

Petrol stations, workers and the just transition

OVERVIEW

Petrol stations are an important part of South Africa's fossil fuel-powered economy, providing liquid fuels for more than 12 million cars, delivering fuels to power heavy machinery for industrial and agricultural use, and employing more than 140 000 people across the country. This policy brief aims to understand petrol stations in South Africa, and in particular the people who work there. With the transition to a low-emissions economy underway, these workers are vulnerable to job losses due to the shift to electric vehicles. As such, it is important to understand who these workers are, what skills they have, as well as the resources they possess to chart the least disruptive way forward as part of a just transition. This brief looks at the economics of petrol stations in value addition, contribution to GDP and employment. It provides a profile of the workers, looking at employment, educational attainments, as well as financial resources and access to social networks. It also briefly considers some of the decisions that must be made in the coming years.

INTRODUCTION

As well as liquid fuels for vehicles, petrol stations also sell other liquid fuels such as paraffin and gas for residential use, and general groceries. However, estimates suggest that vehicle fuel accounts for between 60% and 80% of petrol station revenue depending on the location (BusinessTech, 2021a), and between 80% and 90% of profits, according to Thompson (2020). These stations source from suppliers which in most instances own the refining and wholesale infrastructure as well as the petrol station infrastructure. As such, these petroleum companies hold a lot of power in terms of security of supply of energy products, as well as in meeting important climate-related targets. Still, the continued financial viability of these petroleum companies – and thus their economic power – is fundamentally linked to their ability to adapt to changing consumer and legislative demands in response to the climate crisis.

South Africa is the 13th largest greenhouse gas (GHG) emitter, and contributes about 1% to total global emissions, with Eskom and Sasol being the main domestic contributors (Africa Check, 2021).

Another major contributor to the country's GHG emissions is the transport sector which, according to Climate Watch data (Climate Watch, n.d.), contributes about 13.1% to energy emissions and about 11.1% to total emissions. This excludes emissions from the liquid fuels industry, which contributes just under 8% to total emissions according to Ahjum, et al, 2020. Road transport is the single-largest driver of transport emissions, accounting for 91.2%¹ of the total. These emissions are mainly the result of the continued use of internal combustion engine vehicles, which primarily use fossil fuel-based liquid fuels, such as petrol and diesel. Reducing transport sector emissions requires a shift to sustainable fuels, as well as a shift to hybrid- and fully electric vehicles (using clean instead of coal-generated electricity).

Although transitioning to sustainable fuels might not significantly affect the business model – and thus the economics of petrol stations – the shift to fully-electric vehicles will have far more reaching impacts for petrol stations and the people employed there. Whereas liquid fuels can only be purchased at petrol stations whose operations are governed by the relevant safety, health and environmental regulations, consumers can charge electric vehicles at home. With vehicle fuel

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¹ These transport emissions data are based on the greenhouse gas inventory for the period between 2000 and 2010.

accounting for the highest share of petrol station revenue, a shift to fully electric vehicles would significantly reduce that revenue, particularly if South Africa’s electricity supply becomes more stable.

Admittedly, the timelines for a shift to fully electric vehicles remain unclear. However, the European Parliament recently approved a ban on the sale of fossil-fuel cars beginning in 2035 (France 24, 2022). Overall, the European Union (EU) is a major export destination for South African manufactured vehicles, accounting for slightly more than half of the country’s total automotive exports in 2020 (Lamprecht, 2021). Moreover, the region supplied more than 40% of vehicles imported into South Africa in 2020.

In addition, more than 120 countries (along with hundreds of regional governments, companies and cities) have pledged to reach net zero emissions around 2050 (Black, et al., 2021). Similarly, petroleum companies, such as global oil and gas company Shell, have made a commitment to be a net zero emissions energy business by 2050. Theoretically, this means petroleum companies, and more so the state (whose interest is in ensuring the sustainability of jobs), have slightly under three decades to figure out alternative uses for petrol station infrastructure – alternatives that would reduce job losses that will accompany the transition away from fossil fuel-based vehicles. Of course, some of these petroleum companies have already begun incorporating electric vehicle charging infrastructure, while others cater for dual-fuel (natural gas and diesel) vehicles. However, not all petrol stations have started making these necessary changes.

