

***A STRATEGIC POLICY TOOL FOR
ASIAN TRANSPORT – THE WAY
AHEAD***

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Australia

OUTLINE

Why transport should be taken seriously.

Requirements for a Multi-Regional Transport Policy Tool.

Developing best practice Transport Tools For Institutional Reform – The Australian Experience.

CURRENT CAPABILITIES In Examining Institutional Reforms.

CONTRIBUTION TO ENERGY DEMAND

	Sector	Direct Energy (PJ)	Per Cent
	Total Energy Consumed, 2005/06	4,478.8	
1.	Road Transport	1,058.9	(27.2%)
2.	Non-Ferrous Metals	438.9	(9.8%)
3.	Residential	423.6	(9.5%)
4.	International Sea	417.6	(9.3%)
5.	Mining	390.8	(8.7%)
6.	International Air	372.4	(8.3%)
7.	Domestic Air	101.5	(2.3%)
8.	Rail	38.1	(0.9%)
9.	Domestic Sea	21.04	(0.5%)

Australia's reliance on petroleum products grew to 98.3 per cent of national transport (direct) energy consumption.

Sources:

ABARE (2008), "Energy In Australia 2008".

Apelbaum Consulting Group (2008), "Australian Transport Facts 2008".

IMPACT ON GHG EMISSIONS

Sector	CO ₂ -e ¹ (MT)	Per Cent ²
Stationary energy	279.4	48.2%
Agriculture	87.9	15.2%
Road transport	72.4	12.5%
Fugitive fuel emissions	31.2	5.4%
International sea	30.3	5.2%
Industrial processes	29.5	5.1%
International air	24.7	4.3%
Waste	17.0	2.9%
Domestic air	6.1	1.1%
Rail	2.2	0.4%
Domestic sea	1.7	0.3%

Notes:

1.AGO convention.

2.Domestic and international.

Sources:

AGO (2007), "National Inventory Report 2005 – Volume 1".

Apelbaum Consulting Group (2008), "Australian Transport Facts 2008".

REQUIREMENTS FOR A STRATEGIC TRANSPORT PLANNING FRAMEWORK

Rigorous, comparable and cost effective State/Territory analysis that:

Quantifies the transport task, energy consumed and emissions.

Consistency in data, analysis and forecasting across all regions/territories.

Provides 10 year projections and 20 year backcasting.

Can be replicated annually.

Reflects the specific attributes of the regions/countries examined.

Models relationships based upon empirical data rather than unsupported complex relationships.

Provides an audit mechanism.

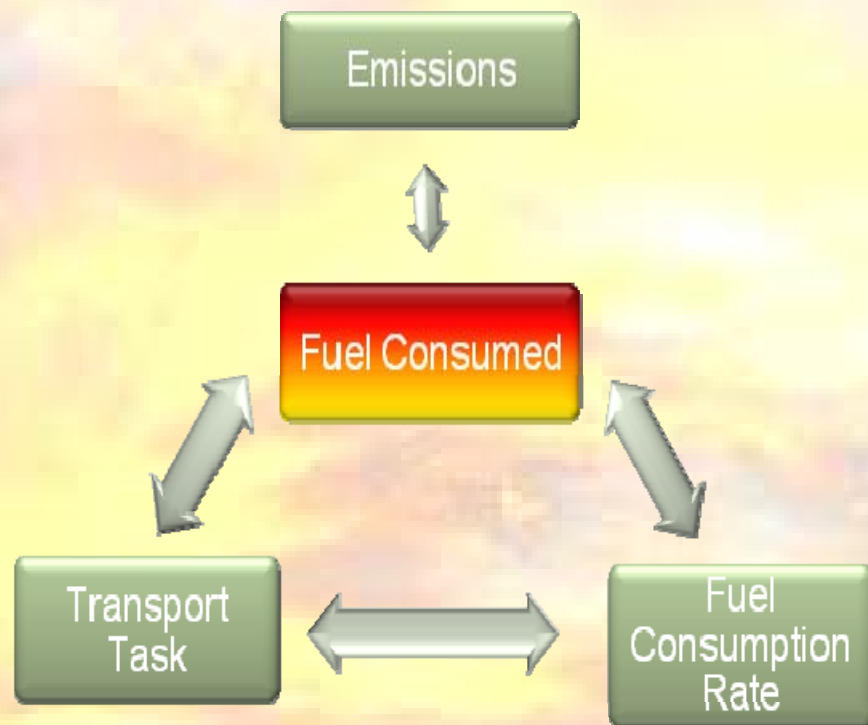
Endogenously integrates the economy, transport demand, energy and emissions.

Examines FFC and direct outcomes.

Allows for the impact of non-registered vehicles.

Delineates outcomes by vehicle, fuel and emission type.

IDENTIFY KEY ANALYTICAL COMPONENTS – THE TRANSPORT TASK, ENERGY AND EMISSIONS PARADIGM



SCOPE

Transport Task

- All passenger and freight
- Hire and reward and ancillary

Coverage

- All 8 States and Territories individually
- **National assessment**

Regions

- Urban, provincial urban and non-urban
- State of registration Vs jurisdictional

SCOPE cont...

Modes

- All 5 transport modes

Vehicle Types

- 11 vehicle types

Service Types

- Hire and reward Vs ancillary
- For air, scheduled Vs non-scheduled Vs general aviation

Vintage

- 1996 to 2007

SCOPE cont...

