

# Another petrol price increase - is it time for alternative engine technologies?

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Despite the numerous petrol price increases South Africa has undergone this year (approximately 18% since the start of the year), awareness and adoption of alternative fuel engine technologies are fairly low, according to a recent Synovate survey.

Synovate surveyed 4,568 respondents in the South Africa, United States, Canada, China, Malaysia, Singapore, Thailand, Russia and Morocco, probing their familiarity with, usage of and openness toward **hybrid electric vehicles**, **direct injection diesel** and **alternative fuel source** vehicles.

Globally, **hybrid electric vehicles** are the least familiar to consumers, with only 1 percent of those surveyed currently or previously owning such a vehicle. However, consumers in the US and Canada are more likely to consider hybrids over any other alternative to conventional engines. This technology is least familiar in South Africa and Malaysia, where 50 percent of respondents have never heard of this type of vehicle.

| HOW FAMILIAR ARE YOU WITH HYBRID ELECTRIC VEHICLES? |     |      |     |        |       |          |           |          |        |         |
|---|-----|------|-----|--------|-------|----------|-----------|----------|--------|---------|
|   | Tot | SA   | USA | Canada | China | Malaysia | Singapore | Thailand | Russia | Morocco |
| Own / Previously owned                              | 1%  | 1.7% | 2%  | 0%     | 2%    | 1%       | 0%        | 3%       | 0%     | 0%      |
| Have driven or ridden in one                        | 4%  | 5%   | 10% | 6%     | 8%    | 2%       | 0%        | 4%       | 1%     | 0%      |
| Have only seen one                                  | 13% | 16%  | 25% | 37%    | 13%   | 6%       | 7%        | 10%      | 5%     | 1%      |
| Have only heard of one                              | 37% | 50%  | 56% | 50%    | 27%   | 25%      | 30%       | 44%      | 17%    | 33%     |
| Never heard of one                                  | 30% | 24%  | 7%  | 7%     | 35%   | 50%      | 41%       | 37%      | 25%    | 45%     |
| Don't know / no answer                              | 15% | 4%   | 0%  | 0%     | 15%   | 16%      | 22%       | 2%       | 52%    | 21%     |
| SOURCE: SYNOVATE                                    |     |      |     |        |       |          |           |          |        |         |

**Direct injection diesel technology**, a dramatic improvement over its predecessor diesel technology in terms of fuel efficiency, performance and tailpipe emissions, enjoys the highest adoption, but still at a very low 5 percent among all those surveyed. This technology is most prevalent in South Africa, with 26 percent of respondents owning or having owned such a vehicle. Interestingly, for Americans this type of engine is the least familiar of the three technologies covered in the survey, with 37 percent never having heard of direct injection diesels.

"Diesel technology has improved dramatically over the last decade, as is evidenced by broad adoption in many European markets," says Jon Salters, Managing Director of Synovate Sub-Saharan Africa. "Outside Europe, however, it is plagued by consumer familiarity with older diesel technology most typically found in pickups and commercial vehicles, which are typically loud, rough and have visible tailpipe emissions. The challenge facing diesel advocates is how to get enough newer diesels into the market to expedite the same change in perception that has taken place in Europe." This is with the obvious exception of South Africa and Morocco.

| HOW FAMILIAR ARE YOU WITH DIRECT INJECTION DIESEL VEHICLES? |     |     |     |        |       |          |           |          |        |         |
|---|-----|-----|-----|--------|-------|----------|-----------|----------|--------|---------|
|   | Tot | SA  | USA | Canada | China | Malaysia | Singapore | Thailand | Russia | Morocco |
| Own / Previously owned                                      | 8%  | 26% | 6%  | 7%     | 4%    | 5%       | 1%        | 9%       | 1%     | 16%     |
| Have driven or ridden in one                                | 11% | 19% | 9%  | 22%    | 13%   | 5%       | 5%        | 8%       | 0%     | 20%     |
| Have only seen one  | 10% | 9%  | 10% | 16%    | 9%    | 7%       | 4%        | 12%      | 4%     | 18%     |
| Have only heard of one                                      | 26% | 23% | 38% | 25%    | 24%   | 26%      | 16%       | 52%      | 13%    | 16%     |
| Never heard of one  | 30% | 19% | 37% | 30%    | 36%   | 42%      | 49%       | 17%      | 29%    | 14%     |

|                        |     |    |    |    |     |     |     |    |     |     |
|------------------------|-----|----|----|----|-----|-----|-----|----|-----|-----|
| Don't know / no answer | 14% | 4% | 0% | 0% | 14% | 15% | 25% | 2% | 53% | 16% |
| SOURCE: SYNOVATE       |     |    |    |    |     |     |     |    |     |     |

Vehicles running on **alternative fuel sources** such as natural gas, ethanol, methanol or bio diesel are also a mystery for many respondents, as only 2 percent have bought into this technology, with Canadians topping the list at 4 percent. South Africa comes in second with 3 percent. While 91 percent of North Americans are familiar with this technology, by contrast 36 percent of Malaysians and Moroccans and 33 percent of Singaporeans have never heard of alternative fuel source-powered vehicles. 27% of South Africans have never heard of alternative fuelled vehicles.

