

Preliminary assessment of the performance of shale-derived diesel fuel

John Parsons

QER Pty Ltd, Australia

A quantity of shale from the Stuart deposit in Australia was retorted and the raw oil product was upgraded to comply with Australian Fuel Quality standards for ultra-low sulfur diesel fuel. This fuel was either evaluated as an undiluted neat diesel fuel or blended in varying proportions with conventional retail diesel. Conventional diesel was also used as the reference or base fuel. These fuels were evaluated to assess the impact on regulated emissions and fuel economy in a heavy-duty diesel engine and in a standard on-road light duty diesel vehicle. Test cycles used were compliant with United States, Australian and European requirements. The results have concluded that under the test conditions employed that the use of blended shale derived diesel or neat shale derived diesel did not yield results that were different from those from the use of conventional diesel. Further evaluation and long-term fleet trials using shale derived diesel fuel is planned using ultra-low sulfur diesel fuel from QER's technology demonstration plant currently being commissioned in Gladstone, Australia.