

Department of Energy

**Energy Efficiency Indicators and Target
Setting in South Africa
Workshop 2
January 2015**



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Introduction to Sectoral Working Groups

TRANSPORT OVERVIEW



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Transport Sector

Overview

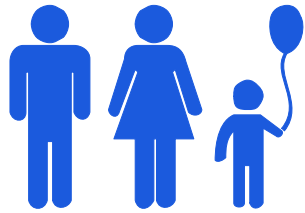
- Census 2011 – General Population Statistics(urban/rural, education level)
- Overview of transport sector structure
- NHTS 2013 Strategic Overview



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Transport Structure



Passenger Transport



Freight Transport

Private Transit



Private Car



Motor cycle

Mass Transit



Rail



Bus



Mini-Bus Taxi



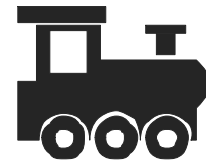
Air



Shipping
(Maritime)



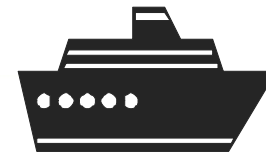
Road



Rail



Air



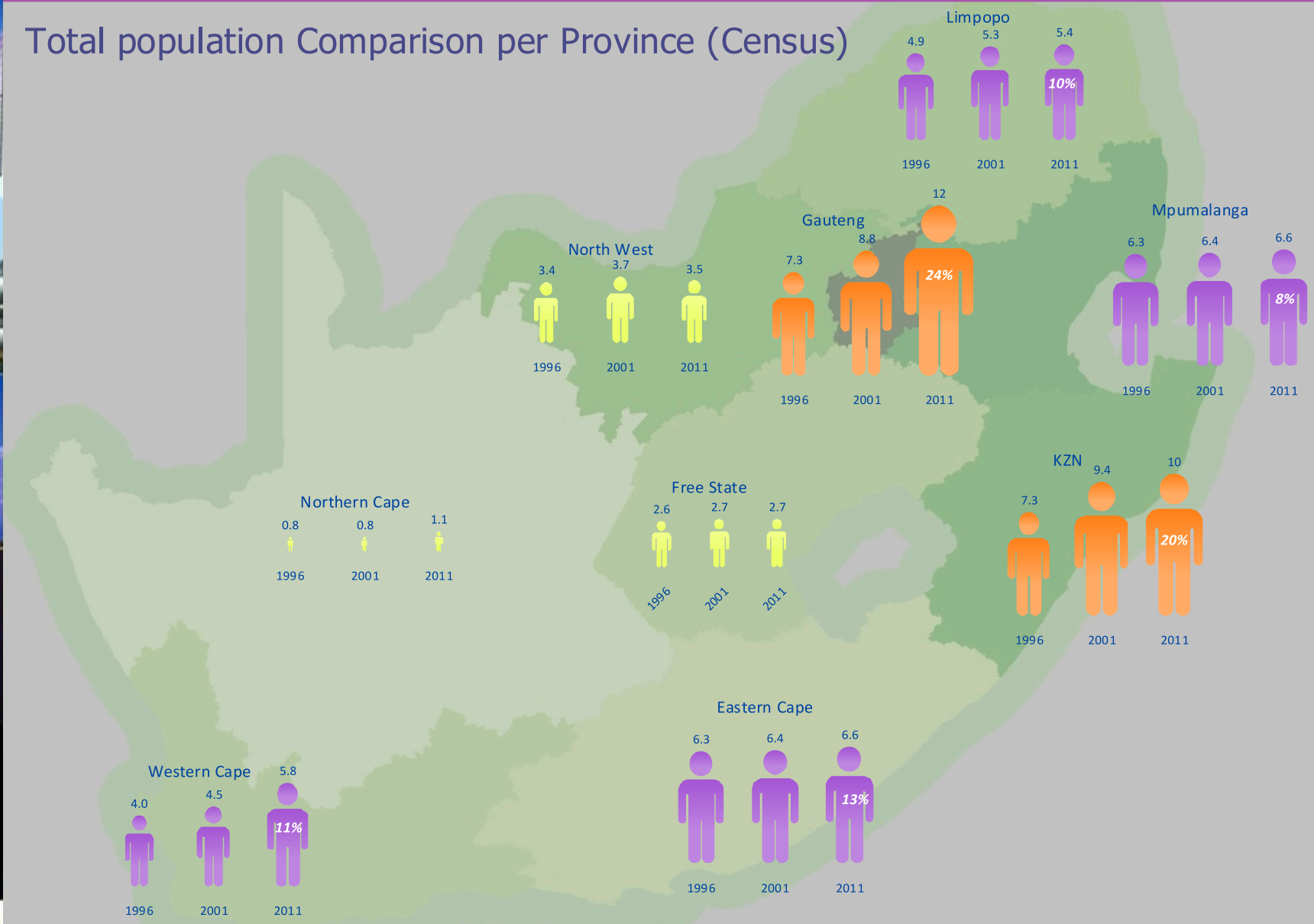
Shipping
(Maritime)

