

# From Four Wheels to Two: How to start Decarbonising your Lifestyle

[This is an update to an article previously published in Ride magazine in March 2019]

My introduction to bicycle commuting was in Cambridge, UK. Cambridge is well-suited to this because it is small, flat and the infrastructure is mostly cycle-friendly. This was a novel experience for me, having lived all my previous life in and around Johannesburg which is full of cars, has little cycling infrastructure, and which is famous for general lawlessness on the roads. When we moved back to South Africa, my wife and I agreed to share one car between us, in stark contrast to the common South African mind-set of everyone 'needing' their own vehicle. Part of the plan was that we would find a place to live that would make cycle commuting an option for me again, which we eventually did.

Our new home in Pretoria was a cycle-friendly 6.5km from work, and I already had an old mountain bike to get me going. After some initial experimentation with routes, clothing, and bicycle parking, cycle commuting became my default means of getting to work. My commute was further and hillier than in Cambridge but was a reasonable 20 minutes each way (about the same time it would take in a car). I was fortunate to have access to a shower at work for the Pretoria summers. This continued happily until the COVID-19 pandemic hit and many of us began working from home.



Cycling to work in Pretoria

I spend my working life researching ways to decarbonise transport, and so for me my cycle commuting was a great exercise (excuse the pun!) in reducing my own carbon footprint. We can quite easily calculate how much CO<sub>2</sub> this saved compared to driving using what we call 'fuel emission factors', which are a measure of the amount (in kg) of CO<sub>2</sub> emitted from burning a litre of fuel. In addition to the obvious emissions from the tailpipe of the car (what we call 'tank-to-wheel' emissions), there are secondary emissions associated with the

production and transport of that fuel on its way to the filling station, and so we often use 'well-to-wheel' emission factors to fully capture the emissions footprint. A representative well-to-wheel emission factor for petrol is around 2.9kg CO<sub>2</sub> per litre of fuel.

Compared to doing the same commute in a small car with a fuel consumption of 7litres/100km, my cycle commute saved around 630kg CO<sub>2</sub> emissions per year (assuming 48 working weeks). The average South African has a carbon footprint of around 9000kg CO<sub>2</sub> per year, and so this is a saving of 7%. This figure would be substantially higher if you use an SUV or bakkie (pick-up), both extremely prevalent on South African roads. There are also the additional carbon savings of not acquiring the second car for the household. Manufacturing a small internal combustion engine car today produces around 6000kg of CO<sub>2</sub>. Assuming a typical vehicle lifespan of 15 years, that's an additional 400kg CO<sub>2</sub> saved per year. (Production of a large premium SUV can produce as much as 35000kg CO<sub>2</sub>!) There are many obvious financial benefits as well: reduced fuel costs, insurance premiums, and maintenance costs, and of course no loan repayments on that second car.



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Writing in October 2021, I am once again living in Cambridge and I am still cycle commuting (when I'm not remote working, of course!) The COVID-19 pandemic has led many of us to re-evaluate aspects of life previously thought to be cast in stone, and I hope that we are turning our thoughts to our personal carbon footprints. The UN Framework Convention on Climate Change was signed nearly 30 years ago in 1992, and despite our combined efforts since then the concentration of carbon dioxide in our atmosphere has continued to rise steadily. So, as we begin the next 30-year period towards a target of net zero in 2050, it is becoming increasingly urgent for each of us to decarbonise our day-to-day activities, of which transport plays a big role. Cycling is a great way to save money, decarbonise, and stay healthy at the same time - and it can work in Gauteng. So why not give it a try?



My first commuter bicycle in Cambridge

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