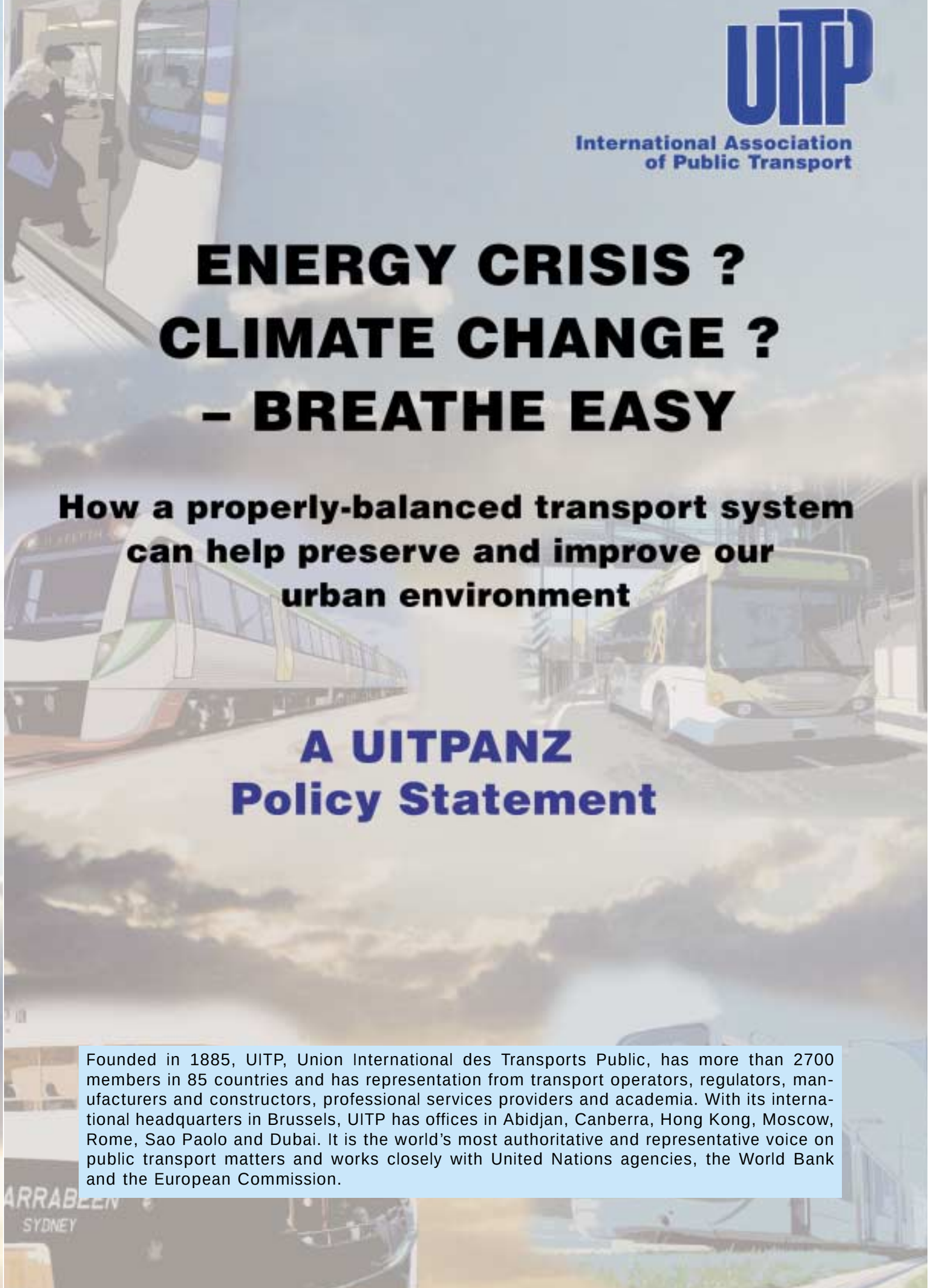


International Association of Public Transport

ENERGY CRISIS ? CLIMATE CHANGE ? – BREATHE EASY

How a properly-balanced transport system can help preserve and improve our urban environment

A UITPANZ Policy Statement

Founded in 1885, UITP, Union International des Transports Public, has more than 2700 members in 85 countries and has representation from transport operators, regulators, manufacturers and constructors, professional services providers and academia. With its international headquarters in Brussels, UITP has offices in Abidjan, Canberra, Hong Kong, Moscow, Rome, Sao Paolo and Dubai. It is the world's most authoritative and representative voice on public transport matters and works closely with United Nations agencies, the World Bank and the European Commission.

