produced the report (from the Yale 360 Report: Yale School of Environmental Study, 2020).

GLOBAL IMPACT: Our enthusiasm for SUVs is seeing global expansion in regions that would have seemed surprising only twenty years ago. Take the past decade: in that time "SUVs doubled their global market share from 17% to 39% and their annual emission rose to more than **700 megatons of CO2, more than the yearly total emissions of the UK and the Netherlands combined**." (Yale 360, September 2019).

EUROPE: Consider how SUVs are spreading across Europe, a region which for the most part prided itself on smaller, fairly efficient cars that were seen as the antithesis of everything big, aka crass, and American. Yet, according to The Guardian (October 2019), SUVs now account for over 30% of car sales in Europe: that means that 1 in 3 cars sold all over the Continent and Britain are

SUVs, both Crossovers and larger off-road vehicles. Their popularity accounts for the fact that SUV sales have risen **200%** over the last five years. (NYTimes, March 2018)

Of course, it's not just SUVs. In just the past decade alone, from 2008 to 2018, the average German car gained a whopping 77kg, and the results are disturbing. The heftier the car, the more energy (fuel) it requires because it weighs more, meaning it burns more carbon and produces far more CO2. A prime example is the modest GW Golf: today it weighs more than 60% of what it did 40 years ago, producing **57% more CO2** than earlier models writes Andrew Toberrt, in GreenPeace (September 2019).

CHINA: The SUV market across Asia, but especially in China, is growing at an unexpected and unprecedented rate: today 4 in 10 cars sold there are SUVs. Experts claim their rise is a product of several converging factors: a growing economy, their better performance on poor roads, a burgeoning bourgeois segment of the population with more money to spend than ever before, and the suspension of the One Child Policy which means buyers are looking for larger, family friendly vehicles. (The Guardian, October 2019). It is estimated that by 2022, about **50% of cars sold in China** will be some kind of SUV. (NY Times, March 2018)

WORLDWIDE: Elsewhere around the world, SUV popularity increased.

Compare these numbers with past reports. Only 10 years ago, 1 in 5 vehicles sold were SUVs, by 2018 it was 2 in 5. But why exactly the concern with these developments?

Dawn Stover explains the issue succinctly: "For those of us who are worried about our carbon footprint, driving an SUV is like wearing a pair of SIZE 18 steel toe boots." (The Wired, September 2018). In other words, SUVs are about **30% less fuel efficient** than other cars. (NYTimes, March 2018).

Expert criticism is even more pointed. Last year, over 10,000 scientists urged us to confront the global crisis of climate change, stating that it is one "closely linked to excessive consumption." It is a safe to bet that SUVs, the 2nd greatest producer of carbon emission worldwide, count as "excessive consumption."

In short, SUVs are heavier by design, bigger by consumer demand, and less fuel efficient because more gas is required to propel all that weight, getting less gas per mile, thus producing far more CO2.

Niko Kommenda concludes ominously: **"If SUVs were a nation, they would be 7th in the world for carbon emissions."** (The Guardian, September 2019)

Finally, it seems that SUVs will probably be the last models to go electric. Most SUV drivers are attracted to their revved up performance. and it is a far greater challenge to produce battery power sufficient for these big cars.

MANUFACTURERS' RESPONSE: Surely, it is reasonable to ask, car makers see the reality of climate change and can gauge the impact their vehicles have on it. So how have car manufacturers answered the call for more fuel effect cars to offer us?

While electric cars are the preferred alternate for most scientists, and although the new hybrids are indeed an improvement, as of 2018, however, only the Tesla X stood out in the SUV electric car line up.

It seems that while car makers have made overtures to produce more electric and hybrid cars, in fact they are rolling out even more SUVs. For example, in 2016 Chevrolet produced an electric car, the Chevy Volt, yet in the years since, they have made little effort to improve it; at the same time, GM produced a new SUV, the Cadillac XT4, arriving with a substantial $265 million production cost. And sales are expected to make it a highly successful new product (NY Times, March 2018). Thus, SUVs are a sure fire money maker for auto companies—especially when they add on more and more luxury (expensive) items that make these powerful vehicles ride more like family cars and less like the trucks they actually are. On the other hand, electric cars are known to reduce company profits.

