

# Planning for the post-petroleum era

THE DEVELOPMENT of solar power and hydrogen fuels are not the only ways to reduce our dependence on fossil fuels, according to an Australian professor.

Jeff Kenworthy, Associate Professor of Sustainable Settlements at Murdoch University's Institute for Sustainability and Technology Policy, told delegates at the recent 'Western Australia: Beyond Oil' conference that the key to survival in the post-petroleum era may be to become more like our European cousins and change our urban and transport planning strategies.

With the International Energy Agency forecasting that transport will over-take industry as the largest user of energy, something clearly needs to be done to cure our cities of 'auto-dependence'.

It is smart urban planning – like 'pedestrianising' our cities and area-wide traffic calming – which can go a long way to removing this reliance, says Professor Kenworthy.

By creating 'environmental boulevards', where a mix of

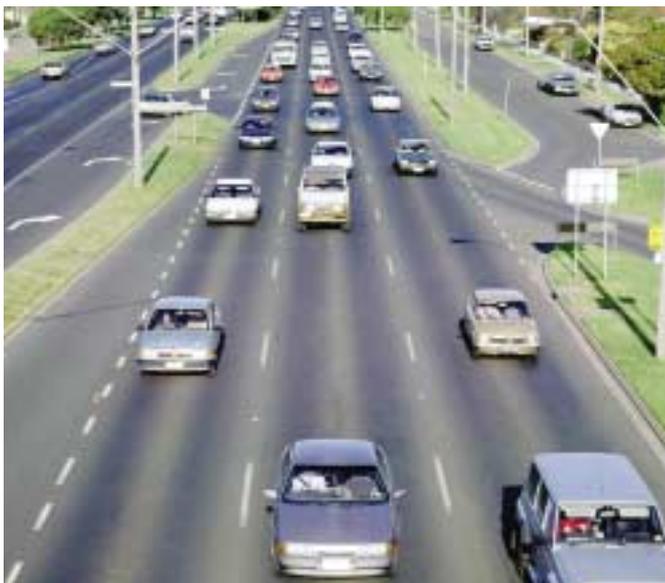
motorised and non-motorised transport, walking and cycling are encouraged, energy is saved, the livability of the city is enhanced and urban businesses can benefit from the passing trade, he says.

These planning considerations are especially important when a city is considering its new developments. Professor Kenworthy cites an example from Munich where a new suburb has been created around a U-Bahn station. Parking is placed totally underground, and roads only around its periphery to ensure maximum use of walking, cycling and public transport. The whole public realm of the development is for people not cars.

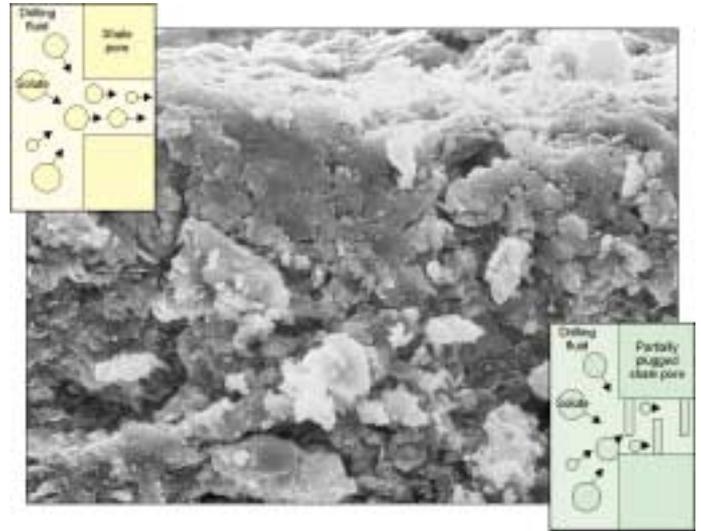
Professor Kenworthy also says that railways should feature in city planning.

Light Rail Transit (LRT) systems or tramways are one of the best forms of rail transport, he says, as they are efficient to run and can be operated on renewable energy sources.

[Kenworth@central.murdoch.edu.au](mailto:Kenworth@central.murdoch.edu.au)



'Pedestrianisation' of our cities may help cure Australia's 'auto-dependence'



SEM image of shale pores plugged with membrane generation compound

# Green muds to clean up the oceans

AUSTRALIAN AND US researchers have developed a 'green mud', which is set to be a hot ticket item for the oil and gas industry.

A team of CSIRO Petroleum scientists, in conjunction with US firm Halliburton Energy Services, have developed a low-cost, environmentally-friendly, water-based drilling mud to replace traditionally used oil-based and synthetic substances which can be nasty ocean pollutants.

The petroleum industry has, in the past, avoided water-based muds due to their inferior stabilising properties. But according to CSIRO scientist Dr Chee Tan, these new high performance 'green muds' – which comprise special polymers which coat the wellbore surface to prevent extraneous fluids destabilising it – are far superior to other water-based muds, are as efficient as traditional methods, and are more cost effective.

The conventional muds become pollutants when they are disposed of, Dr Tan told *Ecos*.

During the drilling of an oil well, 'cuttings' of rock extracted from the core of the wellbore become coated with the stabilising muds. Once analysed back on the oil rig these contaminated rock and clay cuttings were commonly dumped overboard. With each well potentially producing thousands of metres of cuttings the ocean pollution implications became obvious.

'The new 'green muds' also have the potential to reduce the number of oil wells', says Dr Tan.

'With collapsed and sidetracked oil wellbores, lost tools and abandoned wells costing the global oil and gas industry \$2 billion annually there is an urgent need for a new generation of water-based drilling fluids,' said Dr Tan.

Industry insiders predict a total eradication of oil-based muds by 2006. This bodes well for the project partners, who stand to enjoy commercial returns through a royalty stream on sale of the new product.

[www.dpr.csiro.au](http://www.dpr.csiro.au)