Cities at the crossroads

At the start of the 21st century, Australia and New Zealand, like much of the developed world, finds itself at a critical decision point. For half a century, our cities have followed a growth pattern that has only been possible because of readily available, affordable motorised transport. Most of us now live considerable distances from where we work, shop or socialise, but we still manage to get around in reasonable times due to a very effective road system.

Without this mobility, our cities would have been quite different – more like the older, more compact suburbs close to our city centres. They would probably also be safer and healthier, because with the motorised, dispersed city has come a distressing road toll and a fall in personal fitness (because travel distances are too great for walking).

Many of us thought this low-rise expansion could go on indefinitely, but it is now clear we were wrong and that we will have to re-engineer our cities over the next few decades.

Why is this so?

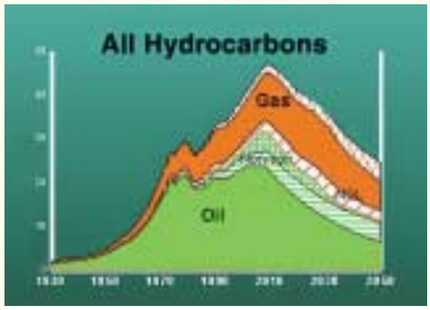
Firstly, it's now clear that the age of low-cost energy is coming to an end and that, over the next 10 to 20 years, many of us will not be able to afford to drive the distances that we presently cover.

Secondly, the jury is no longer out on climate change. Unconstrained use of carbon-based fuels is a major contributor to global warming and, for this reason alone, we must moderate our use of oil and coal.

The energy outlook

Half of the oil that ever existed has now been consumed in less than 100 years

All fossil energy sources are finite. They won't last for ever – in fact, at current rates of consumption, the remaining lives of our oil and gas reserves can probably be measured in decades and their decline will have far-reaching economic effects. For instance, as our own oil fields are exhausted, we will become dependent on imports with significantly increased exposure to price rises through increased demand, currency fluctuations, and the ever-present risk of supply disruptions due to international politics.



We have enough coal to last another century or two, but it's not really suitable for use in small vehicles and is best suited to stationary power generation.

Oil and gas supplies won't just dry up overnight; they will tail off over several decades and the associated price rises will make alternative fuels more attractive but, within most of our lifetimes, we will see major reductions in the availability of fossil fuels.

The climate outlook

Even if our oil, gas and coal reserves were limitless, we would still have to confront the need to limit their use. This is because the atmosphere can no longer absorb the products of their combustion. If we don't find a way to prevent the release of greenhouse gases, or move to alternative non-greenhouse energy sources our climate will be destroyed forever. At present rates of consumption, we are looking at tangible global warming by mid-century. And consumption is increasing as the major economies of China and India expand and develop.

In spite of the rhetoric from governments around the world, current responses to climate change will, at best, only moderate the growth in greenhouse gases.

Recapture of some of the products of combustion has been proposed as a way of enabling the continued use of carbon-based fuels, but that is a formidable engineering challenge for fixed power stations, let alone moving vehicles and aircraft. And it remains to be proven that gases like CO^2 can be captured and contained in the quantities that they are being generated.

Where do we go from here?

It's easy to look back but harder to look forward

Clearly we can't go on living as we do, given the twin challenges of fossil fuel depletion and climate change. But, if we are to achieve a sustainable environment, profound changes will be needed in the way our cities are structured and how they operate. In respect of transport, we must find ways to reduce the distances that we travel and a range of travel options that depends less on burning oil. Let's consider the changes that might be necessary.