Fuels

- **19 fuels**

Energy

- **Direct and indirect (FFC)**

Emissions

- **7 GHG including CO₂-e**
- **PM₁₀ and SO₂**
- **110 road toxics**
- **Direct and indirect (FFC)**

FORECASTS

Aus_eTran

Multimodal, multi-fuel, multi-regional, macro-economic and demographic based computational model of Australian transport, energy and emissions:

Road (Aus_eRT)

Rail (Aus_eRail)

Domestic Air
(Aus_eDair)

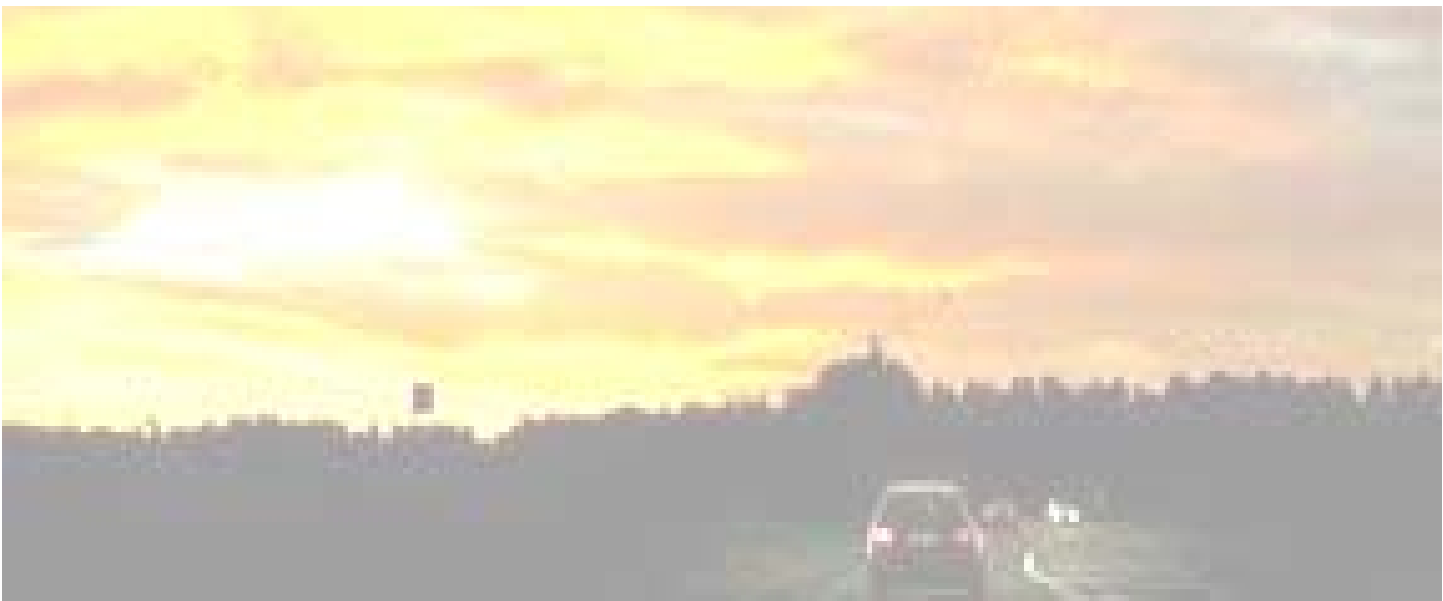
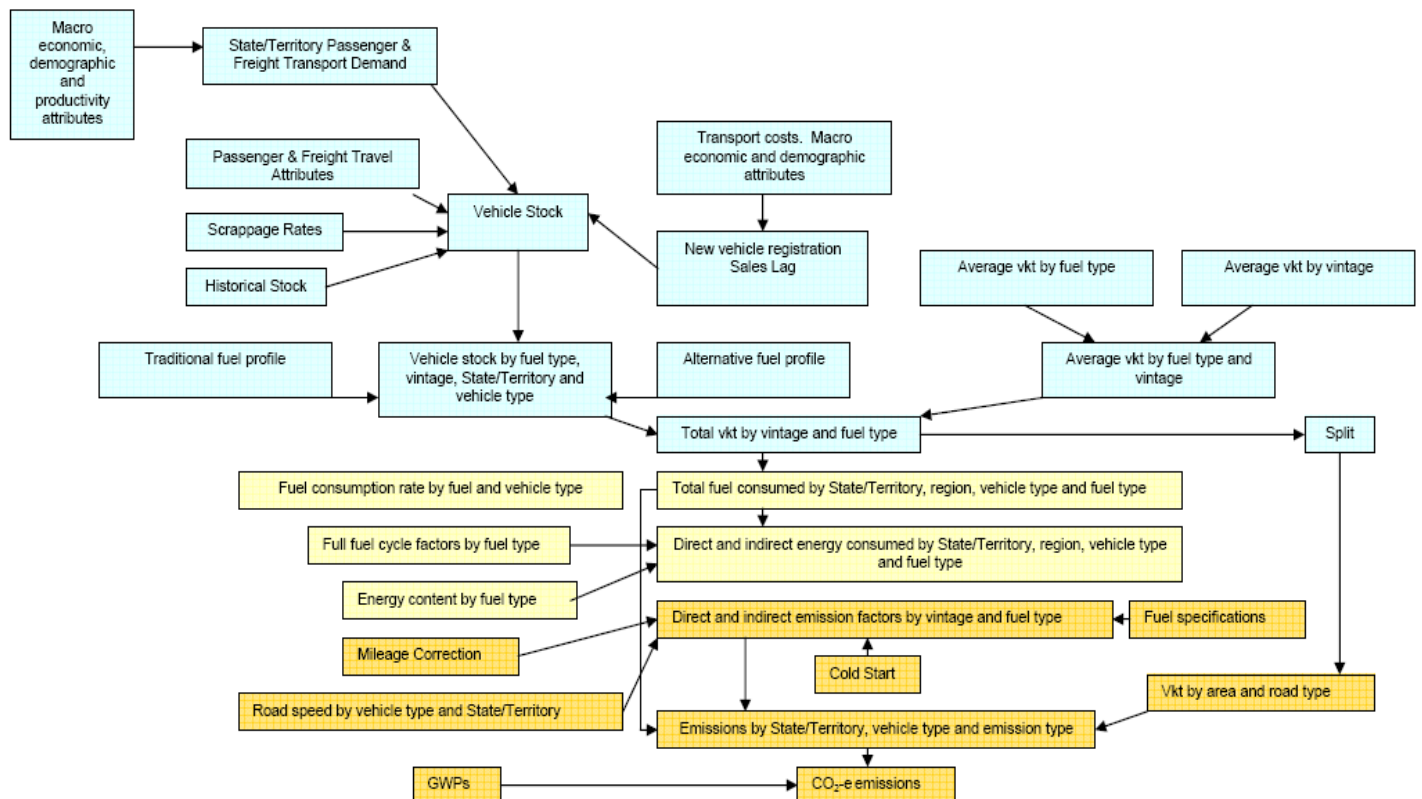
International Air
(Aus_eair)

