

# Federal Initiatives on Emissions Reduction, and the Garnaut Review

Nick Low

# **Federal Activity on Climate Change and Transport**

## ***Emissions Trading Scheme Initiatives***

- National Emissions Trading Taskforce (now finished)
- Prime Ministerial Task Group on Emissions Trading
- Dept. of Climate Change: National Emissions Trading Scheme

## ***Climate Change Inquiry***

- Garnaut Climate Change Review

## ***Transport Policy***

- National Transport Policy Framework:  
Ministerial Working Group on Climate Change, Environment and Energy

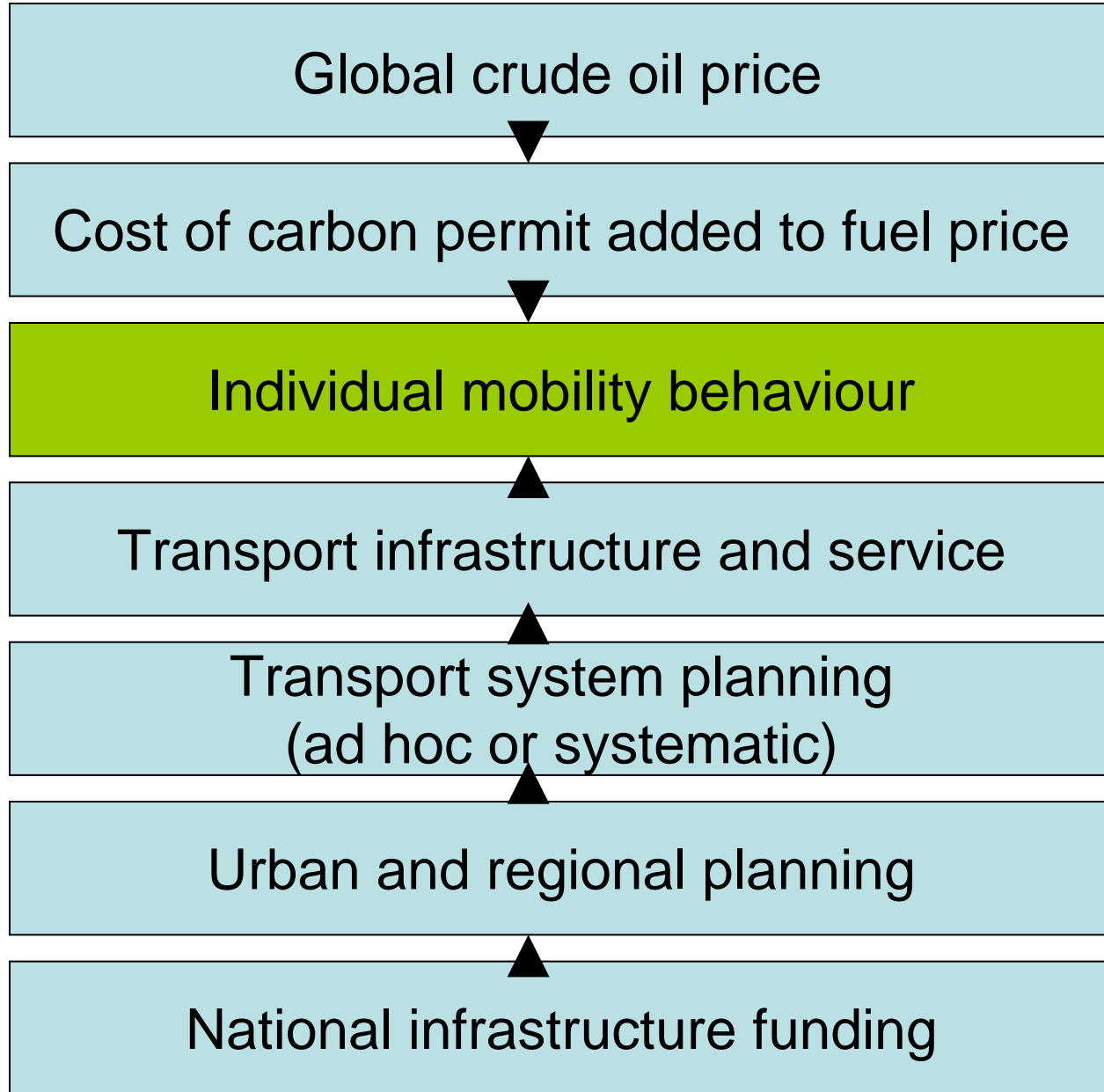
## ***Other***

- Mandatory Renewable Energy Target
- Environmental Strategy for the Motor Industry
- Biofuels Initiatives (incl. Biofuels Capital Grants program)
- Alternative Fuels Conversion Program
- Energy White Paper (2007) *Securing a Sustainable Energy Supply for Australia* initiatives
- Sustainable Communities Initiative

# The Garnaut Review: Key Points

- Change in transport systems will occur over next 100 years independently of climate change mitigation strategy.
- Governments have a major role to play in reducing the economic costs of adjustment to higher oil prices, an emissions price and population growth, through planning for more compact urban forms and rail and public transport.
- Under strong mitigation scenarios, emissions from Australian land transport will fall rapidly around the middle of the century.
- The path to low-carbon transport will be driven by variations in rates of technological progress across and within transport modes.