Typically, in Australia and New Zealand, 70% to 90% of journeys are made by car, 5% to 10% by public transport and the balance by other modes such as walking and cycling.

A more energy-efficient city should have major development concentrated in regional centres and along the transit corridors that connect them; lower-density areas should be within 10 to 15 minutes walk of such a corridor. Within such a structure, individual vehicle use should be reduced because of the lesser distances travelled but, inevitably, with increasing fuel costs, we would still have to look to a better balance of transport options.

The major proportion of transport infrastructure investment over the last 50 years has been in our arterial road and motorway systems and it has given us a greatly enhanced lifestyle. This seemed like an appropriate solution at the time, but, we now know that it came with environmental and social costs that weren't fully appreciated. However, the existence of this infrastructure presents opportunities for a better-balanced transport system because, in future years, it has the potential to accommodate the transit corridors where we will need them. Over time, it should be possible to make better use of existing road space by adapting it to accommodate systems such as light rail or bus rapid transit. What will distinguish future transit systems though, is that they will almost certainly operate on electrical power from the grid. This is because almost all of the alternatives to oil and gas lend themselves best to centralised generation. This is true whether they be based on hydro, wind or geothermal power, on 'clean' (i.e. CO2-sequestered) coal, or even on nuclear power.

Hydrogen fuel cells, might well offer a mobile form of electrical energy but it should be remembered that they emit water vapour which is, itself, a greenhouse gas. This, combined with the challenges of distributing and dispensing hydrogen, suggests that the fuel cells are unlikely to be as viable as oil as a mass market power source. In the long run, though, fuel cells should have applications in larger vehicles such as buses, coaches and road freight.

An interesting recent concept is for vehicles powered by compressed air; these are clearly emission free and can be recharged by electrically powered compressors.

So the core of our transport system in 30 to 50 years time is likely to be a comprehensive, city-wide transit system powered by electricity. To accommodate this, we must start planning now. No urban planning strategy which claims to look more than 10 years ahead can be accepted if it ignores the twin inevitabilities of oil depletion and climate change.

What needs to be done?

It's time to start planning for a better-balanced portfolio of travel options. The combination of private cars and public transit systems needs to be optimised to ensure efficiency and sustainability for future generations. First, we need to identify and reserve future transit corridors. Second, we need to set firm agendas for their development and establish budgets for the transport infrastructure, the rollingstock, and the services that they will accommodate.

Third, we must take steps to preserve existing transit corridors, both heavy rail, light rail and busways and set clear goals for their future development.

Given the magnitude of the changes needed to our transport systems to suit our future city structures, we also need to think about the institutional arrangements that can provide infrastructure, energy distribution systems and services. Clearly, a closer relationship will be required between the roads authorities, which are best placed to manage the civil and mechanical engineering issues, and the public transport agencies which have the mass transit experience.

Both road and rail industries have expertise in intelligent transport systems. Clearly some redefinition of charters will be desirable as the boundaries of their activities merge. Naturally, these agents must work hand-in-hand with the land-use planners.

This is not Transit Oriented Development; it is Transit *Intregrated* Development and it needs to start soon. Importantly, it needs to be tackled on a region-wide basis – piecemeal plans driven by local ad hoc opportunities should be avoided at all costs.

Funding Issues

There is always justifiable concern about where the money will come from to fund major strategies, especially those that are likely to extend over decades. Firstly, we should not overlook the funds that are already being invested in transport but which are, at present, mode-specific. We cannot continue to separate funds in this way if we are to develop a unified transport system – the pie is going to have to be cut differently. In future, public funding must be combined into one pool and allocated between transit and roads according to need as demonstrated by cost-benefit analysis.

Another prime source of infrastructure income can be obtained by capturing some of the increase in land value that will accrue from the consolidation of commercial centres and the development along the transit corridors – this has been a popular and a painless way of funding transit infrastructure in places such as Hong Kong and Curitiba; in a smaller way, it has happened in Australia through development of air-space over transport interchanges.