Domestic Shipping
(Aus_eCoast)

International Shipping
(Aus_eshlp)

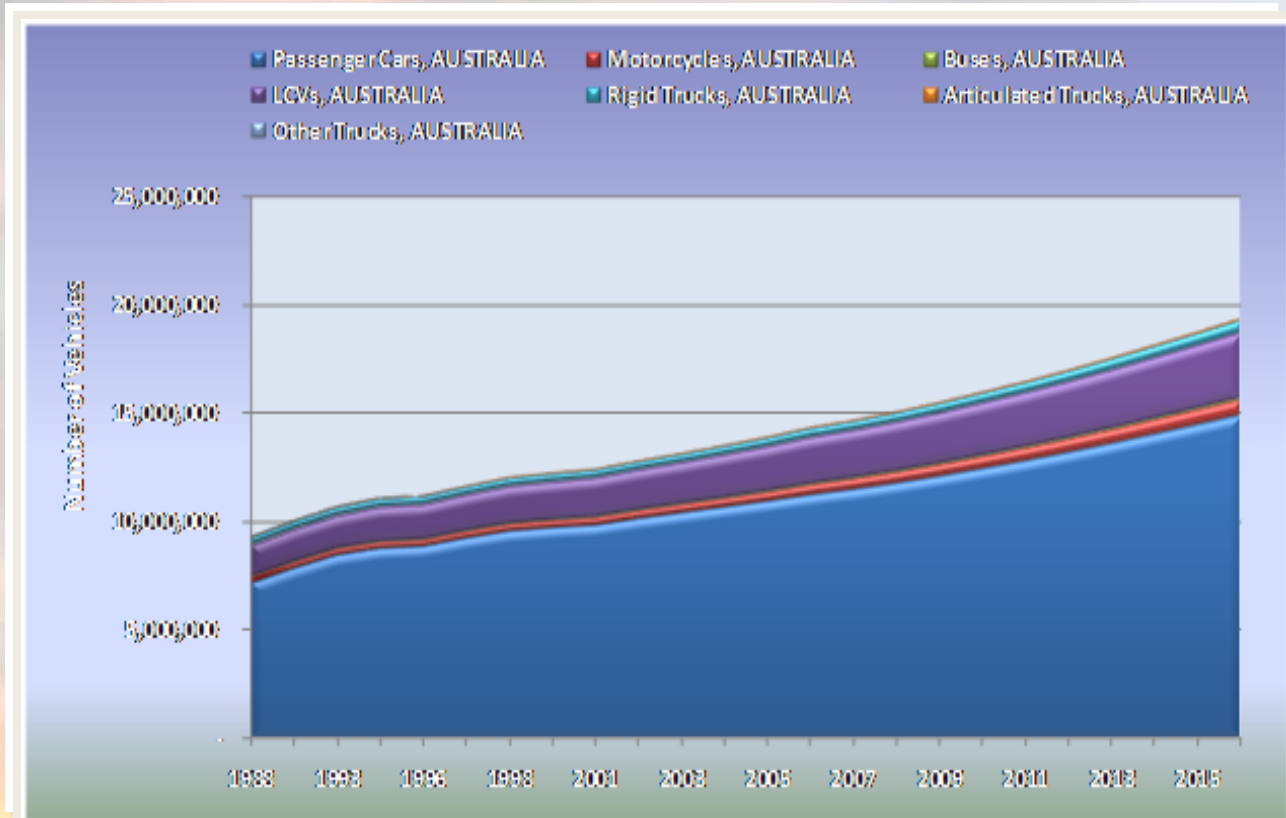
Non-urban pipelines
(Aus_ePipe)

DETAILED STRUCTURE OF THE ROAD TRANSPORT MODEL (*Aus_eRT*)



