



Carbon tax drives "eco" mobility

**Putting South Africa on the
#Mobility2030 map**

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187

countries ratified the 2015 Paris Agreement



2%

the percentage limit increase in global average temperatures that the Paris Agreement aims to achieve



2021

the year in which Costa Rica aims to achieve 100% renewable electricity production

We live in a world where technology is constantly evolving, and where companies strive to be the next “best innovator”. The way in which we travel is no exception to this, and it is now widely accepted that by 2030, mobility – the way in which people and goods are moved - will be dramatically different to what it is today, as it undergoes one of the most transformational social, technological and economic shift of a generation. However, understanding the future of mobility must include consideration of what is at the forefront of many discussions globally - environmental protection and climate change.

Companies and individuals alike are encouraged (on an almost daily basis) to understand the impact of their carbon footprint on the environment, and to take measures to mitigate the extent of this footprint. The most notable collaborative, global effort aimed towards achieving these measures was the introduction of the landmark environmental 2015 Paris Agreement on Climate Change (“the Agreement”). Under this accord, 196 countries agreed to combat climate change - committing to collectively implement measures which would lead to a low-carbon, sustainable future. This a treaty of international law entered into force on 4 November 2016, and has, to date, been ratified by 187 parties.

The aim of this Agreement is to limit the global average temperature in this century to 2% above pre-industrial levels, while pursuing means to limit the increase to 1.5%. Each signatory to the Agreement is required to submit its own national plan (or nationally determined contributions (NDCs)), setting targets for emissions reductions and specifying pathways by which it aims to meet those targets. A global stocktake would be undertaken every five years to assess the collective advancement made towards achieving these targets. Depending on the outcome of this review, more ambitious targets may be required to be set.

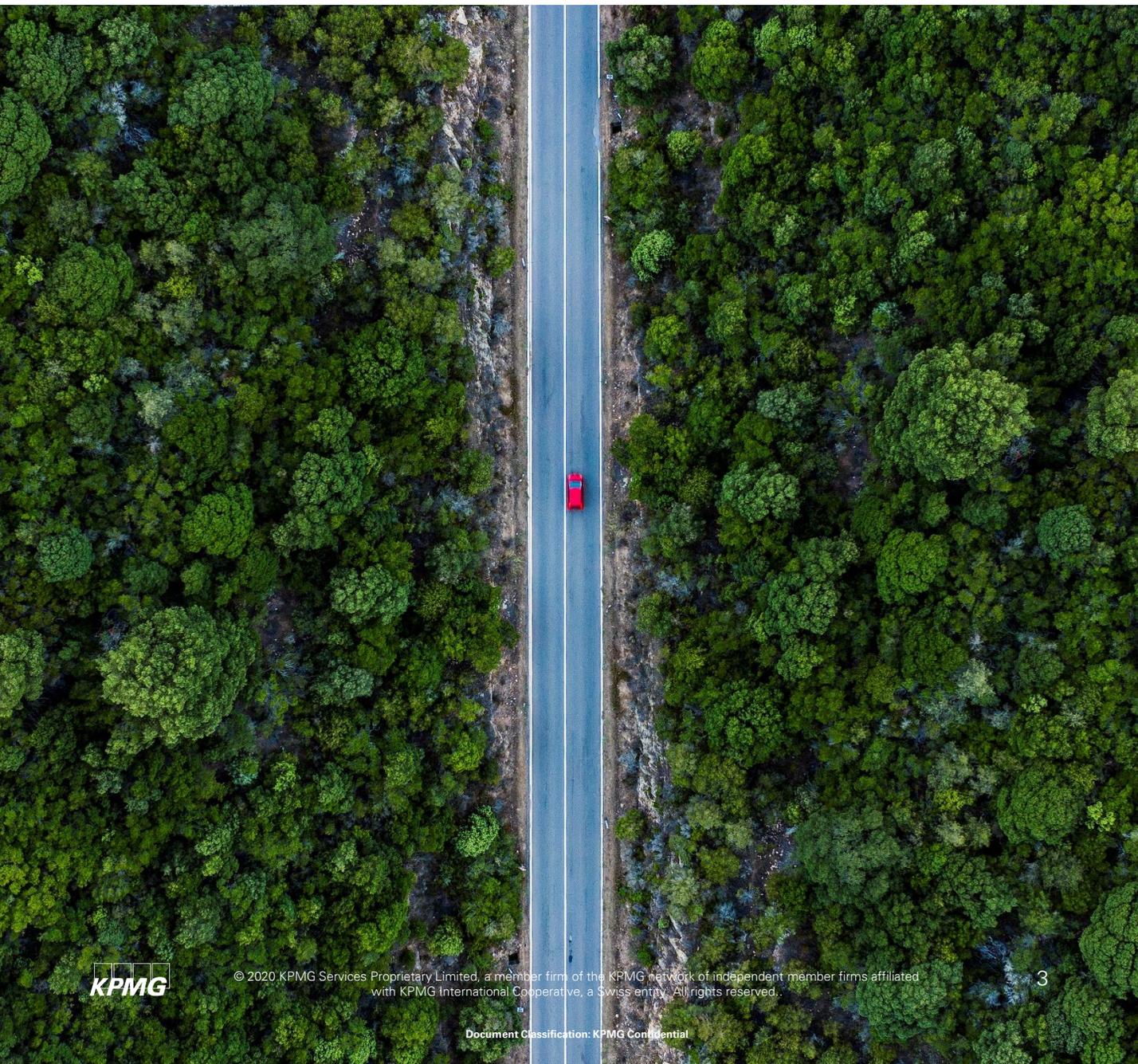
Since the introduction of the Agreement, countries progressing at different rates, which was to be expected. For example, Costa Rica aims for its electricity production to be 100% renewable by 2021. It’s already extremely close: in 2018 it generated 98 percent of its electricity from renewable sources—primarily hydropower—for the fourth consecutive year. In 2019, this percentage climbed to 99.6%. While many countries have committed, under the Agreement, to achieving carbon neutrality by 2050, Costa Rica is committed to becoming 100% carbon neutral during 2020.