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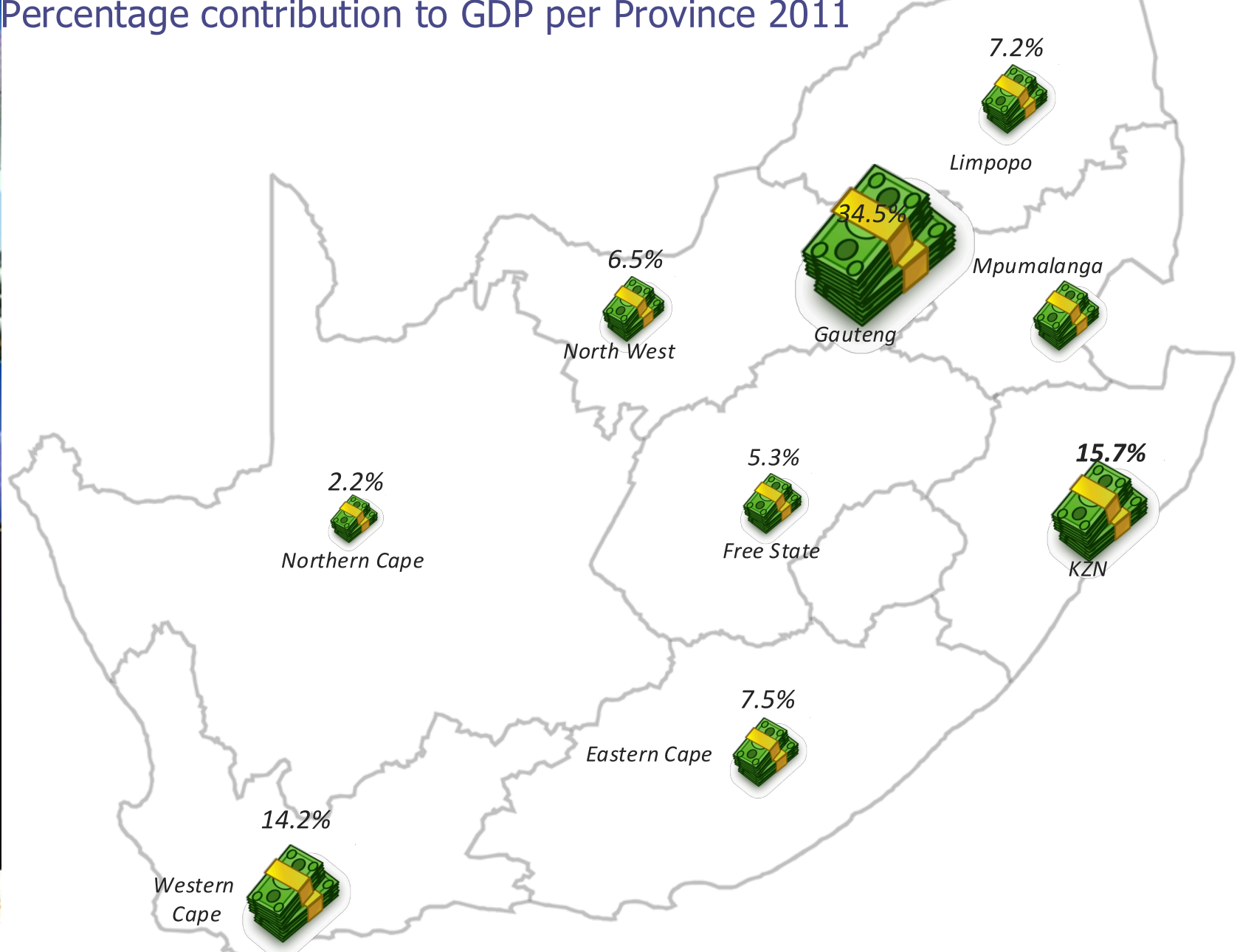
Total population Comparison per Province (Census)