ANALYTICAL OUTPUT

Australian Road Fleet



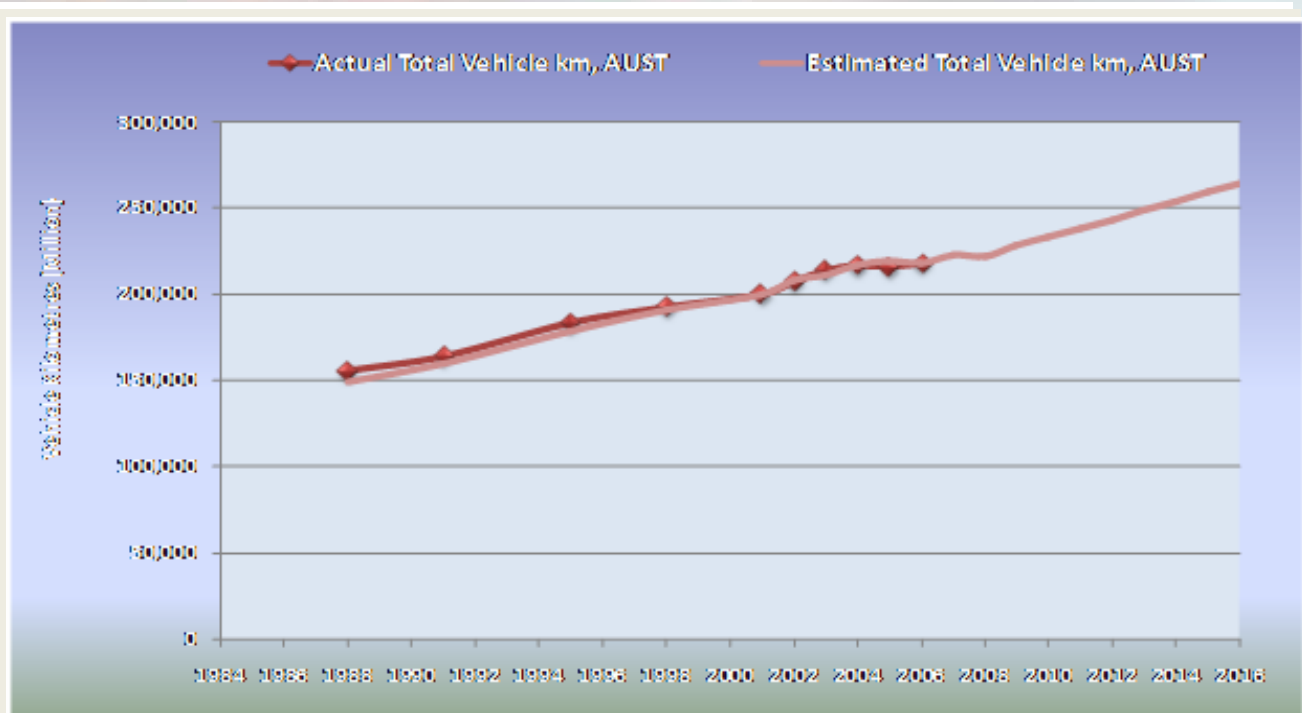
Road fleet grew by 3.2% (compared with 2.9% in previous year), largely due to 2.7% growth in the passenger vehicle fleet.

Growth rate of motorcycles, LCVs, trucks and buses exceeded that of passenger vehicles.

Road fleet projected to grow by 34.9% (or ≈ 5 million vehicles) by 2015/16.

The proportion of the national fleet of vintage three (3) years or less was 14.8 % in 2005/06. May be 15.0 % in 2015/16.

Distance Travelled



Growth rate in vkt for passenger vehicles grew by 0.8% compared with a 0.4% decline in 2004/05.

Growth rate varied by State – declined in NSW, Qld and WA (0.1% to 0.8%), increased in SA, VIC, ACT, TAS, NT (0.2% to 3.3%).

Motorcycles, LCVs and trucks increased share at expense of passenger vehicles.

BAU projections suggest:

Real increase in vkt in 2006/07.

0.4% decline by 2007/08.

Overall 10 year growth 21.5%.

Heavy Rail



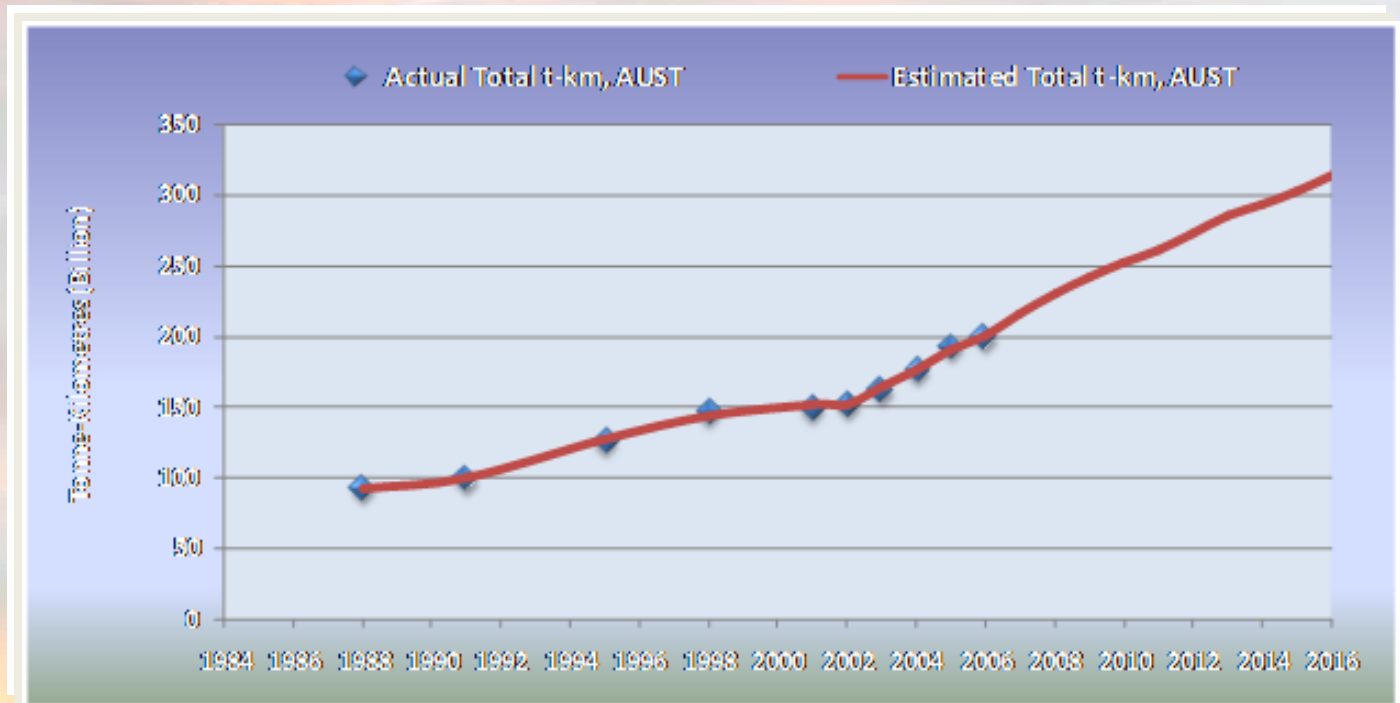
Journeys grew by 5.0% in 2005/06, and by 19.3% during past decade.