THE ECONOMICS OF PETROL STATIONS

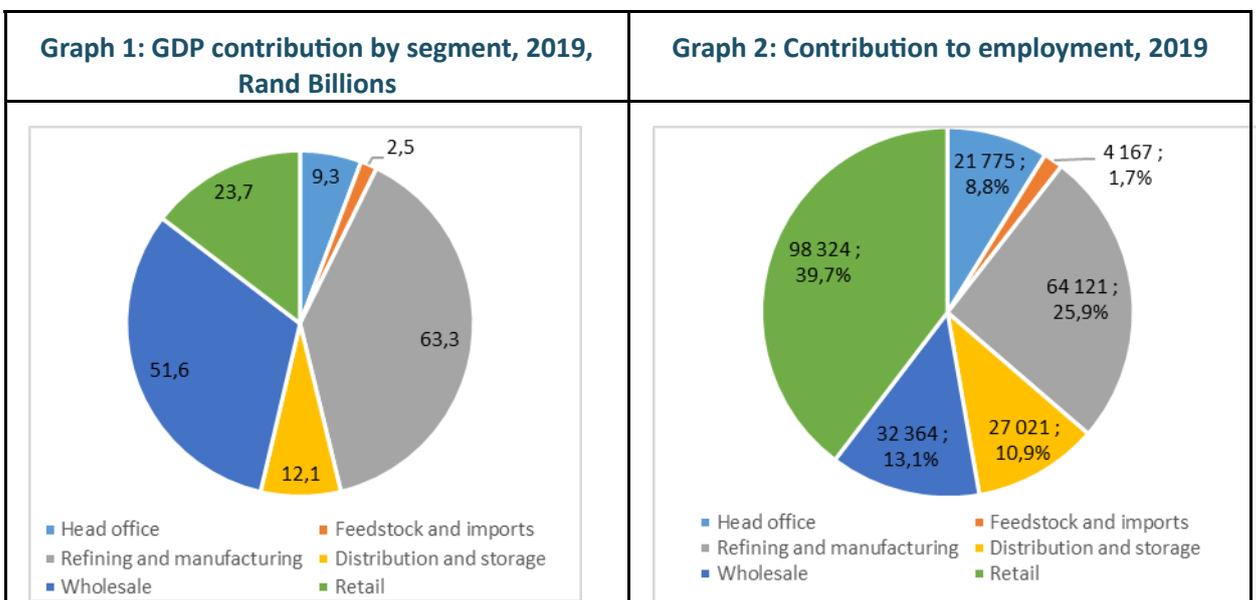
Local manufacturing and distribution of fuel and other petroleum products has not been immune to the negative impact of the COVID-19 pandemic. The value

chain was designated as an essential service during the first phase of the pandemic lockdown and allowed to remain operational, however, restricted movement meant there was insufficient demand for fuel at petrol stations.

Estimates suggest demand declined by as much as 60% by May 2020, which in turn affected revenue and job security for those employed at petrol stations (and across the various segments of the value chain). For instance, the Fuel Retailer Association of Southern Africa (FRA) reports that about 41.8% of employers in fuel retail remained fully operational during the first 35 days of lockdown, another 27.5% were partially operational, while the other 30.7% were not operating. Besides the disruption in operations, the pandemic also affected turnover and ability to pay employees, with about 55% of businesses only able to pay half of their workers’ salaries, while 20.3% reported not being able to pay salaries at all (FRA, 2022).

In 2019, prior to the onset of the COVID-19 pandemic, South Africa’s oil value chain (including petrol stations) contributed about R163 billion (or 3.2%) to GDP, according to the South African Petroleum Industry Association (SAPIA, 2021:5). Refining and manufacturing (39%) and wholesale (32%) made up the bulk of that value creation. Retail accounted for about 15% (or R23.7 billion) of it, with segments such as head office, feedstock, and distribution accounting for the balance. SAPIA (2021:6) further reported that refining and manufacturing (25.9%) and retail (39.7%) accounted for the biggest share of employment in the value chain (while the whole value chain accounted for about 1.5% of total employment in the country).

Graph 1 shows direct GDP contribution by segment of the oil value chain, and Graph 2 shows each segment’s direct contribution to employment as reported by SAPIA.