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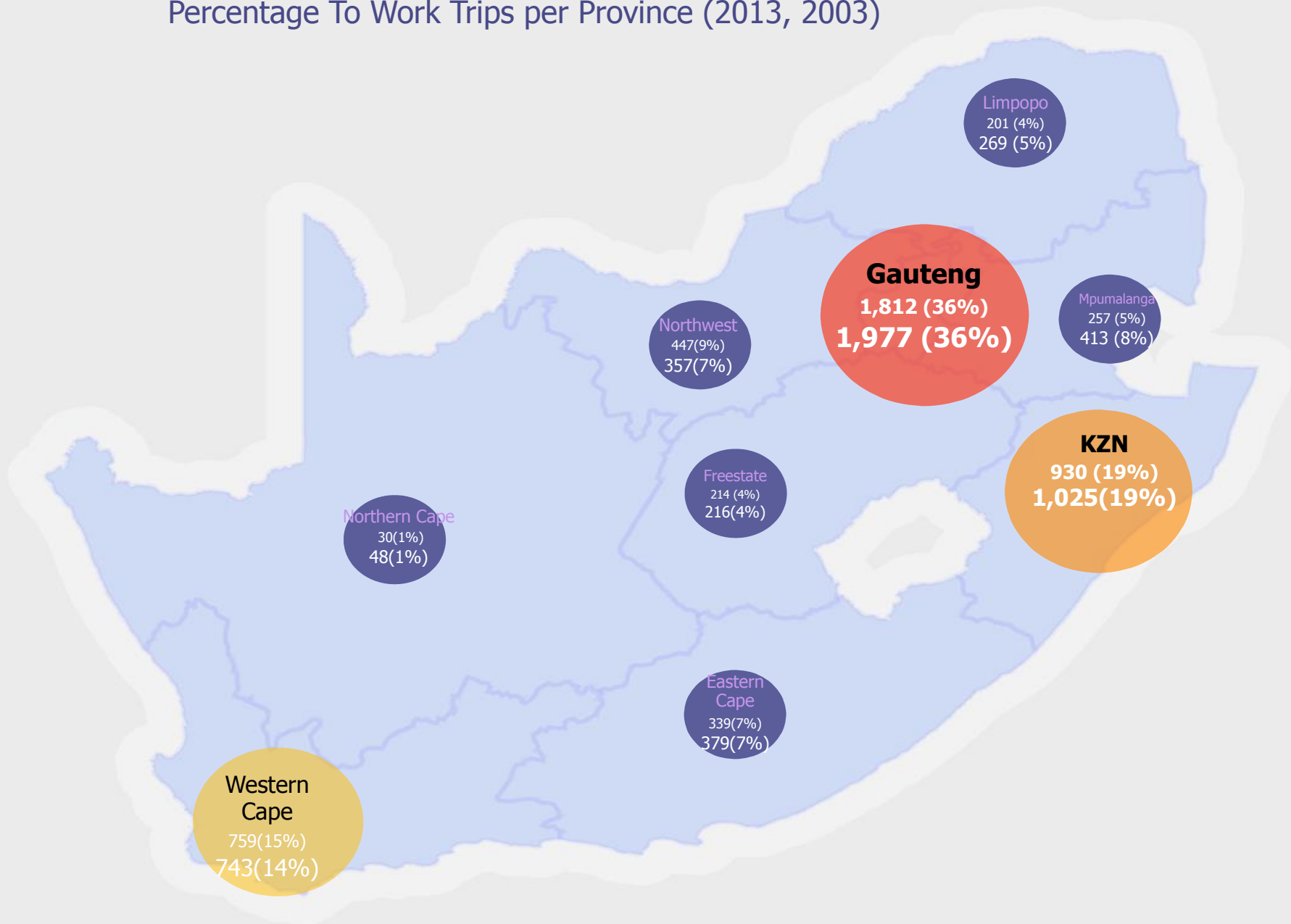
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Percentage contribution to GDP per Province 2011



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Percentage To Work Trips per Province (2013, 2003)



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Passenger Transportation in South Africa - NHTS 2013