Projected trends in population, fuel prices, demographics, investment and consumption suggest a 12.2% growth in journeys.



Road

Tkm



Growth in tonnes and average vkt increased the tkm task by 3.8% to 200.3 billion tkm in 2005/06.

Forecast economic performance suggests growth in tkm of 56.7% by 2015/16.

Non-Urban Pipelines

Tonnes carried by pipelines declined by 2.1% in 2005/06, due to reduction in Bass Strait oil output.



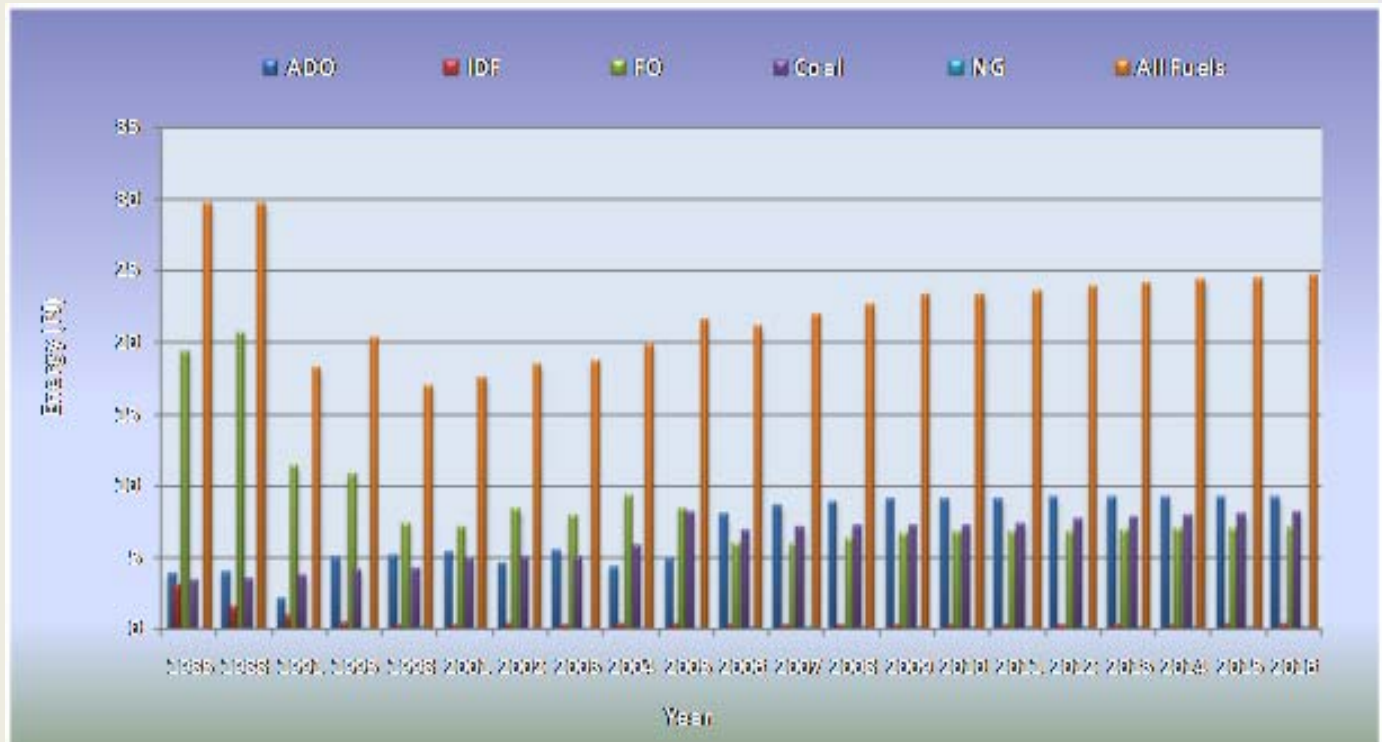
The task grew by 0.1% to 22.3 billion tkm in 2005/06 due to increasing role of gas pipelines (84.7% of national non-urban pipeline task compared with 67.1% a decade ago).