Source: SAPIA, 2021

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Further, and most notably, about 91% of the value chain's GDP was contributed by integrated companies that operate across the value chain, covering refineries and retail. This shows the level of concentration, with a handful of large companies essentially controlling most of the value chain. Concentration is clear in the ownership of petrol stations across the country. According to Timm (2021:13), there are roughly 4 800 licensed petrol stations across the country, up to about 7 000 when including co-operatives and operators supplying the agricultural sector. More than 80% of these stations are owned by six brands: Engen, Shell, BP, Total, Sasol and Caltex. Generally, petrol station ownership works on different models.

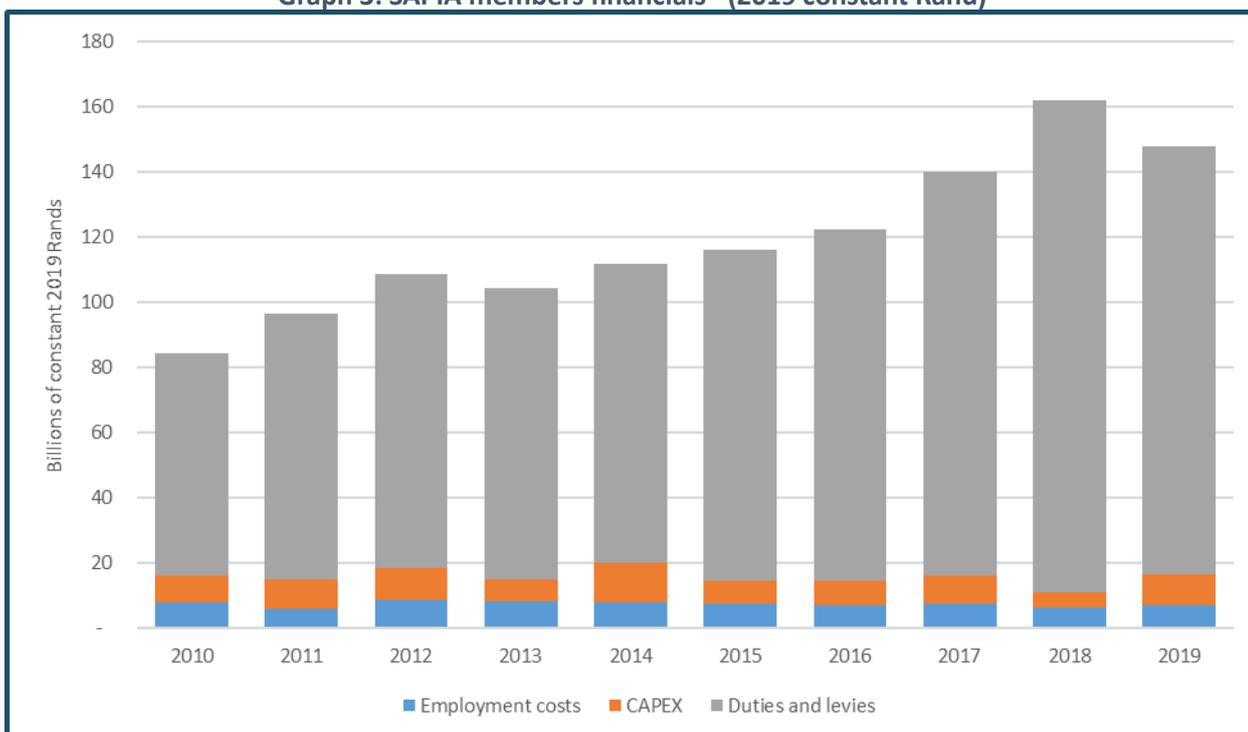
According to Franchising Plus (2019), there are three major ownership models for fuel retail. The first is an independent operation with its own brand and not linked to a major petroleum dealer; the second is a semi-independent model under which the fuel retailer uses a major brand name, but remains independent in its operations – which is usually the case with brands that don't have a local retail licence. The third model is a franchise which works on an existing business model and operates according to strict guidelines set by the franchisor. The set-up costs for petrol stations vary, with estimates for franchises ranging between

roughly R10 million for an average site, up to about R100 million for a double-sided site along highways (Business Tech, 2017).