Impact of price on individual behaviour mediated by government



Global crude oil price



Cost of carbon permit added to fuel price



Individual mobility behaviour



Transport infrastructure and service



Transport system planning  
(ad hoc or systematic)



Urban and regional planning



National infrastructure funding

GARNAUT

State government provision

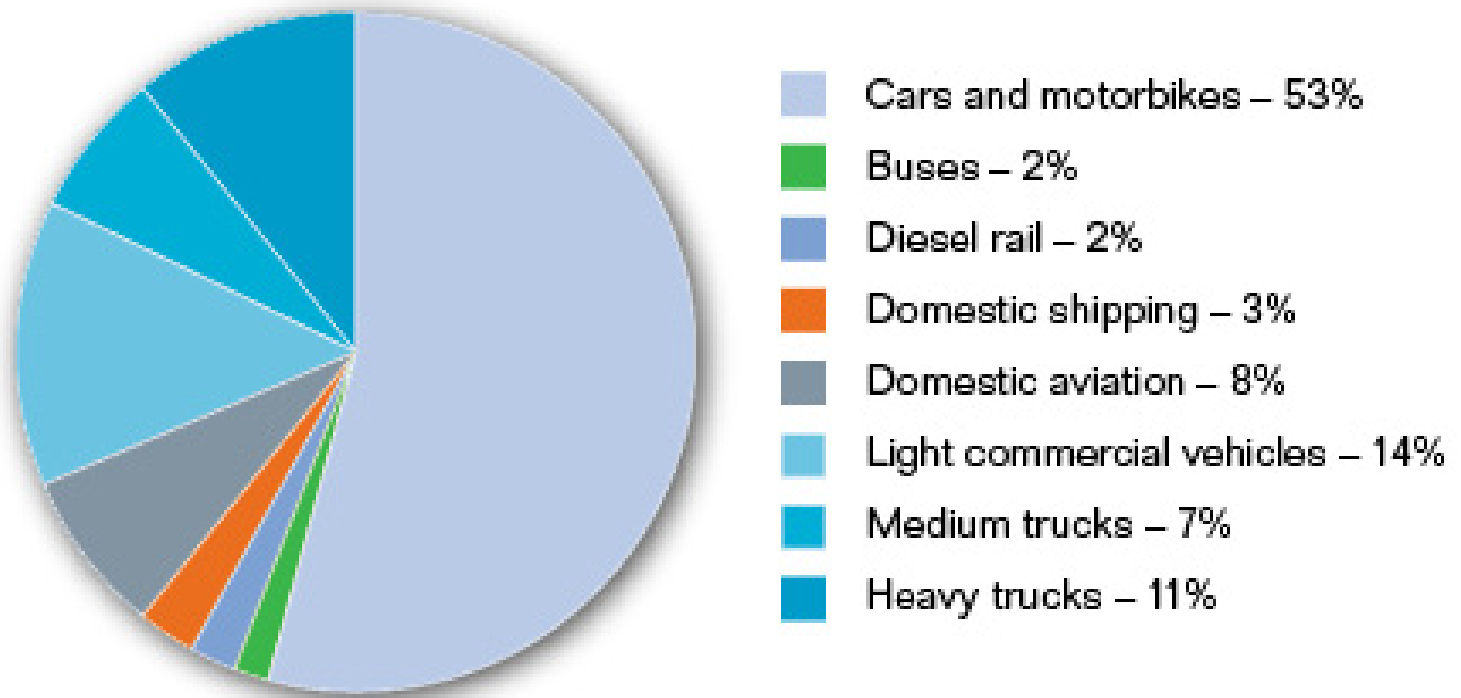
EDDINGTON

# Interactions of the emissions trading scheme with other factors:

- Higher global oil prices
- Research and development in vehicle and fuel technology
- Population growth
- Government decisions on transport infrastructure, public transport services and land-use planning, induced in part by the other factors.

# Paths to low carbon transport:

- Vehicles becoming more fuel efficient and shifting to low-emissions fuels, such as electricity
- A shift to lower-emissions modes, such as rail and public transport, accompanied by changes in the structure of towns and cities (urban form)
- Reduction in travel frequency and distances, facilitated by changes in consumption, production and distribution patterns and changes in urban form, and driven by changing relative prices.