Since 1994/95, annual oil pipeline task has declined by 36.1%; gas increased by 74.1%.

Domestic Transport Energy

Sea



1.4% reduction in FFC energy during 2005/06.

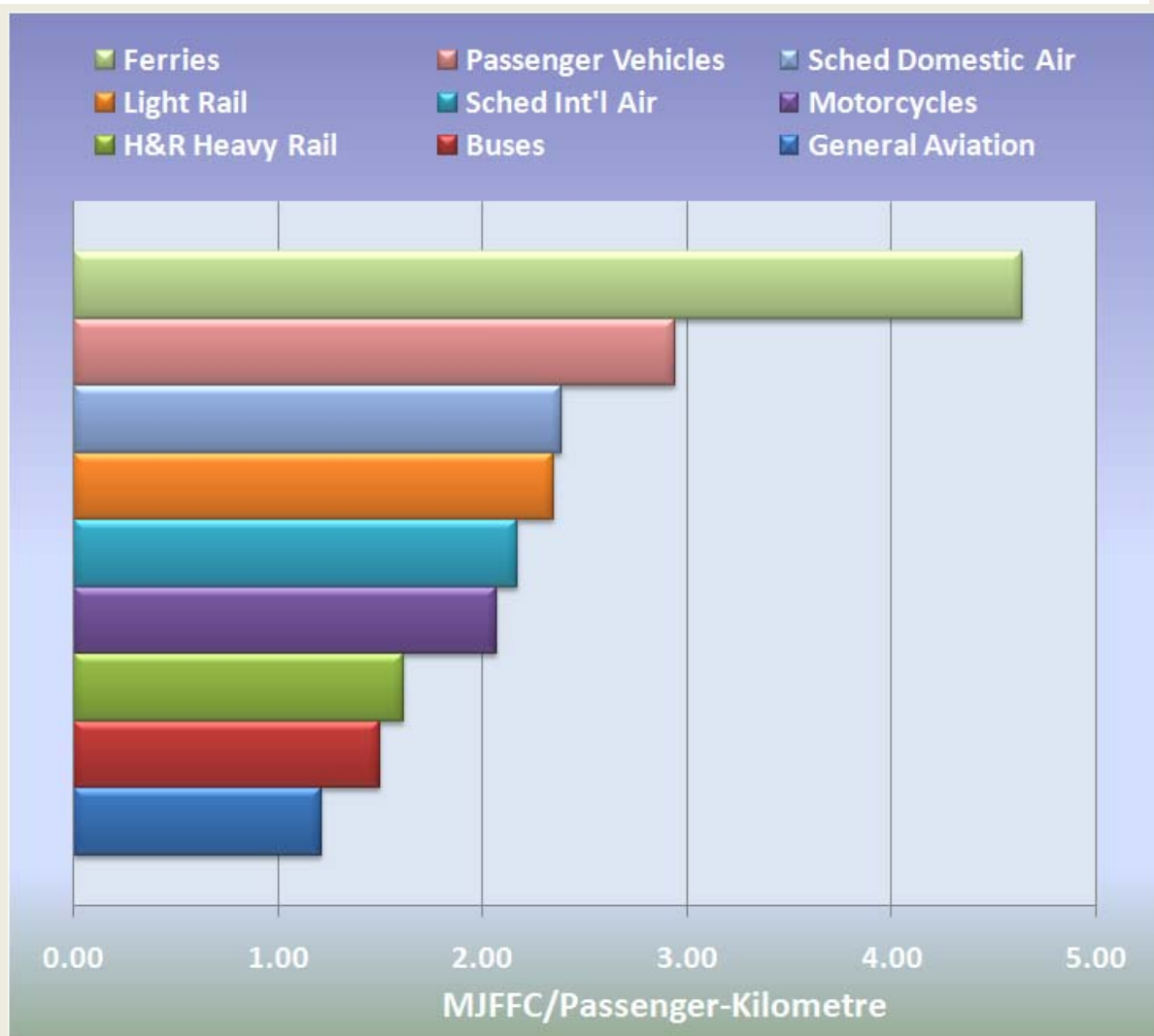
Reliance on coal and fuel oil declined to 29.9% and 29.2%, respectively.

Project growth (17.5%) in total fuel (direct) uplifted in next 10 years.