The value chain also contributes to the economy in other ways, including capital expenditure, payment of salaries and other employee benefits, as well as duties and levies for instance. Graph 3 shows some financial data as reported by SAPIA members, deflated to 2019 Rands. Compared to capital spending and spending on duties and levies, spending on employment costs declined (in real terms) by roughly 12% between 2010 and 2019. In contrast, capital expenditure increased by about 19% to R10 billion in 2019, while spending on duties and levies increased by about 92% to R131 billion. At about R5 billion (or about 5.3% of total value chain capital spending) in 2019, capital expenditure by the fuel retail segment was among the lowest, slightly higher than reported capital expenditure by the feedstock and imports segment.

Te profitability of petrol stations depends on more than pumping fuel. More and more, some petrol stations have added to their service offerings to include partnerships with banks, bakery and drinks, quick-service restaurants, as well as package delivery and carwashes. Still, these additional offerings have their own standards and ownership models, though

Graph 3: SAPIA members financials* (2019 constant Rand)



Source: Calculated from data provided by SAPIA (2021). Note: *Beginning in 2012, not all SAPIA members reported their financials, although it is not clear which members reported and which did not. As such, this information is not a complete reflection of the value chain's financial standing.

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franchises generally include the licence for these offerings. These additional services are particularly important because increases in the petrol price – linked to international crude prices – do not necessarily imply a major increase in the profit received by petrol stations. This is due to the way the petrol price is structured by the Department of Mineral Resources and Energy. As it currently stands, petrol stations receive just over 8% of the total petrol price per litre, with a greater share of the total (about 67%) going to petroleum companies (the franchisors). The balance of the price goes to the state for levies (about 22% of the total) and the transport companies. Moreover, petrol stations must still cover expenses, including employment costs as well as other expenses such as insurance for the business and the franchisor's equipment, along with subscriptions, among others.

UNDERSTANDING PETROL STATION WORKERS

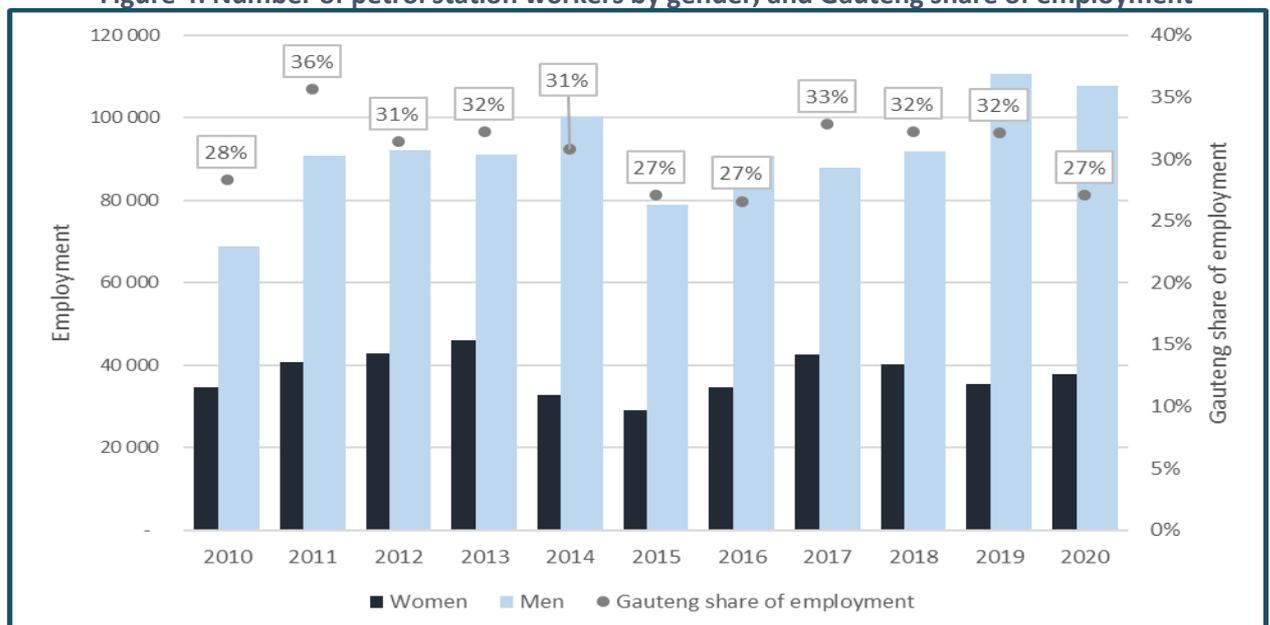
The transition to electric vehicles will significantly affect petrol station workers, whose employment is largely dependent on the sale of liquid fuels. Without adequate preparation, more than 140 000 people stand to lose their jobs between now and the final shift to full use of electric vehicles. Adequate preparation requires an understanding of petrol station workers. In essence, it is vital to understand what resources petrol station workers have that might enable them to easily transition away from fossil fuel-based jobs. This section provides an