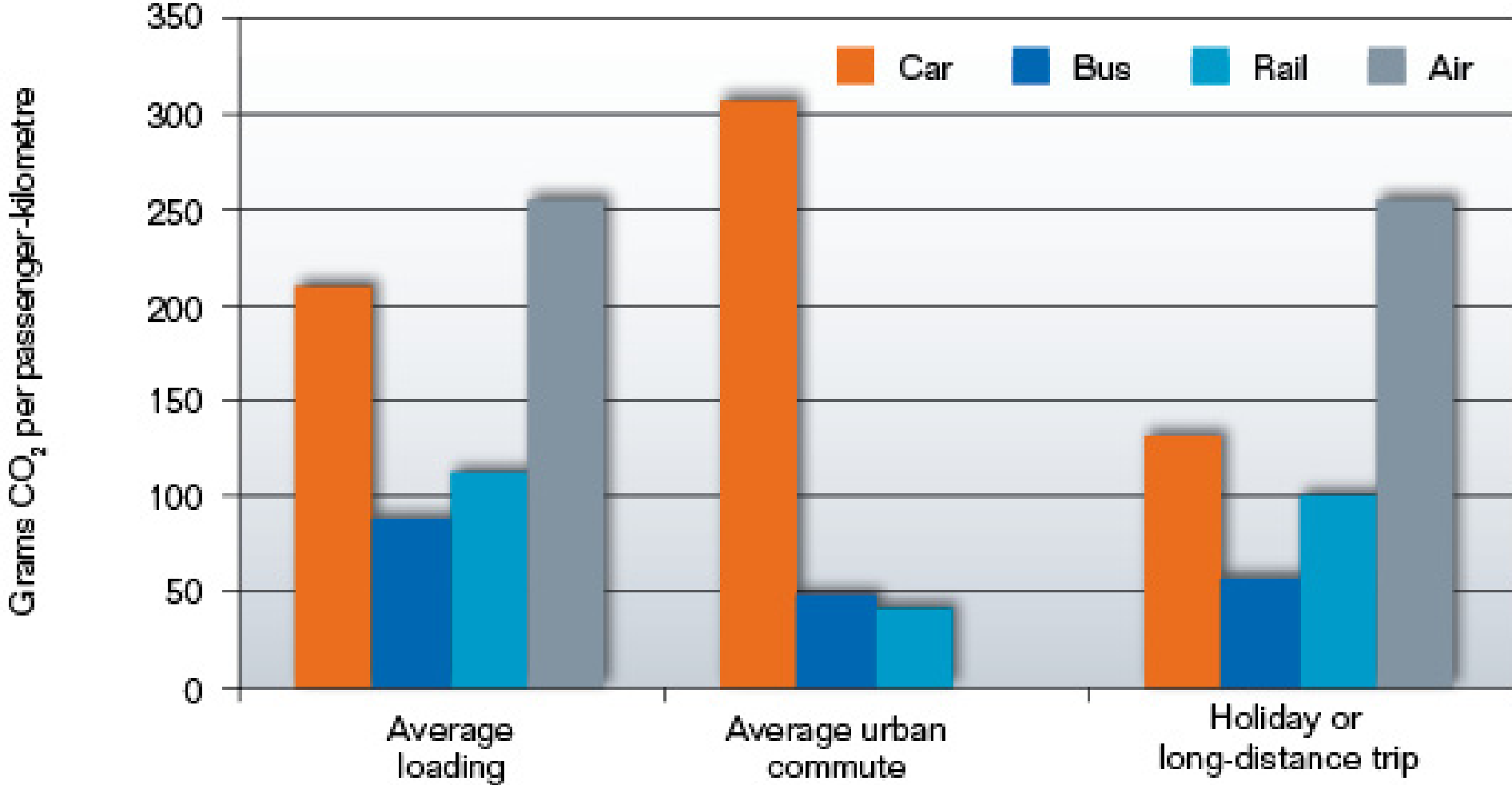
Note: Excludes electric rail and trams.

## GARNAUT Figure 21.1

### Australian domestic transport emissions, 2006

	1999	2006
Mode of travel	Total grams CO <sub>2</sub> e per urban passenger kilometre	Total grams CO <sub>2</sub> e per urban passenger kilometre
Private vehicle (car)	210.1	214
Bus	114.0	159
Light rail/tram	181.3	158
Heavy rail	163.0	145