The road ahead

In the remainder of the article, we look at South Africa's participation with regards to the Agreement, and the supporting policies and legislation which are in place to achieve South Africa's NDCs'. More specifically, we consider how these policies affect South Africa's automotive market, both domestic and globally.

As more countries introduce initiatives to decrease their Greenhouse Gas ("GHG") emissions and mitigate the extent of their carbon footprint, a failure to respond to, and control, GHG emissions could lead to a loss in international competitiveness and increased vulnerability to trade and investment.

With some of South Africa's main automotive trading partners committing to reducing and eventually eliminating the use of petrol and diesel vehicles, South Africa needs to ensure that it stays ahead of these changes, and adapts its strategic initiatives accordingly.



Accelerating change through Carbon Tax

South Africa is one of the signatories to the 2015 Paris Agreement, in terms of which our NDC commitment is that South Africa, as a whole, is allowed to emit 14-gigatons of carbon dioxide between 2020 and 2050. In order to meet this obligation, the country's GHG emissions should peak in 2020 to 2025, plateau from 2026 to 2035, and decline from 2036 onwards¹.

The first step to South Africa's adaptation and mitigation responses to climate change was to set a price on GHG emissions on the 'Polluter Pays' Principle – that those who pollute should bear the costs of managing and preventing further damage to human health and the environment. The price aims to address the country's carbon emissions - which are disproportionately high as a developing country – and is also one of the mechanisms used to achieve South Africa's NDC targets.

After eight years of extensive stakeholder consultation, this price took the form of the Carbon Tax Act ("the Act") which was assented to by the President on 23 May 2019, and became effective from 1 June 2019 - making South Africa the first African nation to launch a carbon tax.