overview of how many petrol station workers there are, and education level along with any financial resources they have.

As of 2019, more than 140 000 people are employed in petrol stations across South Africa (see Graph 4). The majority of these workers are employed as petrol attendants – mainly dominated by Black men. The balance of these workers are distributed across occupations such as clerks, management, technical professionals and elementary occupations such as cleaning. Women, who make up roughly a quarter of petrol station employment, generally occupy elementary and store clerk positions, while men dominate petrol attendant work, along with dominating management positions. For instance, more than 50% of women employed in petrol stations in 2019 worked as clerks, compared to about 7% for men. Further, whereas only about 5% of women were employed in management roles in 2019, about 11% of men were employed in these positions in 2019. With petrol station employment largely dominated by Black women and men, further disaggregation by race and gender becomes almost meaningless.

In provincial spread, petrol station employment is distributed across the country. However, the highest share of petrol station workers is in Gauteng (which accounts for roughly a third of petrol station jobs – see Graph 4). This is followed by KwaZulu-Natal and the Western Cape. In all, these three provinces account for about two thirds of total petrol station employment in the country.

Figure 4: Number of petrol station workers by gender, and Gauteng share of employment



Source: Calculated from Statistics South Africa. Labour Market Dynamics Survey. Electronic database. Downloaded from Nesstar facility at www.statssa.gov.za in July 2022

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Still, during interviews conducted for the National Employment Vulnerability Assessment work in 2019, employers in petroleum retail indicated that workers generally view petrol station work as a steppingstone to other work, business or educational opportunities, and thus do not stay in this work for long periods (Makgetla, et al, 2019). As noted in the study, this is validated by the lower median age of petrol station workers (about 36 in 2017), which is about two years below the median for other formal workers. Nevertheless, disaggregated data seemingly does not exist for job tenure, although data from the Labour Market Dynamics survey shows a slight increase in median job tenure across the country, from 48 months in 2014 to 49 months in 2019 (Stats SA, 2019:56).

Further, petrol station workers are generally not unionised, although employers are represented by the FRA. By some estimates, about one in 10 petrol station workers belong to a union, compared to about three in 10 for other formal workers. In part, this appears to be due to the structure of the fuel retail industry.

Local petrol stations are usually part of franchises, which tend to hire fewer than 20 workers per petrol station. Still, workers have some level of protection, with most having a written work contract and contributing to the unemployment insurance fund (UIF).

CRAFTING A WAY FORWARD

The transition to electric vehicles does not exist in isolation. Rather, it lies at the intersection of various decisions that are fundamentally related, and thus must be made together; decisions that are at the core of why clear timelines are necessary. Once made, these decisions will help clarify what support workers (and communities) affected by the transition to electric vehicles need.

This section begins by laying out what decisions must be made to begin the work of the transition, and follows by making recommendations for what possible support workers might be given.

Making the necessary decisions

There are no clear timelines for the full-scale transition to electric vehicles, globally and locally. While the European Parliament approved a ban of fossil-fuel vehicles by 2035, and numerous countries, regions and companies have committed to net zero carbon emissions by 2050, different factors make it slightly more complicated to commit to a clear (and even fixed) timeline for a shift away from liquid fuels. For instance, in South Africa, the high cost of electric vehicles hinders greater uptake of electric vehicles. Further, though to a lesser extent, inconsistent supply of electricity – which in any case is the largest single source of emissions due to coal use – might serve to deter uptake even as electric vehicle costs decline. Nevertheless, the fact of the climate crisis and its related impacts make it necessary that South Africa, and all other countries begin taking action to reduce emissions. This is important for South Africa given the contribution of the automotive value chain to the broader economy. Moreover, given the value chain's contribution to exports – the bulk of which go to the EU – a shift to electric vehicle production is necessary to retain that important market.