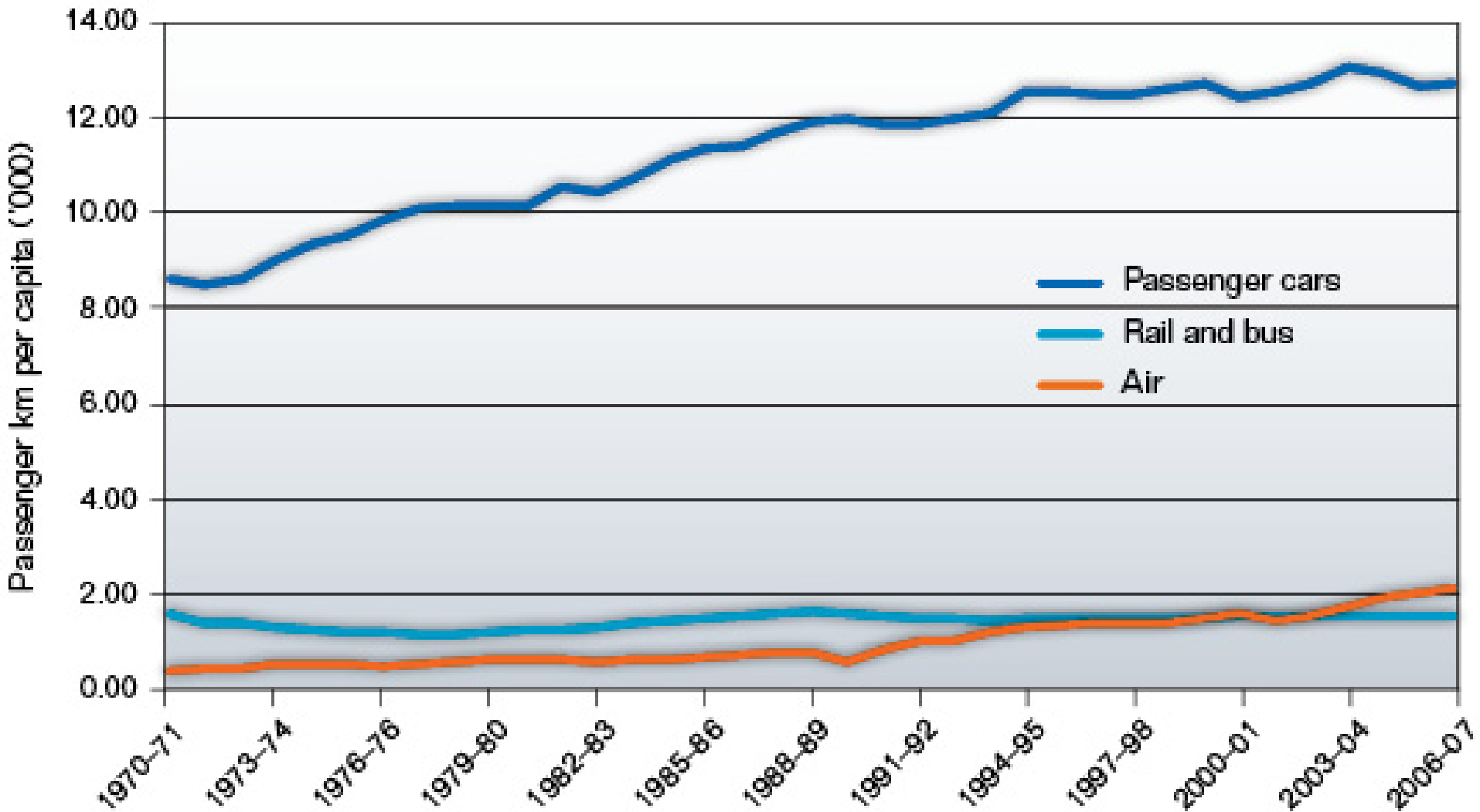
**Greenhouse gas intensities of different transport modes**  
(Australian Greenhouse Office)