Priced at an initial R120 per tonne of carbon

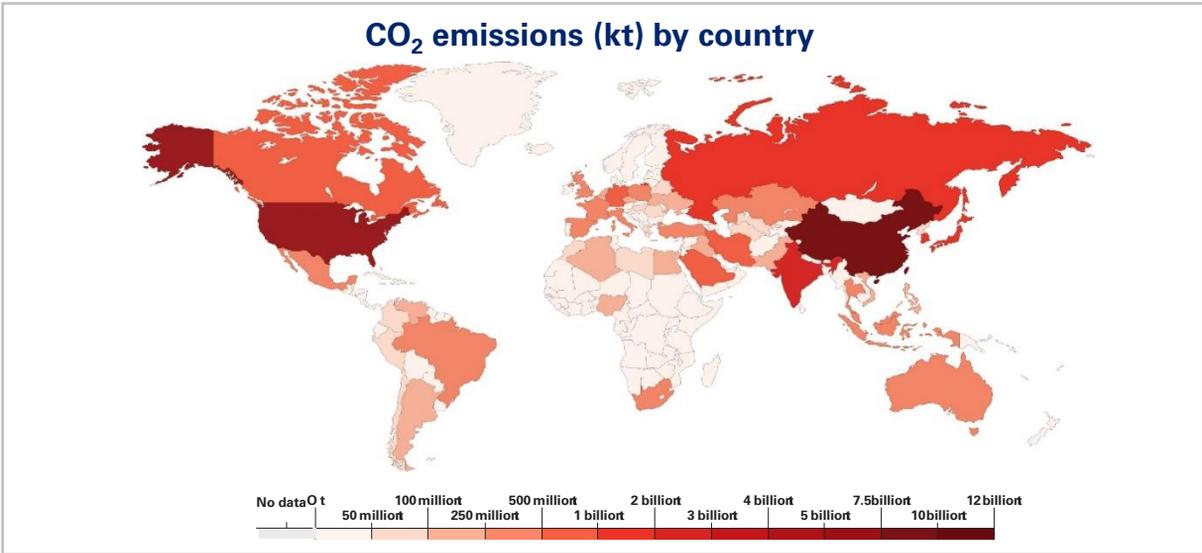
dioxide equivalent ("CO₂e") of GHG emissions, carbon tax is intended to ensure businesses and households alike take the costs associated with the environmental and health damages of excessive greenhouse gas emissions into consideration when determining the final price of products or services.

Additionally, the carbon tax aims to "encourage companies to gradually change their fuel inputs, production techniques and processes by encouraging investments in energy efficient, low carbon technologies to lower their emissions²". This may well be the tipping point in accelerating the adoption rate of Electric Vehicles ("EVs") and Autonomous Vehicles ("AVs") in South Africa, particularly as road transportation (which is currently excluded from carbon tax) is likely fall within the list of activities subject to carbon tax post 2022.

Although the industry sectors which are affected by the Act are far-reaching, the carbon tax has been designed to try to ensure that South Africa's competitiveness is not compromised through its introduction, and that the economy remains stable. This is hoped to be achieved through a phased-in approach, limiting the activities and type of emissions which are subject to carbon tax, as well as the inclusion of thresholds as well as many tax-free allowances.

Source:

1. https://www.environment.gov.za/sites/default/files/docs/SA_indc_september2015.pdf
2. Socio-Economic Impact Assessment published by the Department of Planning, Monitoring and Evaluation in July 2017.



The Act will be implemented in 3 phases: the first phase runs from 1 June 2019 to 31 December 2022, the second from 2023 to 2030, and the third from 2031 to 2050. In addition, a wide variety of allowances have been set out in the Act to allow businesses time for transition. The most notable of these is a basic percentage-based threshold allowance of 60%, below which tax is not payable. This has the immediate effect of reducing the carbon tax liability from R120 to R48 per CO₂e tonne. Other allowances include a trade exposure allowance (to alleviate the burden for trade exposed entities) and a carbon offset allowance (which allows entities to offset investments in carbon offsets projects against their carbon emissions). In order to cushion the potential impact on energy-intensive sectors, the price of electricity will not be affected by carbon tax for the first phase.

The Act also specifies that the initial rate of carbon tax of R120 per tonne will be increased by consumer price inflation ("CPI") +2% per year³ until 31 December 2022, where after the rate of tax will be increased only by CPI. The impact of the carbon tax will also be reviewed at least three years after implementation (i.e. June 2022), taking into account the progress made in reducing GHG emissions – which may result in changes to the legislation.

The High Level Commission on Carbon Prices estimated that, in order to drive transformational change, carbon tax should be US\$40-80 per tonne of carbon dioxide equivalent by 2020, and between US\$50-100 per CO₂e tonne by 2030. Most prices internationally are below this range, and at the initial levy of R120/CO₂e tonne (notwithstanding the various allowances which are in place), South Africa's carbon tax, as it stands, is significantly below this level. In fact, the current rate of R127³ per tonne of CO₂e is only 20% of the *lowest* price suggested for 2020 to produce a meaningful reduction in carbon emissions. Notably, applying the basic percentage-based threshold allowance of 60% has the immediate effect of reducing the tax to a paltry US\$3 per tonne of CO₂e. (Interestingly, Sweden has the highest carbon tax price, at US\$127 (approximately R2,300) per tonne CO₂e.)

