Trends in Future Fuels for Mobile Applications

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ABSTRACT

The global energy and fuel needs now and even in the foreseeable future will still be met by fossil primary energy sources. It is expected that cheap sources might be depleted in 30 to 50 years from now, starting with mineral oil to be followed by natural gas. This should cause increases in fuel prices and a stronger political and economical dependence on countries providing primary energies. Nuclear energy and renewable energies might not yet be available by then in sufficient amounts to relieve this situation significantly. The world-wide efforts to develop alternative power trains, e.g. electric drives with batteries or fuel cells, will provide locally emission-free propulsion systems. Their contribution to reducing fuel consumption and CO\textsubscript{2} emissions, however, will depend also on the availability of renewable fuels. Over an extended transition time synthetic fuels made from natural gas (and later even from coal) by well-known technologies will acquire an increasing market share. Their production economy will improve with rising fuel prices. The quality of synthetic fuels is superior to today's fuels opening up new avenues for engineering internal combustion engines with still better fuel economy and minimum emissions.