

GEOPHYSICS: PRI CHALLENGES IN THE 1990s

KHALID NGAH

**PETRONAS Petroleum Research Institute
Lot 1026, PKNS Industrial Estate
54200 Hulu Klang, Selangor**

Hydrocarbons are non-renewable commodities. Based on present rate of world consumption, the currently known world reserves will not last very long. Man will eventually need to rely on other fuel sources for energy. There are still substantial coal reserves which are exploitable, but man's concern for environment may not allow the coal reserves to be exploited fully and extensively. The consideration for nuclear energy as an alternative energy source to-day becomes less certain. This is proven by the Chernobyl disaster. Hydro, solar, wind and wave are non-depletable energy sources. These are abundant, but generally they have not been harnessed extensively. What is the potential of water as an eventual energy source? Can the energy locked in water be harnessed? For short term measures, man would probably:

- (a) exploit the use of the remaining hydrocarbons more intelligently and prolong their availability for more useful products,
- (b) optimize hydrocarbon recovery through proper reservoir management, and
- (c) continue aggressive exploration for additional reserves, employing new technologies and new thinking concepts. As one wise man said "oil is found in the minds of men".

Hydrocarbon reserves in Malaysia will face the same future. Unless new reserves are found, Malaysia will one day join the "hydrocarbon importing league". PETRONAS therefore has a big task at hand: to ensure that not only will the country's hydrocarbon production meet demand but also exceed demand, and, that our future generations will continue to enjoy the benefits generated by it. To make these a reality, PRI developed focused research strategies, and these include the applications of geophysical tools to enhance:

- (a) the understanding of subsurface geology and
 - (b) the prediction of occurrences of porous media at depths and the nature of fluids contained within the media.
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