

ED95 Fuel

ED95 designates a blend of 95% ethanol and 5% ignition improver and is used in modified diesel engines where high compression is used to ignite the fuel. This fuel was initially developed by Swedish ethanol producer SEKAB. Silversands Ethanol is paving the way for large scale local production of ethanol fuel.



silversandsethanol

www.silversandsethanol.co.za



Advantages of using ED95:

- ◆ Using ethanol fuel cuts fossil carbon dioxide emissions by up to 90%.
- ◆ As the blend is purely ethanol and requires no fossil fuel blends, there is no dependency on these technologies.
- ◆ Lower costs of ethanol fuel when compared to diesel prices.
- ◆ Subject to Environmental Business Finance Plan (EBFP) funding.
- ◆ Local production of ED95 reduces the dependency of international market fluctuations and import regulations.
- ◆ Local production leads to job creation within the South African economy.
- ◆ Carbon credit generation.

Current Drawbacks of ED95:

- ◆ The cost of an ethanol driven bus is on average 5-7% more expensive than the comparable diesel bus.
- ◆ Bioethanol engines require regular maintenance every 10,000km whereas their diesel counterparts are serviced every 15,000km.
- ◆ As ethanol fuel contains less energy per litre, there is a higher fuel consumption when compared to diesel.
- ◆ The size of the ethanol fuel depot distribution network when compared with long standing fossil fuel networks.

Company Background:

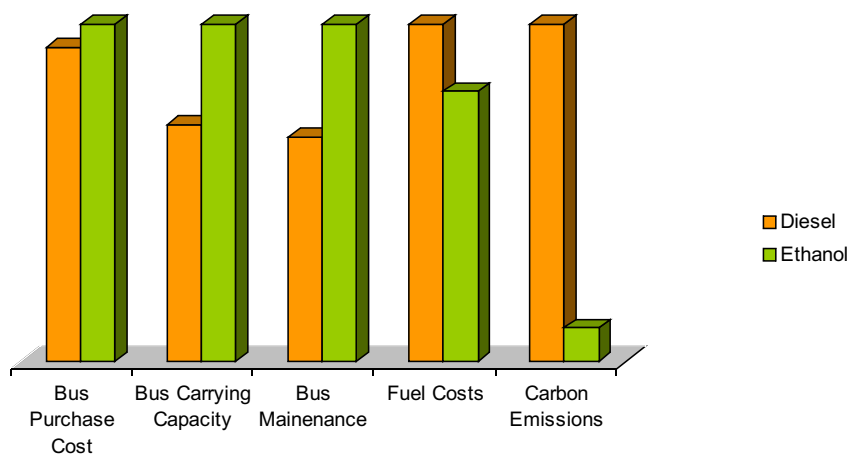
Silversands Ethanol was initiated by a group of entrepreneurial farmers in the Lichtenburg district and has been producing raw ethanol since 2006. Currently the Silversands product range includes the production and distribution of **ED95** as well as the manufacture of a range of Ethanol Gel products for domestic heating/cooking purposes.



Cost implications bound to ED95:

The following implications have a financial impact on the comparison between ethanol and diesel fuels and their subsequent efficiencies:

- ◆ Cost of ethanol fuel approximately 20% cheaper than diesel.
- ◆ Cost of ethanol bus 5-7% more expensive than a diesel bus.
- ◆ Up to 30% larger bus body can be carried by an ethanol powered engine.
- ◆ More regular service requirement for ethanol vs diesel engines.
- ◆ Carbon credit generation from using ethanol fuel, by saving up to 90% on fossil carbon dioxide emissions.



The Biofuels Industrial Strategy:

The Biofuels Industrial Strategy approved by cabinet in December 2007, has set the following biofuel targets as per the Department of Minerals and Energy:

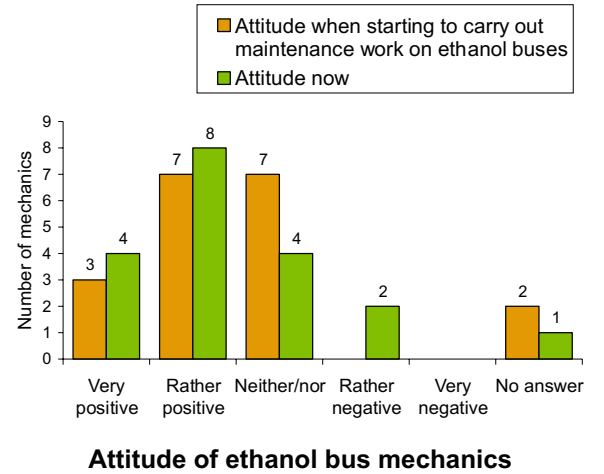
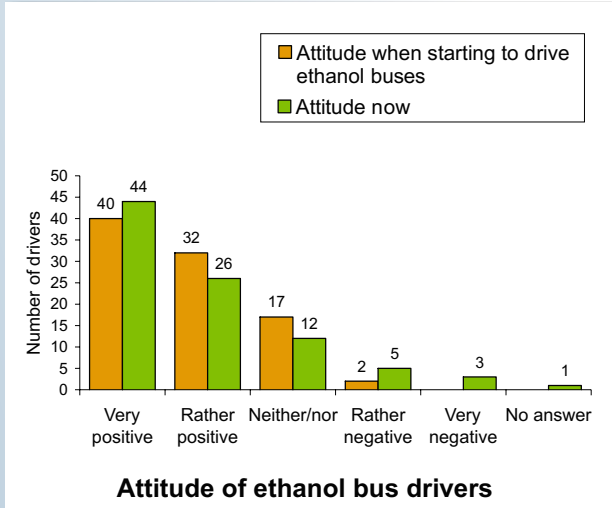
"The Biofuels Industrial Strategy has adopted a short-term focus and aim to achieve 2% penetration of biofuels in the national liquid fuel supply, which is equivalent to 400 million litres per annum. This will contribute 35% to renewable energy targets. The strategy also proposes that the existing fuel levy exemption for biodiesel be extended to bioethanol. The strategy proposed that for Biodiesel the levy exemption be increased to 50% and for bioethanol, 100% fuel tax exemption is proposed.

It is hoped that the biofuels industry will stimulate rural economy, create jobs, help reduce greenhouse gas-emissions and boost foreign exchange".



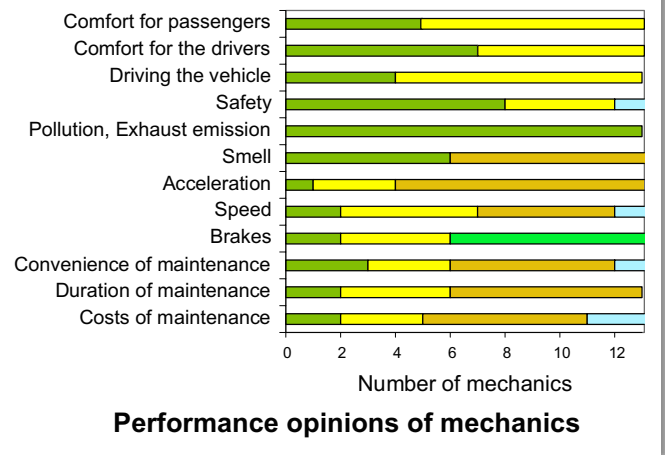
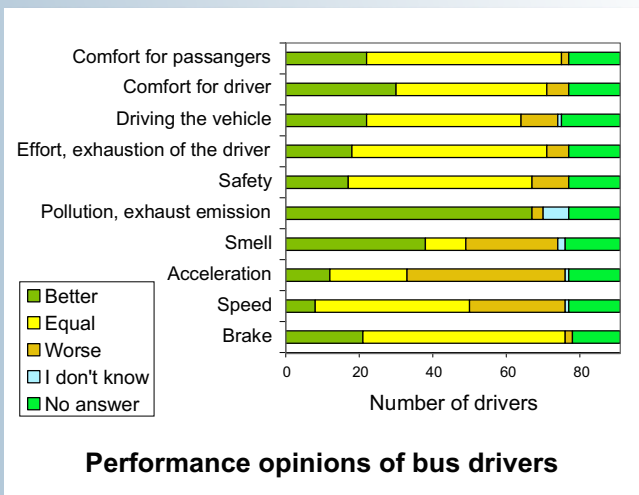
Bus Driver & Mechanic attitudes toward Ethanol Buses:

The BEST (BioEthanol for Sustainable Transport) project conducted a survey published in March 2010, to determine the attitudes of bus drivers and mechanics toward ethanol buses. The group consisted of individuals from Italy, Sweden, Spain and Brazil:



Source: BioAlcohol Fuel Foundation, BEST Wp2 Buses Final Report

The BEST project also asked the research group what their opinions were toward the performance of ethanol vs diesel buses:



Source: BioAlcohol Fuel Foundation, BEST Wp2 Buses Final Report