Percentage split in Trip Purpose



To go to work

45 %



For business

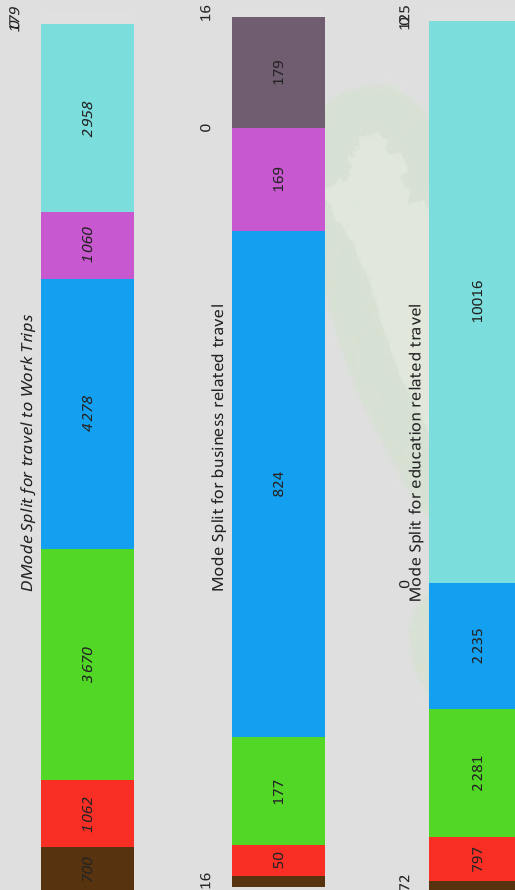
5%



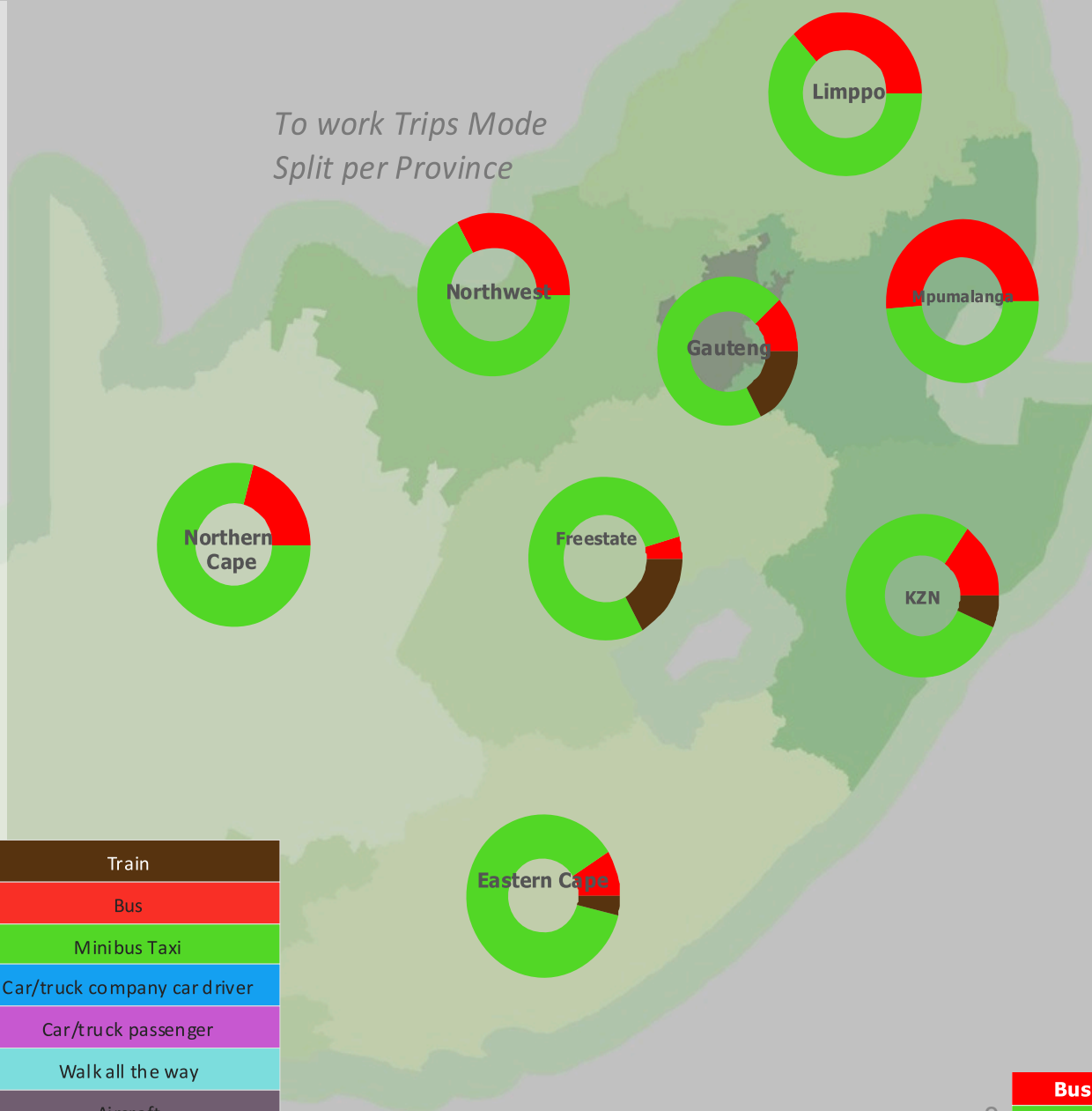
To go to education

50%

Mode split per Trip Purpose



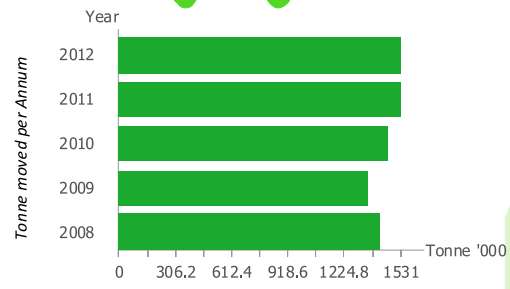
To work Trips Mode Split per Province



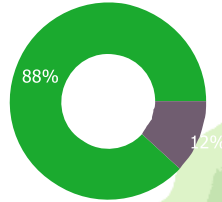
Freight Transport in South Africa - State of Logistics Report