## GARNAUT Figure 21.3

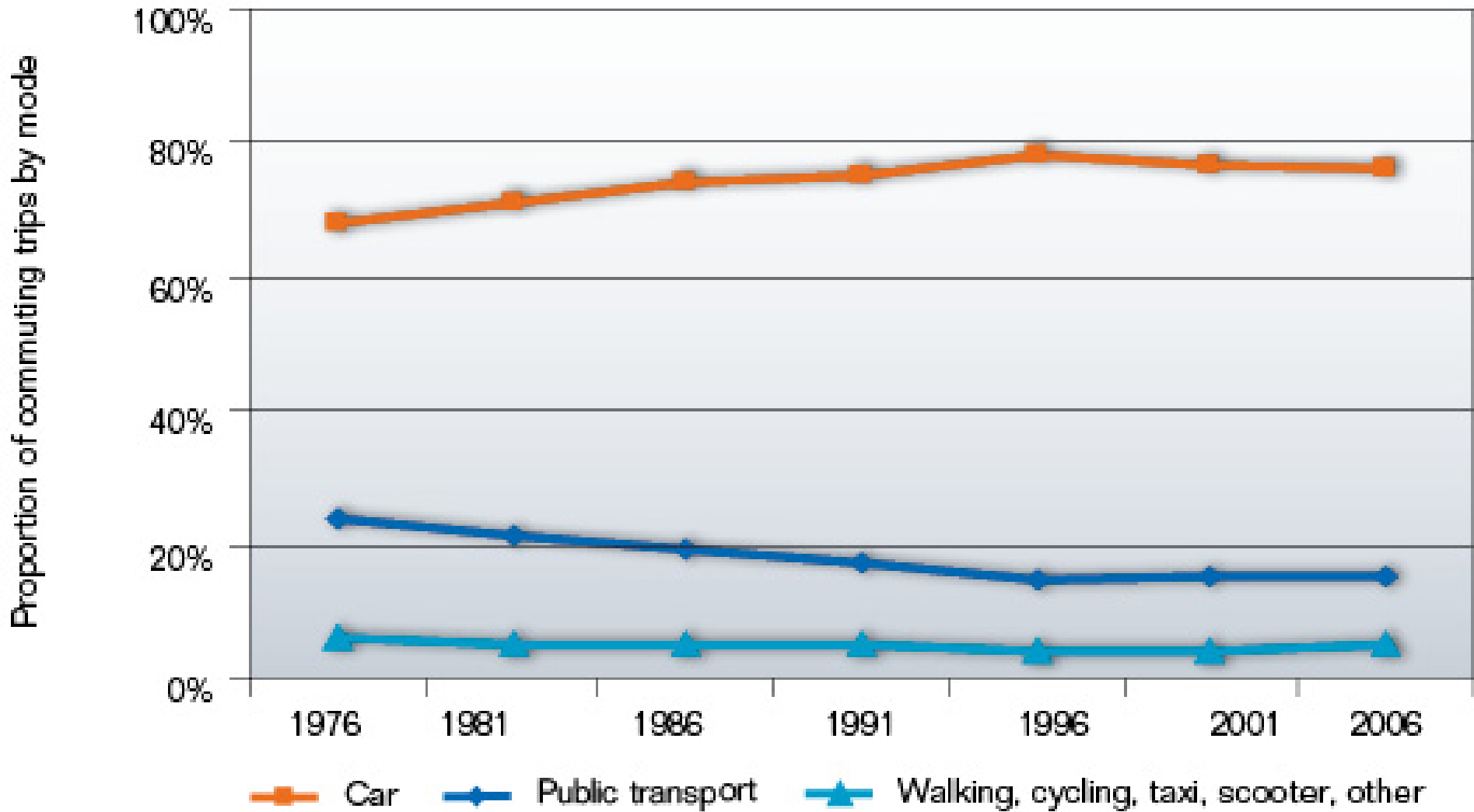
### Emissions intensity of passenger modes, 2007

(BITRE Unpublished data)