Energy Efficiency

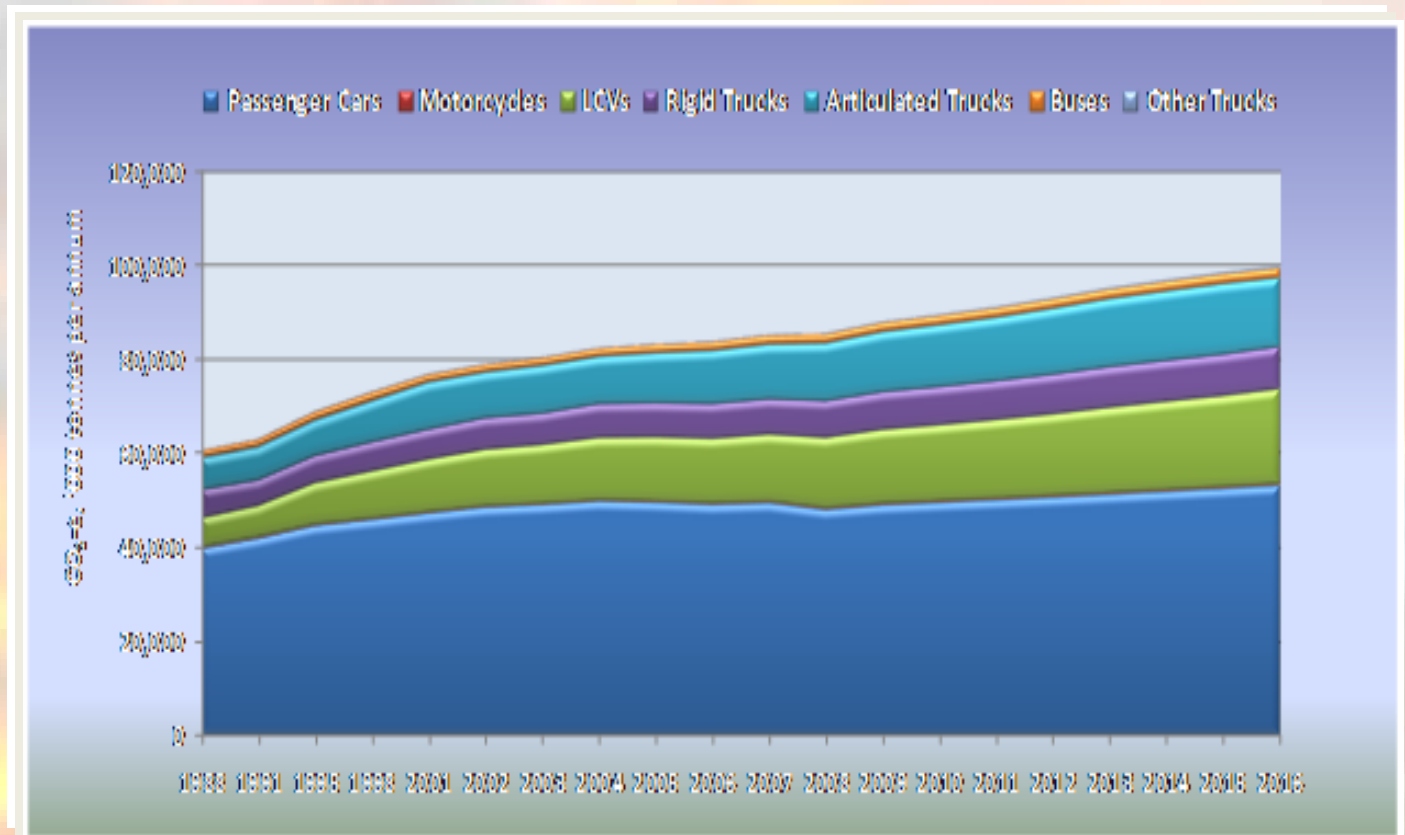
Is available by broad region and mode.

- **Passenger**



Emissions

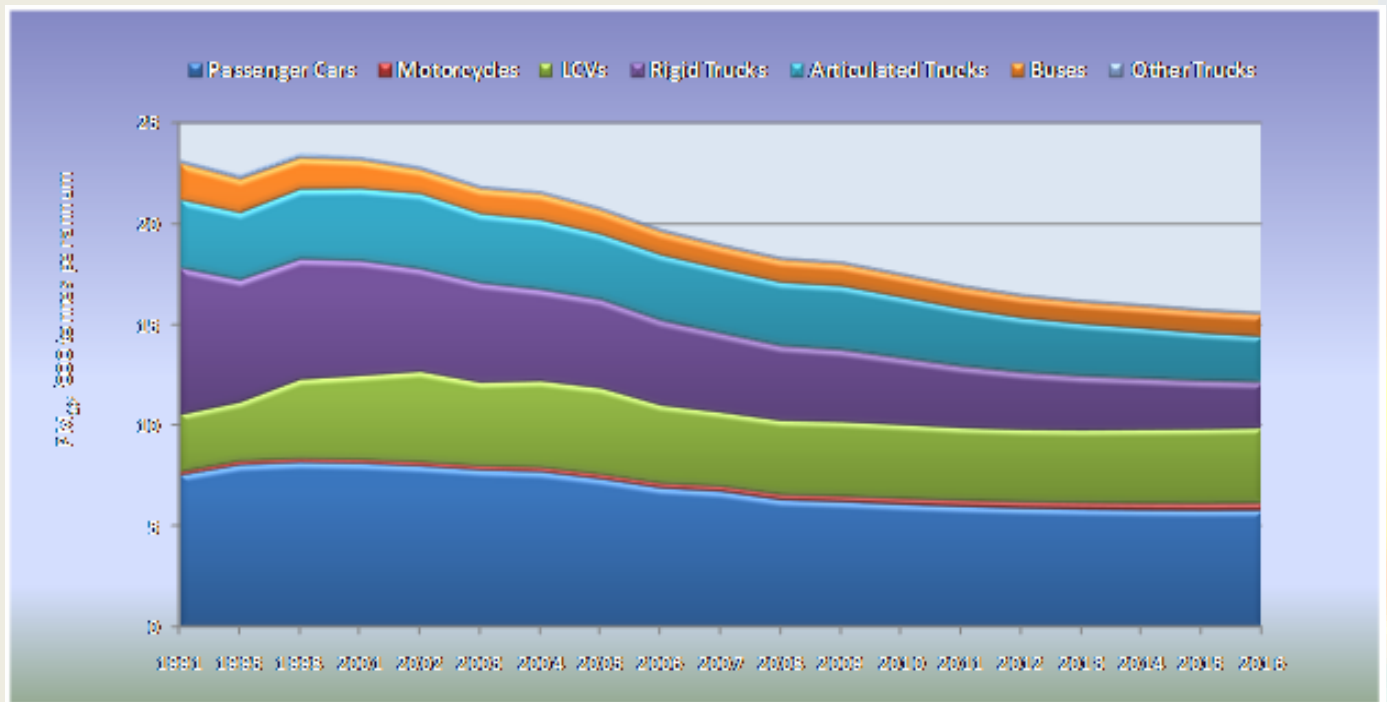
- Road
 - CO₂-e



Emissions

- Road cont...