"Alternative fuel vehicles are typically developed in small, experimental volumes for commercial application, which is why so few retail consumers have seen or even heard of them," explains Salters, adding that the fuelling infrastructure does not exist to offer general consumers a minimally acceptable level of convenience. "This is a serious 'chicken or egg' problem for the energy and automotive industries. Manufacturers can't afford to launch vehicles that are not supported by a refuelling infrastructure, and the energy industry can't afford to build the infrastructure and wait 10 years for enough vehicles to be on the road to make it worth their investment."

| HOW FAMILIAR ARE YOU WITH ENGINES WHICH RUN ON ALTERNATIVE FUEL SOURCES? |     |     |     |        |       |          |           |          |        |         |
|--|-----|-----|-----|--------|-------|----------|-----------|----------|--------|---------|
|  | Tot | SA  | USA | Canada | China | Malaysia | Singapore | Thailand | Russia | Morocco |
| Own / Previously owned   | 2%  | 4%  | 2%  | 4%     | 3%    | 3%       | 1%        | 3%       | 2%     | 0%      |
| Have driven or ridden in one   | 5%  | 6%  | 5%  | 9%     | 15%   | 4%       | 1%        | 3%       | 5%     | 0%      |
| Have only seen one   | 11% | 9%  | 15% | 25%    | 10%   | 7%       | 9%        | 13%      | 7%     | 2%      |
| Have only heard of one   | 44% | 50% | 68% | 55%    | 38%   | 37%      | 34%       | 69%      | 19%    | 30%     |
| Never heard of one   | 22% | 27% | 11% | 7%     | 23%   | 36%      | 33%       | 12%      | 16%    | 36%     |
| Don't know / no answer   | 15% | 4%  | 0%  | 0%     | 11%   | 13%      | 22%       | 0%       | 51%    | 32%     |
| SOURCE: SYNOVATE   |     |     |     |        |       |          |           |          |        |         |

**What factors would prompt consumers to purchase an alternative fuel engine technology vehicle?** The desire to produce less pollution comes first at 82 percent, with the need for better fuel economy a close second at 76 percent. Meanwhile, respondents who would not consider buying alternative fuel engine technology vehicles cite high cost as their main concern.

94 percent of South Africans believe that they would buy an alternative fuel engine technology because of **lower fuel consumption**. The other compelling factors would be **cheaper fuel** cost and **cleaner emissions**.

On the flip side, the major dissuading factor in South Africa is the **perceived expense of such a vehicle** (78%). Secondly, 72% of South African respondents felt that these vehicles offered **limited driving distance or range**.

"The principal perceived benefit of most of these technologies is a reduced impact on the environment, which while important, does not tend to strongly affect individual purchase behaviour in most markets," notes Salters. "As a result, consumers have not driven the demand for such vehicles. Instead, these vehicles have been regarded as requiring the consumer to pay a higher price and make unacceptable tradeoffs in areas like performance, vehicle size and design."

| MAIN REASON FOR CONSIDERING AN ALTERNATIVE FUEL VEHICLE |     |     |     |        |       |          |           |          |        |         |
|---|-----|-----|-----|--------|-------|----------|-----------|----------|--------|---------|
|   | Tot | SA  | USA | Canada | China | Malaysia | Singapore | Thailand | Russia | Morocco |
| Cleaner emissions or less pollution                     | 81% | 93% | 64% | 77%    | 90%   | 88%      | 94%       | 96%      | 55%    | 72%     |
| Better fuel economy or lower fuel consumption           | 75% | 94% | 57% | 48%    | 87%   | 67%      | 86%       | 95%      | 69%    | 72%     |
| Reduced consumption of natural resources                | 72% | 89% | 52% | 53%    | 89%   | 78%      | 88%       | 93%      | 59%    | 43%     |
| Cheap fuel cost   | 72% | 93% | 51% | 41%    | 78%   | 76%      | 81%       | 93%      | 66%    | 72%     |
| Reduces dependence on foreign energy                    | 66% | 80% | 67% | 36%    | 79%   | 79%      | 78%       | 90%      | 51%    | 35%     |
| Safe technology   | 68% | 92% | 23% | 21%    | 83%   | 86%      | 80%       | 95%      | 63%    | 70%     |

|                                    |     |     |     |     |     |     |     |     |     |     |
|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| No smell or odour                  | 65% | 83% | 26% | 25% | 81% | 78% | 83% | 85% | 60% | 61% |
| Longer driving distance or range   | 59% | 82% | 23% | 15% | 69% | 77% | 71% | 81% | 51% | 66% |
| Abundant fuel source               | 59% | 81% | 37% | 26% | 63% | 62% | 71% | 86% | 54% | 50% |
| Technology ready for market        | 57% | 83% | 17% | 16% | 73% | 78% | 69% | 76% | 46% | 53% |
| Better acceleration or performance | 52% | 64% | 10% | 5%  | 61% | 73% | 64% | 71% | 47% | 70% |
| SOURCE: SYNOVATE                   |     |     |     |     |     |     |     |     |     |     |