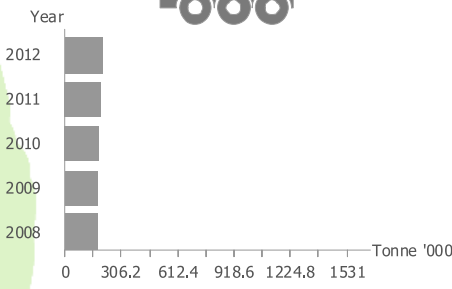
88%



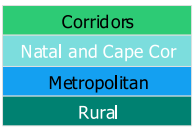
Mode Split 2012



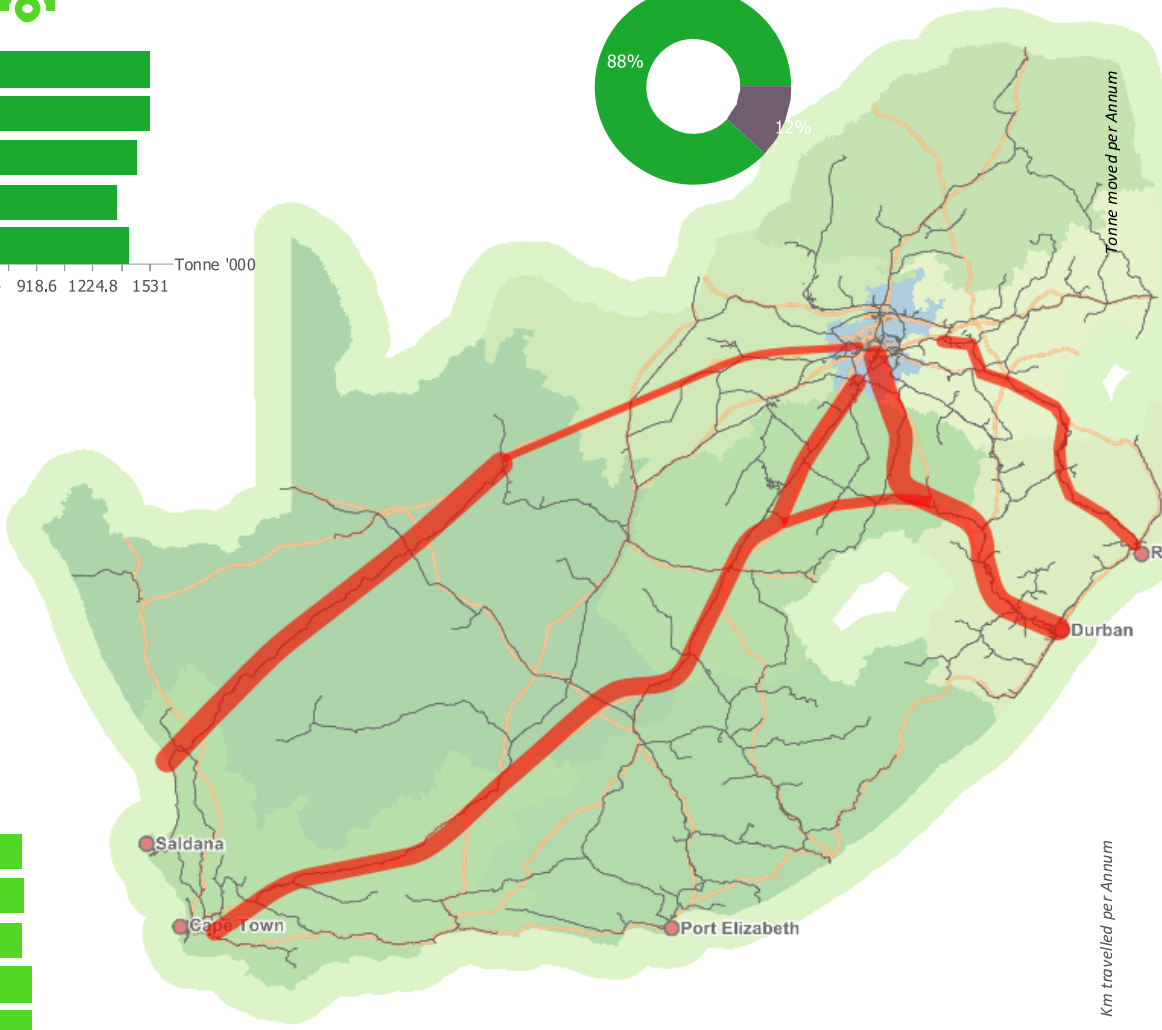
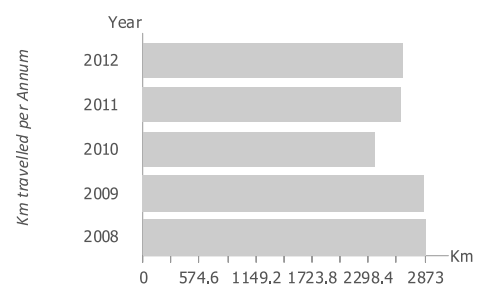
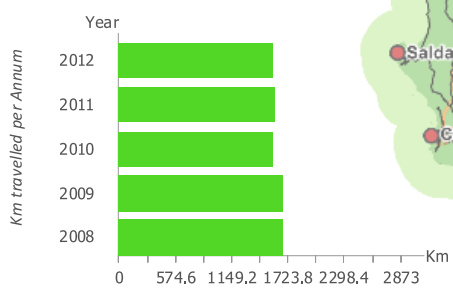
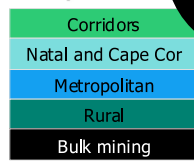
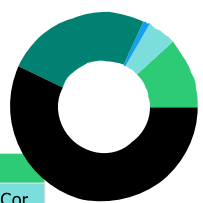
12%



2012 Road Freight % Split by Area



2012 Rail Freight % Split by Area



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Energy Consumption

- Sub-sector
- Mode



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Session 1:

Review of indicators, data gaps and data collection (DEM)

TRANSPORT SECTOR



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Overview

- What is an Indicator
- Recap Transport Sector and Subsectors
- Overview of indicators defined in 2005
- Data mapping process 2014/14
- Data Gaps Identified



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What is an indicator?

- Thing that indicates the state or level of something.
 - "car ownership is frequently used as an indicator of affluence"
- Transport Sector:
 - total passenger-km covered
 - total energy consumption in passenger transportation



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2005 Indicators Defined

- Number of passenger transported,
- Kilometer travelled by passengers,
- Fuel consumed to transport passengers.

Activity

- Activity is influenced:
 - Petrol price – less travel
 - New vehicle/engine technology – lead to more fuel efficiency per kilometer.

Driving Force



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2005 Indicators Defined

Sector and Sub-Sectors

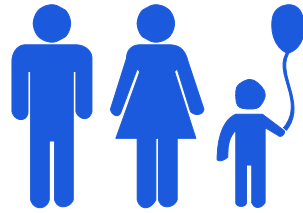
- Freight and Passenger
- Infrastructure:
 - Rail,
 - Road,
 - Air,
 - Maritime/shipping.
- Vehicles(modes):
 - Roads – Private Car, Public Transport (Bus, Taxi).