- PM_{10}

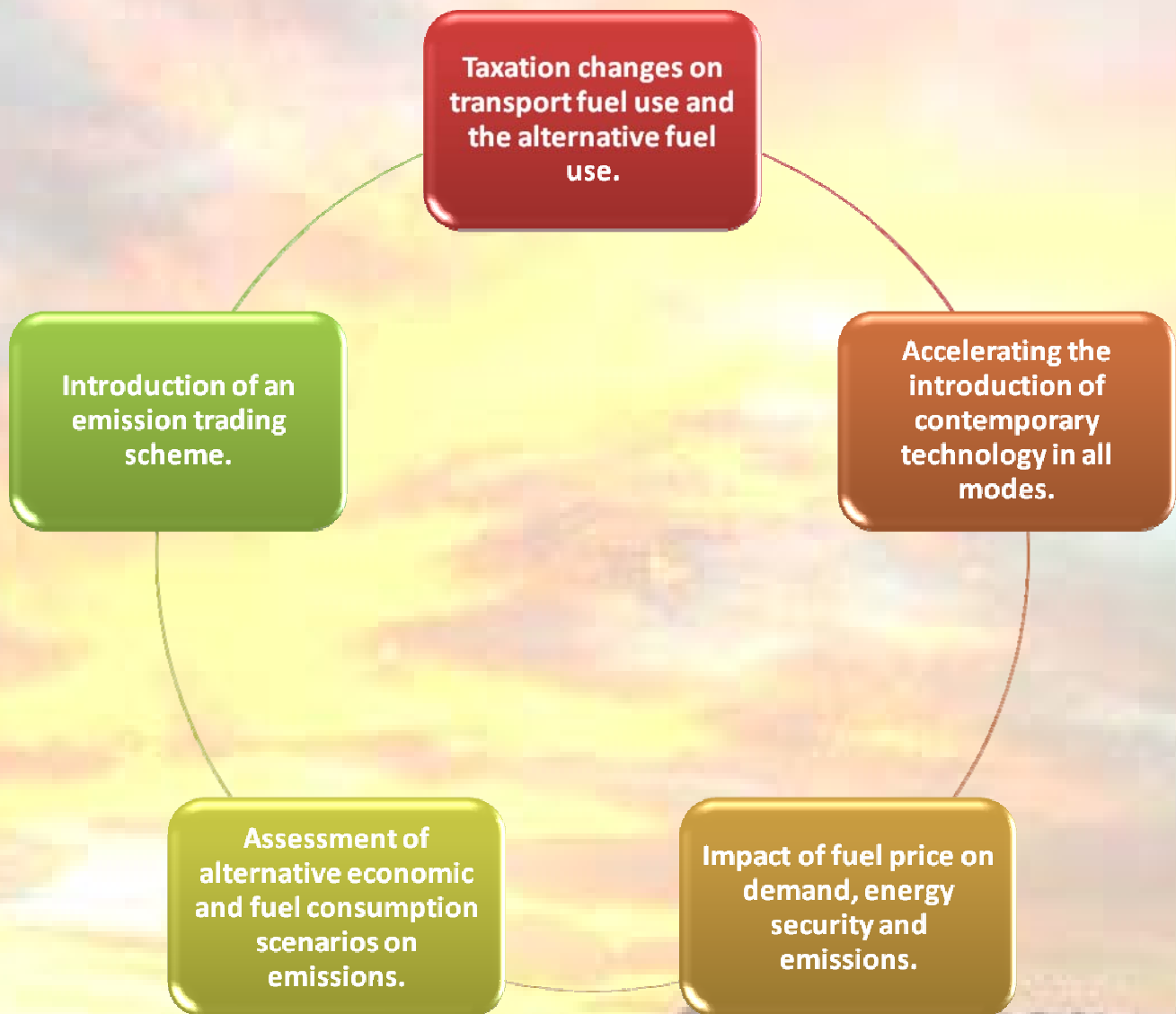


Impact of
contemporary
emission
standards.

18.3%
reduction by
2015/16.



ASSESSING THE IMPACT OF INSTITUTIONAL REFORMS ON THE TRANSPORT TASK, ENERGY AND EMISSIONS



ASSESSING THE IMPACT OF INSTITUTIONAL REFORMS ON THE TRANSPORT TASK, ENERGY AND EMISSIONS cont...

**Accelerated
uptake of
vehicle
technology
in new
vehicles via
Australian
Design rules.**

**Compulsory
maintenance
of vehicles.**

**Urban
commuter
parking
costs.**

Modal shifts.

**Revising
public
transport
fares.**

***ASSESSING THE IMPACT OF INSTITUTIONAL
REFORMS ON THE TRANSPORT TASK, ENERGY
AND EMISSIONS cont...***

Road use changes.

**Impact of below wheel
infrastructure investment.**

**Policies for the accelerated
introduction of alternative fuels.**

Congestion tax.

**Establishing targets for HH
vehicle emissions.**

SUMMARY