It is also now clear that there is a place for road congestion charging provided that the income is 100% dedicated to public transport improvements. London's CBD cordon charge has been an outstanding success in this regard, clearing the roads for better environmental and economic benefits.There is ample evidence that, where the patronage is adequate and predictable, there is an appetite for private sector investment in infrastructure and rolling stock. But there is also a need for public money and, sooner or later, governments must face up to the need to transfer investment from roads to transit.

User charges are important both on the road and in transit systems but the cost recovery of the roads system is far superior. Governments generally do their utmost to offer attractive concession fares because, in our car-dominated travel system, many transit users include a disproportionate number of young people, seniors and people on low incomes. In a more balanced transport environment, the proportion of full fare payers should increase, improving cost recovery and increased patronage should enable economies of scale that also improve cost recovery.

It is also important to reconsider how people pay for their car use in order to level the playing field between private vehicles and public transit. At present, car use requires some major up-front annual payments: third party insurance, comprehensive insurance, registration taxes and so on. The day to day cost of travel is then marginal. On the other hand, when we use transit, we pay a fare that rolls up all of the standing charges and collects them on a per trip basis. In this environment, there is little incentive for a motorist to use transit – the rational decision is to get value from the investment in vehicle standing charges.

Add to this, in the case of company cars, a fringe benefits tax regime that reduces the tax payable, the more one drives and it is easy to see that transit is at a disadvantage.

Governments need to address these distortions if we are to pave the way for more use of transit. Technology is now available to charge for road use by the kilometre and to increase the charges at times of peak congestion. In Europe, insurance companies are trialling systems that charge premiums according to the use of the vehicle through the installation of GPS-linked on-board recorders. We also note that, to all intents and purposes, road use taxes can be easily collected for light vehicles at the petrol pump, with the added advantage that charges can be structured to encourage use of energy-efficient and environmentally-friendly models.

Our Plan

UITP submits that the most important issue confronting urban life is the coming squeeze on energy. Whether it is through depletion of reserves or usage restrictions to limit climate change, we need to be ready for the changes that must be made over the next 10 to 25 years.

For a sustainable future, we must have a clear plan for how our cities will overcome their fossil fuel dependency and be functional into the future. The research indicates that there is strong support in the community for diversion of investment to transit; this is perhaps the single most important issue in the sustainable transport discussion at this time.

Each plan must include:

1. Improving city design by limiting further low-density sprawl and encouraging more compact urban layouts that can be supported by transit systems.
2. Clearly setting out the costs of alternative travel options including the costs of congestion, energy, air pollution and health, then getting the pricing right.
3. Reserving new corridors for transit, and protecting the existing corridors, to allow for the provision of quality, high-frequency services that maintain mobility within defined energy and greenhouse budgets.
4. Providing quality alternatives to travel by private automobile.

This requires clear urban planning strategies which look at more than one or two election cycles ahead. There is a need to develop an urban strategy in each city and to stick to it. In our bipartisan political system, that means getting support from both sides of the political spectrum. It also means getting buy-in from the Commonwealth government which still seems to have little interest in the internal affairs of our cities notwithstanding that 85% of Australians live there. The benefits of getting our transport systems right include a cleaner environment, less dependency on dwindling fossil fuel resources, lower travel times and, by freeing up road capacity, a more efficient freight sector.

The Way Forward

When major oil companies start running ads about oil depletion, we should know that we have a problem. Now is the time to start the great urban debate and to build on the work that has already been done by, for instance, Sydney University's Warren Centre. The public appetite for this debate was demonstrated by reaction to the Sydney Morning Herald's 2005 'Campaign for Sydney'.

UITP, is well-placed to participate in these debates about our transport future and will work, unilaterally or in coalition with other groups in the community, to bring attention to our cities' long-term development needs. We welcome interested groups to join us in this vital campaign.

In September 2006, UITP will host a major national conference to examine the energy supply and climate change challenges and to develop a template for urban development that can be adopted by all Australian cities. Our aim is to have this urban development manifesto endorsed by the national government and the governments of all States.

To join us in this important task, or for more information, please contact the Executive Director of UITP (Australia/New Zealand), Peter Moore on 02 6247 5990 or email us at peter.moore@uitp.asn.au.

There's no time to lose

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