Whilst the environmental need to reduce GHG emissions is clear, South Africa's lack of economic growth cannot be ignored. South Africa is heavily reliant on coal for energy, relative to other countries, thus a carbon tax will have a far greater detrimental impact on South African economy than in other countries if not structured carefully to take this into account. Perhaps, in this light, the low initial price is justified.



3 phases of carbon tax implementation



60% Basic tax free allowance



R127 Carbon tax rate per CO₂e tonne for the calendar year ended 2020



CPI + 2% Carbon tax rate increase to Dec '22



June 2022 Possible changes to the Carbon Tax Act, following an impact assessment review

³ Per the 2020 Budget Review, the rate of carbon tax for the year ended 31 December 2020 is R127 per CO₂e tonne (reflecting an increase of 3.6% CPI + 2%).

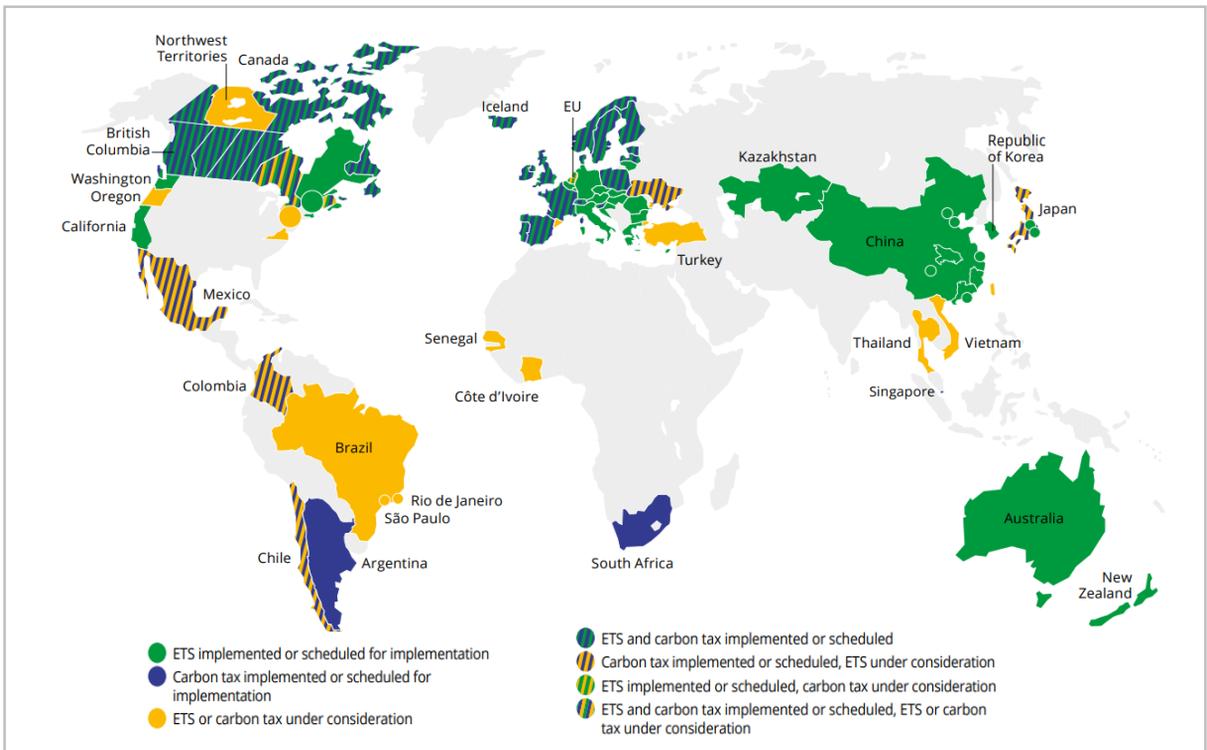
Competitiveness per CO₂e tonne

During National Treasury’s carbon tax consultation process, it was noted that “the scope of carbon pricing initiatives through carbon taxation is increasing rapidly and is becoming a major part of country policy strategies to achieve the nationally determined contributions under the Paris Agreement”.