The first decision is about the cost of electric vehicles. According to Labuschagne (2022), the cost of an electric vehicle in South Africa is anywhere between R709 400 and R4.1 million. The average cost of an internal combustion engine vehicle (second-hand) is about R389 145 (Business Tech, 2021b). This cost disparity places electric vehicles far above what most South Africans can spend on a vehicle. As noted by Montmasson-Clair (2022:2), the local vehicle market is price sensitive, particularly quintiles one and two (average vehicle value below R265 000), which accounted for about 48% of volumes and only 27% of revenue in 2020. Even as the cost of operating an electric vehicle is lower in the long term, upfront costs remain a barrier for many consumers, especially those in quintiles one and two. To address the cost barrier, the state must make some important decisions about

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the kind of consumer (and producer) support that could be provided. Some countries have used tax credits to deal with this issue. South Africa could do the same. Similarly, the state could incentivise producers to manufacture electric vehicles locally, with as much local content as possible, to reduce the cost for consumers.

The second decision is about electricity supply, and roll-out of charging infrastructure. South Africa's electricity supply – which is emissions heavy – is inconsistent at best.

Eskom began implementing loadshedding in the latter part of 2007. The state-owned enterprise (SOE) announced three scenarios for electricity supply between 1 April 2022 and 31 March 2023. Based on these scenarios, the country could lose between 10 000MW and 15 000MW of power over this period, the high point of which could lead to about 295 days of loadshedding (Business Tech, 2022). More than half a year of unstable electricity supply would not make a conducive environment for the proliferation of electric vehicles. Moreover, loadshedding in general has created mistrust of Eskom among individuals and business, many questioning the SOE's ability to deliver on its mandate consistently. Even with these scenarios in place, a strike by Eskom workers in June and July this year led to weeks of multi-hour loadshedding across the country.

Thus far, South Africa has kept up with demand for charging infrastructure. Still, steps must be taken to ensure that as the shift to electric vehicles happens, the charging infrastructure is increased, with the view that most people prefer home charging, as noted by Montmasson-Clair (2022:3). More importantly, the distribution of public charging infrastructure must be distributed such that different locations – including those in non-urban areas – reap the related economic benefits. If, for instance, some petrol stations are converted to charging stations, some of these stations must be in non-urban areas where such infrastructure helps to maintain economic hubs.

In making these decisions and acting, the state would in essence be putting in place the tools for the transition to electric vehicles and would further serve to provide some sort of timeline for the transition to electric vehicles. As noted, knowing the timeline for the transition is important. It would largely define the scope of what is necessary, and how urgently. The next subsection looks at some of the possible support tools for petrol station workers who stand to lose jobs, based on how long the timeline is.

What kind of support is necessary?

The level of support petrol station workers will need largely depends on when the last batch of internal combustion engine vehicles will be taken off the roads. The average age of vehicles on South African roads is about 11.8 years. Supposing for instance that 2050 is when all internal combustion engine vehicles will be off the roads (assuming that electric vehicles are far more accessible and electricity supply is stable), there must be guiding policy to phase out these vehicles in line with the uptake of electric vehicles. That guiding policy must also be grounded on the phasing out of petrol station employment.² As noted, petrol station work is often transitory work. With proper planning, petrol station work would be phased out, with hiring completely stopped at a particular point in the agreed-on timeline. Still, this requires that there are other work opportunities to address the supply gap created.