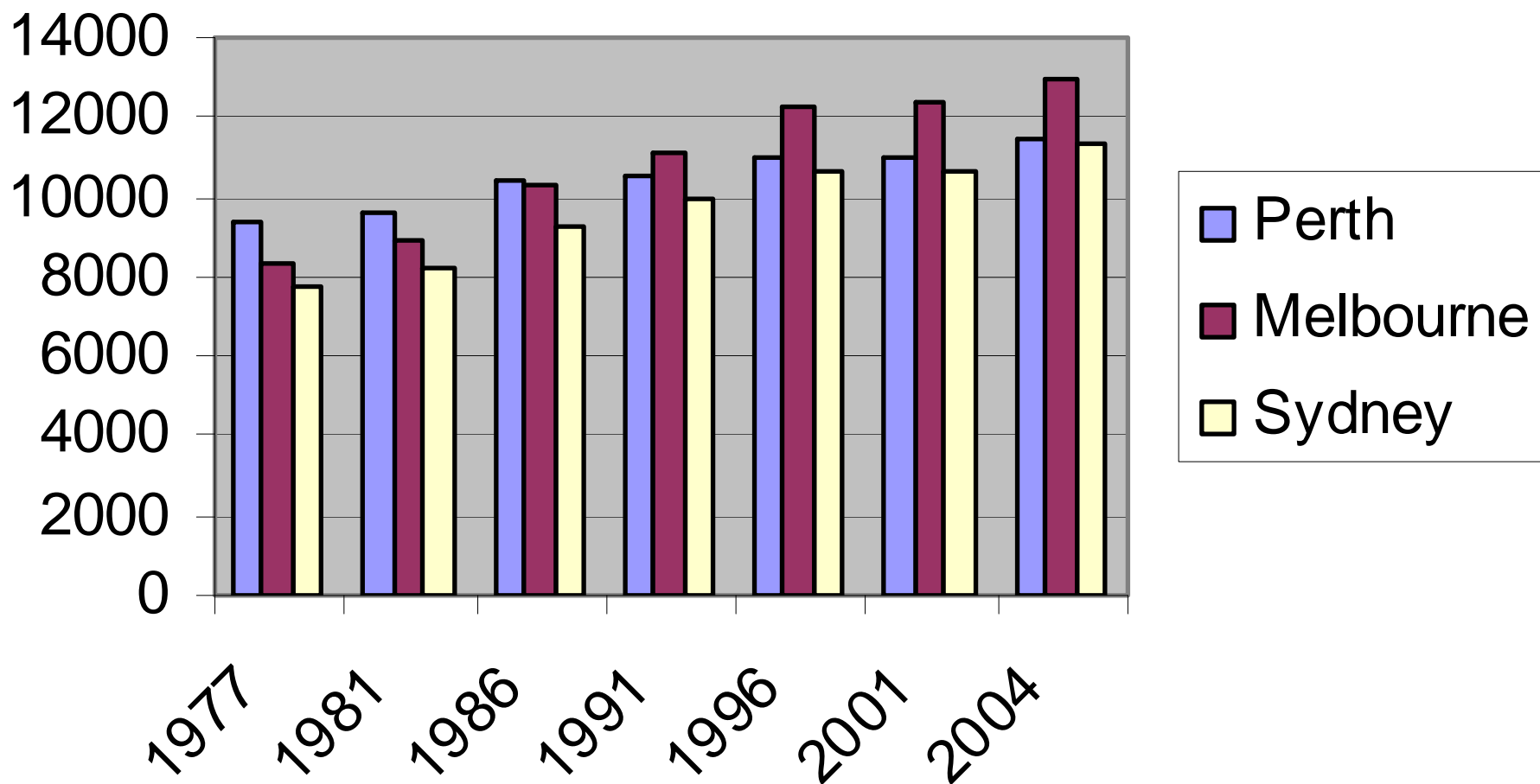


GARNAUT Figure 21.2

Passenger travel per capita by various modes,  
1970-71 to 2006-07



GARNAUT Figure 21.9 Mode share for journeys to work  
Australian capital cities 1976–2006