One of the problems facing South Africa, as outlined in the Socio-Economic Impact Assessment for the implementation of carbon tax undertaken by the Department of Planning, Monitoring and Evaluation (“the Assessment”), is the increased pressure to undertake mitigation policy efforts to lower South Africa’s use of fossil fuels and decarbonise the economy. The Assessment identified that failing to control GHG emissions “could lead to a loss in international competitiveness, an increased vulnerability to trade and investment measures, which would effectively entail other countries imposing a carbon price on South African exports”.

In 2018, OECD Secretary-General, Angel Gurría stated that “the gulf between today’s carbon prices and the actual cost of emissions to our planet is unacceptable. Pricing carbon correctly is a concrete and cost-effective way to slow climate change”.

By 2019, existing pricing mechanisms covered 11 gigatons of CO₂e, representing only 20% of global GHG emissions. Per the World Bank’s *State and Trends of Carbon Pricing 2019* report⁴, prices for existing carbon pricing initiatives range from US\$1 to US\$127 per tonne CO₂e, while more than half of the emissions covered are priced below US\$10 per tonne CO₂e. The report also indicates that, as of April 2019, 57 carbon pricing initiatives have been implemented, or are scheduled for implementation. As such, initial concerns over competitiveness should subside as carbon prices spread globally.



Source: World Bank (2019), *State and Trends of Carbon Pricing 2019*, available online at <https://openknowledge.worldbank.org/handle/10986/31755>
 4. “World Bank Group. 2019. *State and Trends of Carbon Pricing 2019*. Washington, DC: World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/31755> License: CC BY 3.0 IGO.”

The implementation of carbon pricing mechanisms could, therefore, certainly put pressure on individuals and businesses to switch to a cleaner and greener mode of transport.

Examples of this is evidenced through some of the commitments that have been made under the Paris Agreement – such as Norway’s plan to ban the sale of petrol and diesel-powered cars by 2025, with the Netherlands has pledged to do the same by 2030. India plans to have EV’s contribute 50% to public transport by 2023 and 100% EV’s by 2030. Meanwhile, China aims to have 5 million EVs on the road next year, and is on track to achieve 2 million EV sales this year. If we look at our major vehicle export markets, the both the UK and Japan aim to have 100% electric vehicles by 2040. France wants to stop the sale of petrol and diesel cars by 2040, and have 2 million electric vehicles and rechargeable hybrids on its roads by next year.

With some of South Africa’s main automotive trading partners committing to reducing and eventually eliminating the use of petrol and diesel vehicles (refer images on this page), industry needs to ensure that it stays ahead of these changes, and adapt its strategic initiatives accordingly. These decisions, however, should not remain only with what we sell; the way in which goods are produced is also of importance – especially when it comes to the possibility of carbon-related import tariffs, or border carbon adjustments (“BCAs”).

In 2019, newly elected President of the European Commission Ursula von der Leyen, stated that, “to ensure our companies can compete on a level playing field, I will introduce a Carbon Border Tax to avoid carbon leakage” (i.e. the shifting of carbon-intensive production to countries outside the EU). Such a tax scheme is often referred to as a BCA since it makes up for the difference between the domestic carbon tax and those levied in countries with lower (or no) carbon taxes.



Target: To have all electric cars by 2040, with a zero emissions policy (to meet 2050 targets, this may need to be brought forward to at least 2035 or 2030)
Export: +21% of LMV production



Target: By 2050, every vehicle produced by Japanese automakers will be electrified
Regulations: Fuel efficiency regulations proposed in early June 2019 on new vehicle sales
Export: +8% of LMV production



Target: Stopping sales of petrol or diesel cars by 2040
Export: +4% of LMV production



Target: No deadline for all new cars to be emission-free
Policy: Climate action law (draft) - establish a monitoring and sanctions system for carmakers to ensure that the vehicles in circulation comply with emission limit values
Export: +4% of LMV production