For those workers who are not transitory (including for a shorter timeline like 2035), other measures would be necessary. These measures could be implemented in conjunction with the shift in the use of petrol station infrastructure – keeping in mind that there will also be natural attrition of workers. Briefly, these are some of those measures:

- **Early retirement:** while most petrol station workers are below the age of 40, about 36% are older than 40. Those closer to retirement could be offered early retirement packages, which would take them off the labour market, but would also leave them with some form of income.
- **Reskilling:** workers who cannot take early retirement can be reskilled for other jobs. Because of their work, petrol station workers have retail skills that can be transferred to the sale of other products. However, workers can also be trained to do other jobs not related to retail. A changing economy will create new jobs that will require new skills, for instance.
- **Expansion of social protection:** although most petrol station workers make contributions to the UIF, some level of social protection would be a necessary part of the support tools given to workers. A basic income grant has been discussed, for instance. Such a grant would be a vital tool that would enable workers who have lost jobs to continue living, as well as cover the cost of looking for new employment.

² *The ability to charge at home overnight, at work and in other public areas would greatly reduce the number of petrol stations necessary. The range per charge allows for this – except for long-distance routes in which petrol stations tend to be the most accessible public place.*

To mitigate job losses in petrol stations, alternative uses for petrol stations must be found. These can include economic hubs, charging stations, multi-use centres, markets for informal and formal traders, and affordable housing.

What to do with the infrastructure?

The existing petrol station infrastructure could remain as possible economic hubs to maintain and/or create new jobs. Several ideas have been considered, including green hydrogen as a transition fuel for the transport industry – particularly for large vehicles like buses and trucks.

Patel (2020:14) notes that green hydrogen provides similar refuelling patterns to internal combustion engine vehicles, and can be used in different vehicle types, including buses and trucks, for which fewer options exist. In addition to green hydrogen, other products such as sustainable petrol and diesel – which are co-products from sustainable aviation fuel (SAF) production – can also be explored and diesel – which are co-products from sustainable aviation fuel (SAF) production – can also be explored for petrol stations. These fuel types are chemically similar to petrol and diesel and would use the same infrastructure. These co-products would also help in growing the SAF value chain, for which local production capacity is estimated to be between 3.2 and 4.5 billion litres per year (Bole-Rentel, et al, 2022). There are some questions, however, about the long-term viability of these uses, particularly as trucks, minibuses and buses account for about 6% of the total vehicle population as of June 2021, a number that grows to about 27% when adding light duty vehicles.

Many other uses can be found for these petrol stations. Briefly, these can include:

- Charging stations: although most electric vehicle charging happens at home, charging stations could still play an important role to maintain economic hubs; especially along long-distance routes. In the United Kingdom for instance, Shell converted a petrol station to a charging hub equipped with free Wi-Fi and solar panels. While this would not be sufficient to preserve all jobs, it would preserve some.
- Multi-use centres: some petrol stations include various services, including restaurants and parcel delivery and warehousing. With parcel delivery in South Africa affected by dysfunction at the South African Post Office, some petrol stations could be used for affordable parcel and other deliveries.

- Markets for informal/formal traders: South Africa has many informal traders working on the side of the road. Petrol stations could be converted into an open marketplace with stall for informal traders to work from.

- Affordable housing: with the necessary rehabilitation, petrol station land could be used for affordable public housing. In part, this would help shorten the distances many low-income workers have to travel to reach employment.

However, keeping these places as economic hubs is important given the number of direct and indirect jobs they create in the communities they are located in. Still, one of the important decisions going forward would be to slow down investment in new infrastructure, which runs the risk of creating jobs that cannot be maintained, as well as leaving behind stranded assets.

CONCLUSION

Petrol stations are an important part of South Africa's economy. They provide jobs, sell goods, and provide the fuel that keeps the country moving. However, efforts to reduce GHG emissions require a move away from fossil fuels, a move which will lead to thousands of job losses in the value chain. However, the climate crises cannot be ignored. Rather, action must be taken to significantly reduce emission, and provide support to the many workers who stand to lose their livelihoods. The scope and level of support required by workers is, in some ways, dependent on how long the timelines are, and making the necessary decisions and taking steps to begin the transition in less disruptive way for workers and communities.

This would require the state and other stakeholders to make decisions. Briefly, it would require clarifying the timelines for a full shift to electric vehicles, and how to phase out the internal combustion engine vehicles on the road. In part, proliferation of electric vehicles requires lowering the upfront costs of electric vehicles, and to some extent, ensuring consistent electricity supply. Last, to mitigate job losses in petrol stations, alternative uses for petrol stations must be found, along with implementing the necessary support measures to support workers and the many communities supported by petrol station work.

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