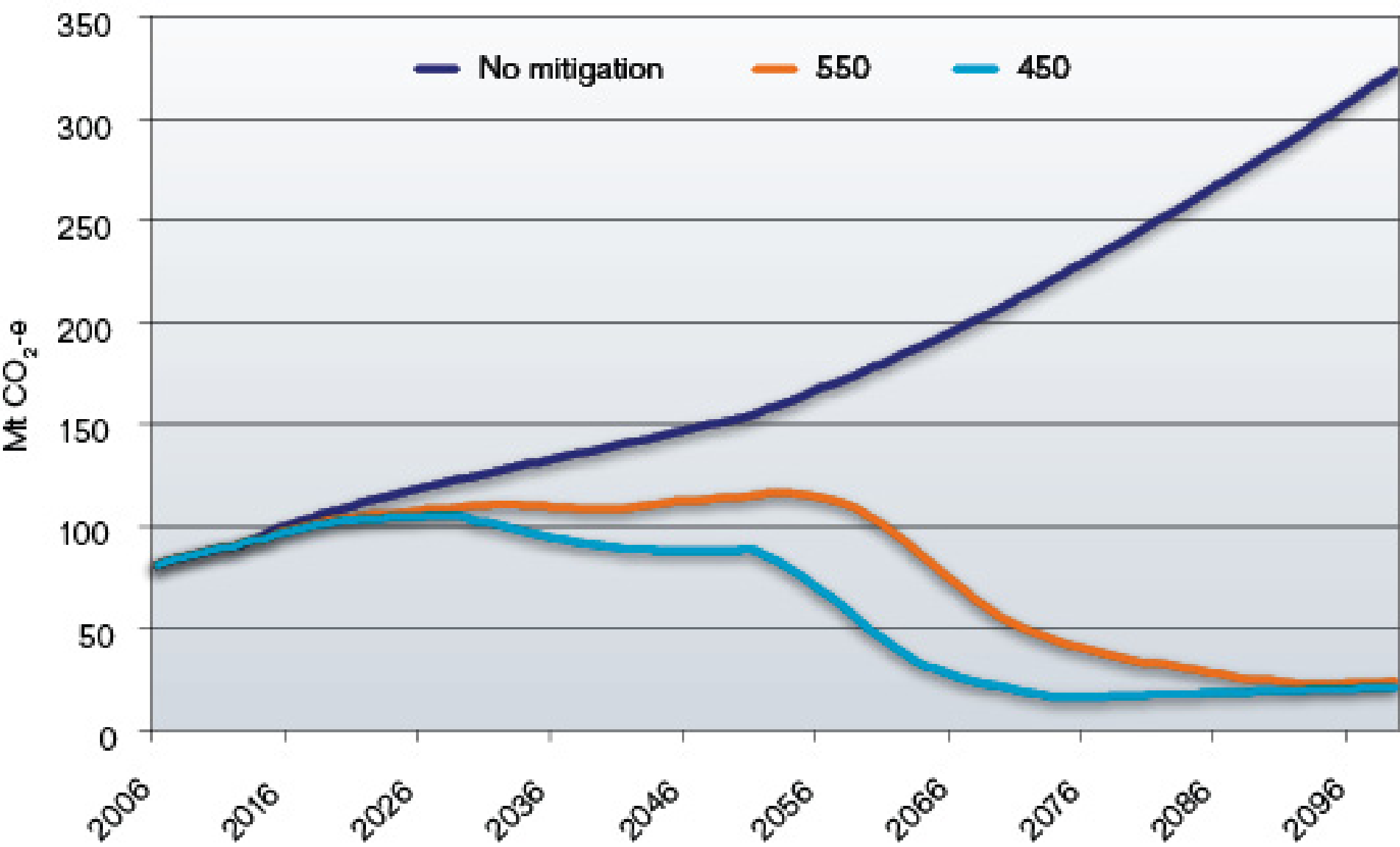


## Annual distance traveled by car, kilometres per person, 1977-2004

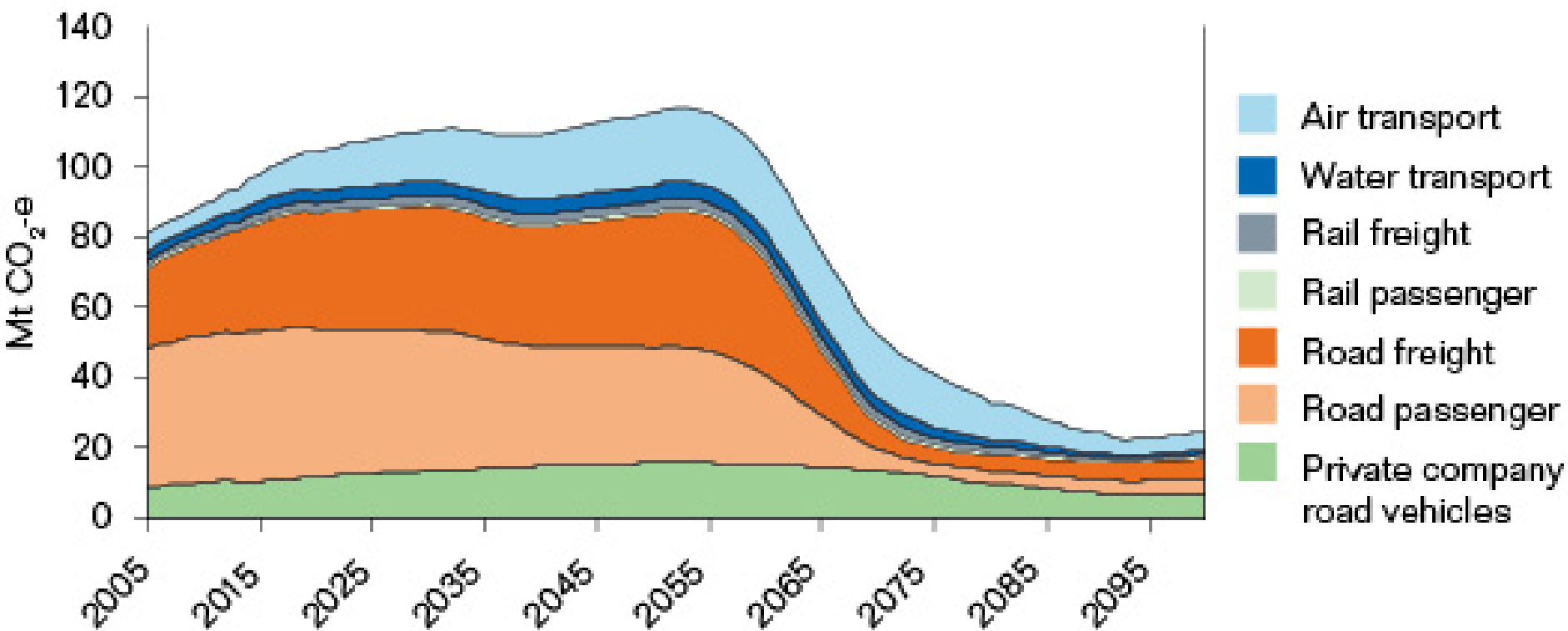
(BITRE: Australian Transport Statistics Yearbook,  
Table 4.3a, Population from ABS cat. no. 3106.0.66.001 Historical Trends).