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Sector and Sub sectors



Passenger Transport



Freight Transport

Private Transit



Private Car



Motor cycle

Mass Transit



Rail



Bus



Mini-Bus Taxi



Metered Taxi



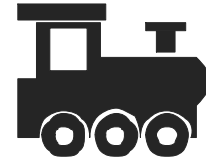
Air



Water (Inland, sea, coastal)



Road



Rail



Air



Water(Inland, sea, coastal)

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*Note – Inland water transport is mainly recreational and not include in reporting on transport statistics

2005 Indicators Defined

Passenger Transport

Passenger-km covered by

- private cars
- bus / minibus
- urban rail
- inter-city rail
- Domestic flights

Energy consumption by

- private cars
- bus / minibus
- urban rail
- inter-city rail
- Domestic flights



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2005 Indicators Defined

Freight Transport

Tonne-km covered by

- Road
- Rail
- Domestic flights

Energy consumption by

- Road
- Rail
- Domestic freight flights

*Note no shipping due to low volumes



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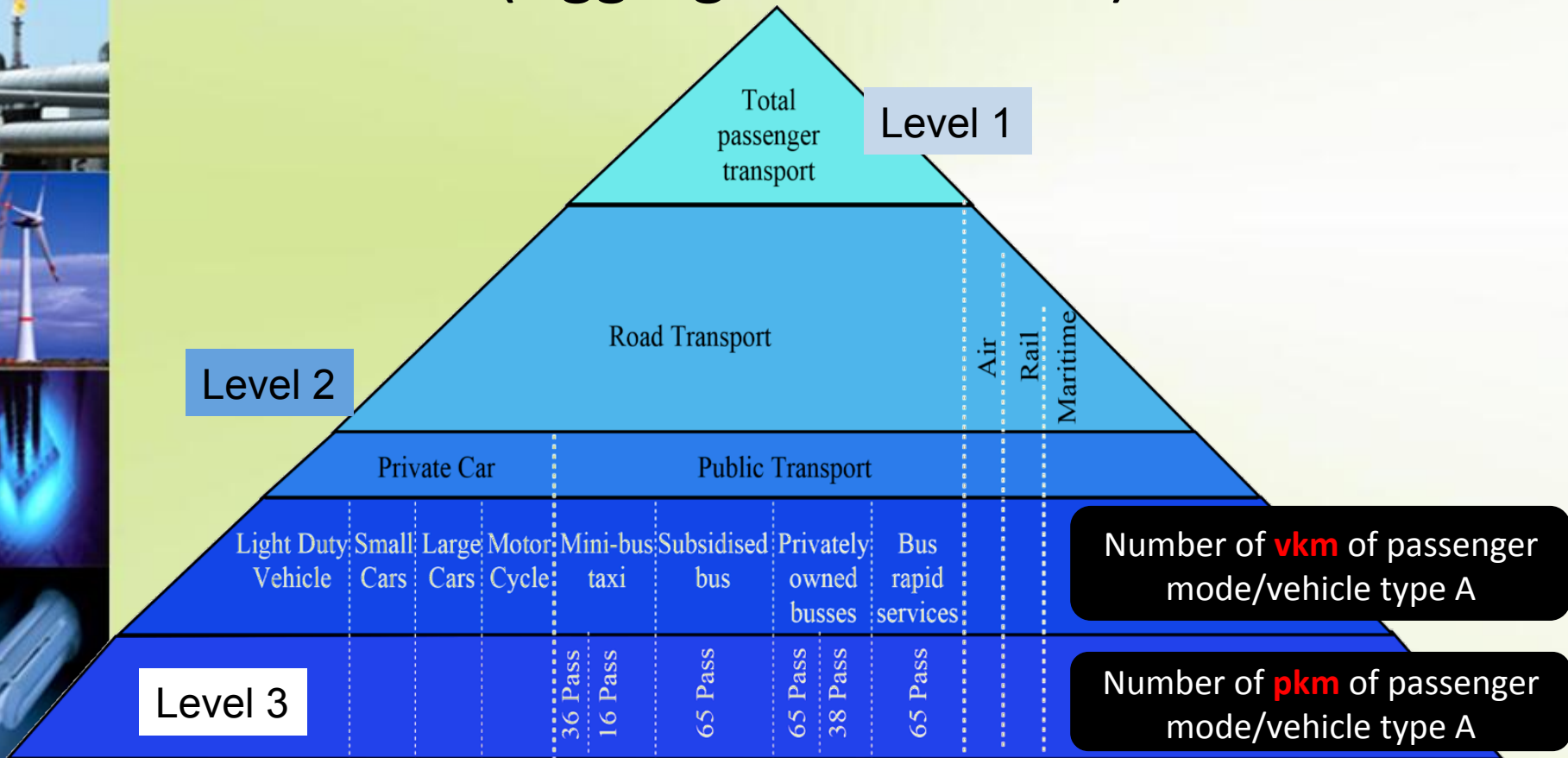
INTERNATIONAL PRACTICE