Revolutions per CO₂e tonne

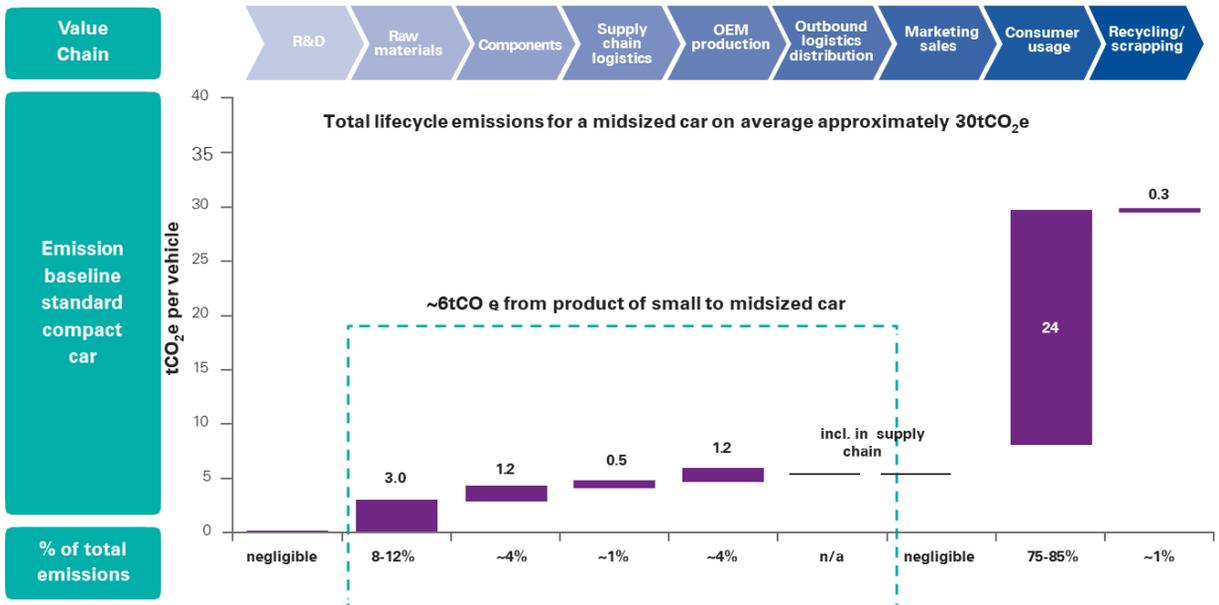
Globally, industry representatives have voiced their concerns that imports from countries without similar emissions regulations can gain cost-of-production advantages over domestic goods. To put this into context, analyses performed on the difference in CO₂ emissions between petrol, diesel, hybrid and electric vehicles is measured on the entire life cycle of a vehicle – not just on the emissions from the tank to the wheel. GHG emissions from production is suddenly brought into the equation – and countries who are investing in greener production technologies could find themselves on the back foot when it comes to factoring these costs into the final selling price. It therefore stands to reason that not only should we be considering what we sell, but we should also be considering our mining and manufacturing processes, and identifying ways that we can reduce the GHG emissions for the entire life cycle of the vehicle.

One of the arguments in favour of carbon tax is the protection of South Africa’s exports from BCAs that could be imposed on exports to countries that are already pricing carbon. While no country has implemented BCAs on any meaningful scale yet, the desirability of competitiveness adjustment policies is under review by many policy makers.

A lot of South African taxpayers have not even considered carbon tax and its effect yet – especially as we are only in the first phase of the imposition of the tax, and it is really only the big emitters that are being materially affected. It will be interesting to see whether there will be a drive to reduce emissions by corporates, or whether this will be another tax that will be priced into the costs of goods and services.

As more countries introduce initiatives to decrease their emissions, a failure to respond to, and control, GHG emissions could lead to a loss in international competitiveness and increased vulnerability to trade and investment.

Lifecycle emissions of current global production ~2-2.5bn tCO₂e per year (5-6% of global GHG emissions)



Note: Emissions can range significantly depending on size and performance of car, mileage and driving behaviour. Up to ~10t CO₂ car embedded and 80t CO₂ in-use emissions for large premium vehicles.