	1977	1981	1986	1991	1996	2001	2004
Perth	9,424	9,631	10,400	10,480	11,004	10,948	11,506
Melb'ne	8,285	8,879	10,327	11,149	12,219	12,345	12,961
Sydney	7,804	8,173	9,314	9,956	10,614	10,662	11,307

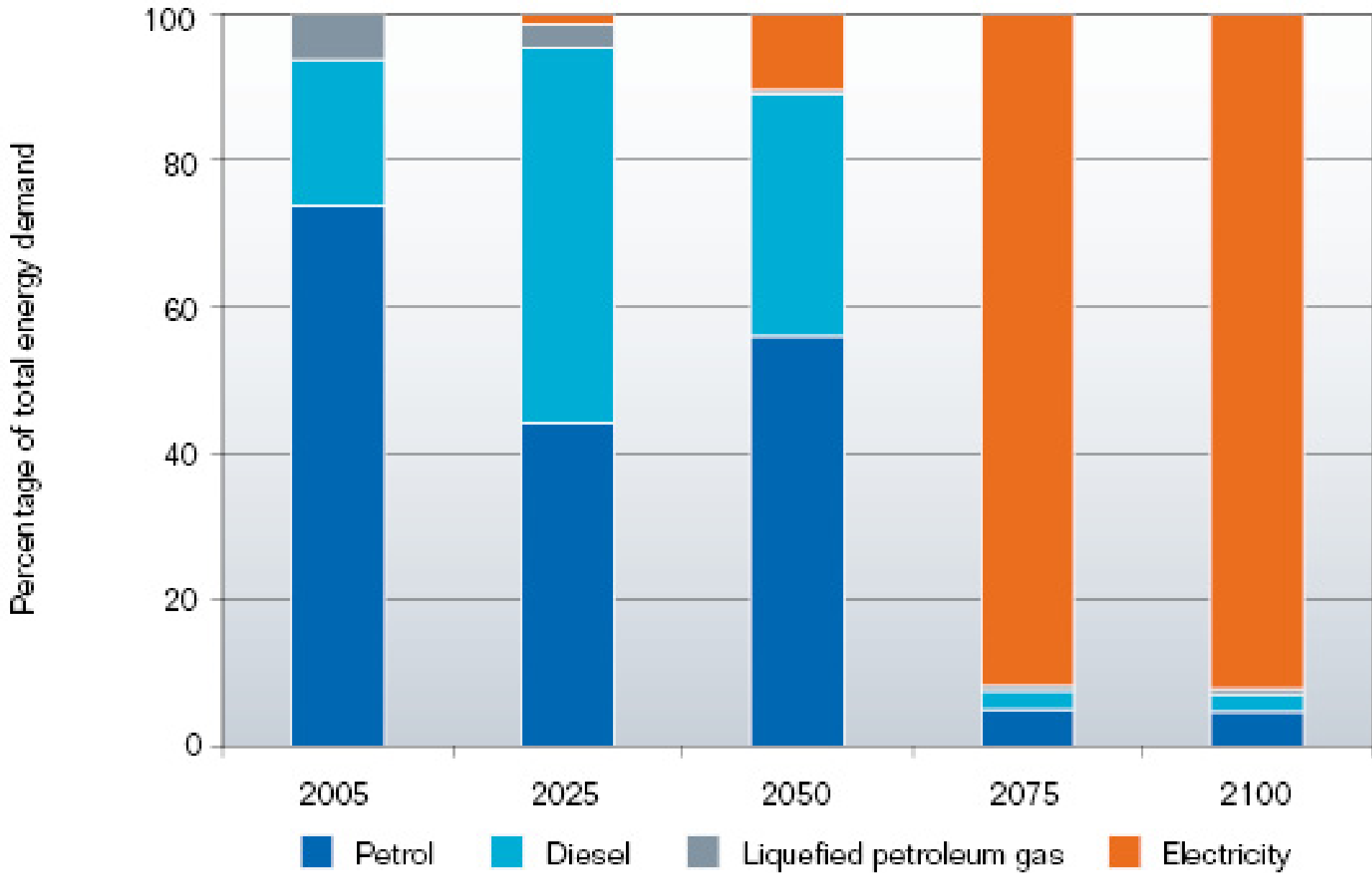
**Annual distance traveled by car:  
kilometres per person,  
Perth, Melbourne, Sydney  
1977-2004**



GARNAUT Figure 21.4 Projected emissions from the domestic transport sector 2006–2100 (Treasury modelling, standard technology assumptions)



GARNAUT Figure 21.5 Transport sector emissions in the 550 ppm standard technology scenario, 2006–2100



GARNAUT Figure 21.6 Modelling of road transport fuel use (550 ppm standard technology scenario)

# Consequence of reliance on carbon trading to reduce emissions in the transport sector

- Faith in vehicle technological change to produce global emission reductions. (Do hybrid cars merely make it easier to consume the remaining oil?).
- Tendency to avoid and stigmatise behaviour change strategies ('social engineering').
- Carbon price only a small incentive to change transport system.
- Unspecified complementary policies on land use, population and transport planning required by government (recognised by Garnaut).
- Atmospheric carbon targets are much too high (should be 350 not 450 or 550).