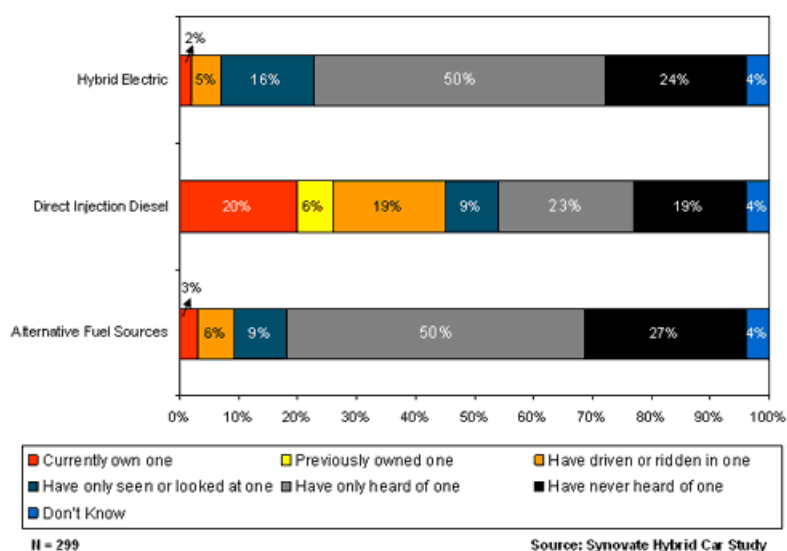
But hybrid vehicles may be leading a change in consumer attitude in some markets where they are being promoted aggressively by well-respected manufacturers such as Toyota and Honda. And the required sacrifices are disappearing, with some new hybrids actually boasting better acceleration than the vehicles' conventional engine options.

"The environment is becoming increasingly important to the consumer," concludes Salters. "Now they have an option to 'do the right thing' for society without giving up the things that matter to them as individual vehicle buyers."

## South Africa in summary...

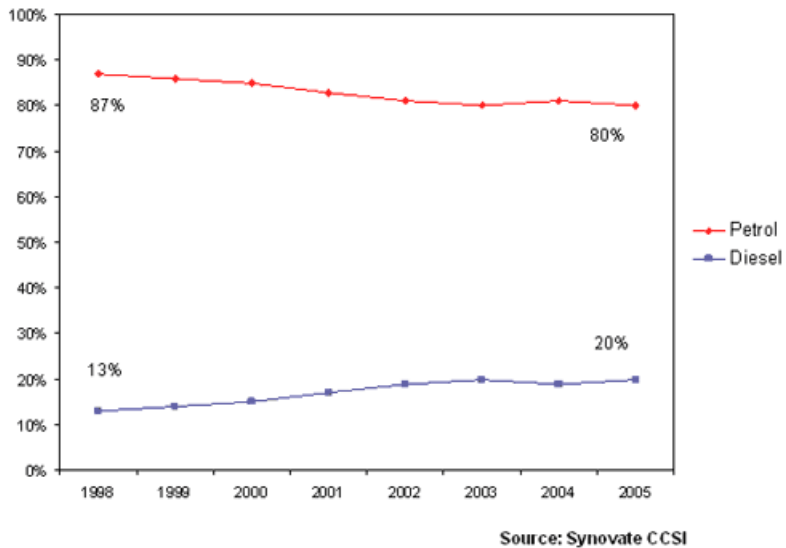
Direct Injection Diesel engines have enjoyed the most popularity and adoption thus far.

## South African familiarity with alternative engine technology:



## Trends in the South African Vehicle Market: Increased Adoption of Diesel Technology

The use of diesel technology engines has gained more and more acceptance since 1998. The graph below includes both LCV and Passenger Vehicles sales (distributed through all channels).



## CURIOSITIES

- > The most appealing alternative fuel engine technology for a potential buyer in South Africa is a clean diesel power plant (81 percent)
- > 59% of South Africans who would not consider buying alternative fuel engine technology vehicles are dissuaded by perceived poorer performance.

To read Synovate's article 'The Green Machine' on alternative vehicle technology and fuels, please email

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