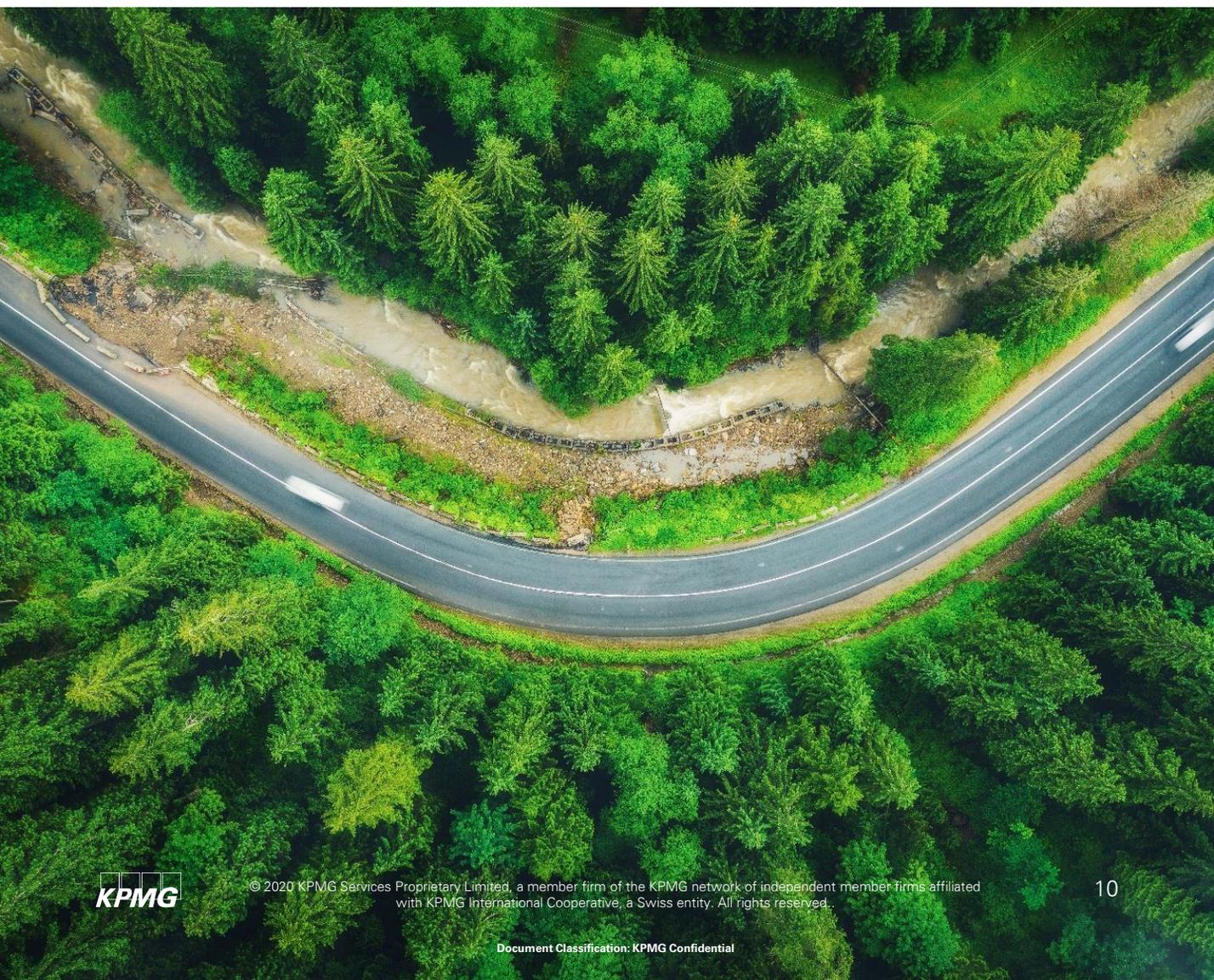
Source: Carbon Trust and BCG Analysis based on Life Cycle Analysis publications from several OEM and emissions data from Ricardo.

Fast-Tracking Strategic Investments

In order to remain competitive, relevant, and avoid potentially significant increases in the cost of carbon tax as we approach phase 2, industry should also already be identifying ways in which its carbon footprint can be reduced. Specific to the automotive sector, this may mean an accelerated adoption of EVs and AVs.

Of course, this would have to be coupled with government support and alignment, as well as investment in supporting infrastructure – which can already be evidenced through incentives such as the Support Programme for Industrial Innovation (“SPII”) cash grant, the Research and Development (“R&D”) tax incentive, and the Automotive Production Development Programme (“APDP”), which is the most significant and largest tax incentive programme offered by government. While this won’t happen overnight, these discussions are certainly taking place now.

The South African automotive industry is confronted with multiple challenges – depressed economic conditions which have only been exacerbated by the COVID-19 pandemic, increased global competitiveness, pressure on businesses to reduce carbon footprints and production growth tied to exports into developed countries – however, we are also optimally positioned to take advantage of the Mobility revolution by investigating the EV space now, and become a leading disruptor through innovation. With the backing of the ADPD (soon to be SAAM), R&D and SPII incentives, South Africa is already on the right track.






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