At this time, Tesla is the most profitable of the electric car makers, and they are proliferating in my Cleveland Park neighborhood in Washington DC (formerly Volvo station wagon territory). Some market analysts are touting Tesla stock as the new Apple and sales growth of Teslas appear to back this up (even my Yankee to the core, let's not make a splash, brother in law just bought one because of its superior mileage). According to Jeff Reeves of Market Watch (2019), " At the onset of 2013, a few months after Tesla TSLA 4.01% moved its Model S into full production, the car maker was struggling to produce a mere 20,00 vehicles annually. In 2108, electric vehicles topped

360,000—with Tesla models accounting for about 192,000 of that tally. And halfway through 2019, worldwide EV sales are pacing at an annual rate of roughly 530,000."

Now, Porsche is poised to debut a new model to compete with Tesla's most costly car. It asks us to question why exactly is it producing another pricey, luxury car? And to wonder, who's next? For some insight into how consumers make choices, check Alex Laskey's talk "Innovation for Behavioral Change." (2017, The Atlantic Council and Ecological Institute).

AND NOW? So what does this tell us, the consumer, as we consider buying a new car somewhere down the road?

If 14% of global greenhouse emissions come from transportation, with most of it coming from trucks and SUVs, our cars indeed pose a serious environmental threat. Furthermore, while it appeared that cars were becoming more fuel efficient earlier, in the past 10 years those improvements have been slipping and once smaller cars, the Subaru Outback, for example, becoming bigger and heavier. With over 165 million more SUVs moving around the world than a mere 8 years ago, the International Energy Agency (the IEA) issued a warning directed straight at us consumers just last year:

1. "that SUVs could offset the benefits from electric cars."
2. "that SUV emissions grew by nearly 0.55 gigots of CO2."
3. "that if the popularity of SUV's continues to rise... this could add another 2 million barrels of oil to our daily consumption within the next twenty years." (from AUTO BLOG, January 2020)

Positive news on the horizon: Advances continue to be made for upscale car models, with automakers BMW and Mercedes leading way with their highly rated hybrid models. Yet, only 5% of SUVs fall into this luxury hybrid class. However, as of early 2020, BMW has announced plans to produce at least 50% of its cars as either electric or hybrid models within the next 5 years. Mercedes, taking its cue, plans to make half of its cars electric or hybrid in the next 10 years. (from AUTO BLOG, January 2020).

SUMMARY: The goal of this week's challenge is to help us think critically about something many of us take for granted---our cars-- and to educate ourselves about their contribution to climate change.

So check out your vehicle's MPG and consider its carbon foot print (is it a Size 8 or Size 18 steel toed boot?). Perhaps the next time you're ready to buy a new car or trade in, you will consider the options and try to improve on that mileage, every bit helps. After all, for many Americans buying a car is an investment. And so is our planets' health and future.

IN THE MEANTIME: The US Department of Energy offers advice for anyone choosing a new car, including practical information about hybrid and electric cars, and also rates the more energy efficient vehicles.

In addition, the website lists useful tips for increasing your mileage:

1. Avoid idling: it can consume 1/-1/2 gallon of fuel per hour. So when your car is parked, turn off the engine—even when running into the Post Office.
2. Deploy cruise control: it maintains a steady highway speed and that saves gas
3. Keep the engine properly tuned: it can improve mileage by about 5%
4. Keep your tires properly inflated according to the car manufacturer's guidelines
5. Use the oil recommended by the car maker
6. In cold weather, you only need to warm up the car for about 30 seconds

The website also lists ways to drive more efficiently:

1. Avoid aggressive driving; speeding up, then braking repeatedly lowers MPG by 15-30%
2. Drive within the posted speed limit: mileage on most cars decreases after 50 mph
3. Avoid roof top cargo boxes: they can reduce MPG by 10-25%
4. Cluster trips together so you drive less
5. And when it's safe to do so again: car pool! You may even meet new friends.