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Indicator Level of Detail (Aggregation of data)



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DATA MAPPING PROCESS



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Overview

- Stakeholder consultation process
- Data sources identified per department
- Data gaps identified



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STAKEHOLDER PROCESS



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Stakeholder Consultation Process

- NDoT Directorates:
 - List of contact names per department provided (2013)
 - Several contacts not valid for 2013
 - Identify new contacts and data gate keepers



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Stakeholder Consultation Process

- New contacts and data sources identified:
 - Passenger:
 - IATA
 - ACSA
 - SAA
 - PRASA
 - Stats SA
 - Freight:
 - IATA
 - AASA
 - BARSA
 - Department of Environmental Affairs
 - Transnet
 - SAMSA
 - SARS – Import and Exports
 - SANRAL



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Stakeholder Consultation Process

- DoT Directorates:
 - Freight Data Bank
 - RTMS
 - e-Natis
 - RTMC
 - Integrated Transport Planning
 - Subsidised bus
 - Taxi Registrar – NLTIS
- Aviation
- Maritime
- Road Infrastructure



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Stakeholder Consultation Process

- Challenges:
 - Relative importance of energy efficiency data between directorates
 - Lack of clarity of ownership of data and data collection mandate
 - Regulation of sub sectors determine the detail of data capturing, analysis and database development



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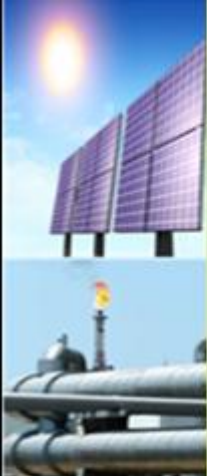


DATA SOURCES IDENTIFIED



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Data Sources

- Summary of data sources per transport sub-sectors:

Freight/ Passenger	Sub Sector	Mode	Activity	Consumption	Structure	Level 1	Level 2	Level 3
Freight	Rail							
	Road							
	Air							
	Water(Ocean and Coastal)							
Passenger	Rail							
	Road	Private Car						
		Bus						
		Bus Rapid System						
		Taxi						
	Metered taxi							
Air								
Water(Ocean and Coastal)								

P	Potentially data source identified. Variable detail needs to be verify. Data sharing requirements need to be determined.
A	Data available officially requested, available variables identified, detail level of variables identified.
No Data	No data source identified.



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Data Sources

- Summary of data sources per transport sub-sectors:

Freight/ Passenger	Sub Sector	Mode	Activity	Consumption	Structure	Level 1	Level 2	Level 3
Freight	Rail		A	A	A	✓	✓	✓
	Road		A	P	P			
	Air		A	A	A	✓	✓	✓
	Water(Ocean, Coastal)		P	P	P			
Passenger	Rail		P	P	P			
	Road	Private Car	P	P	P			
		Bus	P	P	P			
		Bus Rapid System	P	P	P			
		Taxi	P	P	P			
	Metered taxi	No Data	No Data	No Data				
	Air		A	A	A	✓	✓	✓
Water(Ocean, Coastal)		A	No Data	No Data				

P Potentially data source identified. Variable detail needs to be verify. Data sharing requirements need to be determined.

A Data available officially requested, available variables identified, detail level of variables identified.

No Data No data source identified.

Indicator detail level

Data Sources

Owner		CSIR/Imperial					
Department/Database		State of Logistics South Africa					
Freight/Passenger		Freight					
Data source status		R- Research/Master Plan/ Once-off Study to consider					
Action required (Yes = See detail in Description column or Actions in							
Data collection intervals		Bi-annually					
Mode	Air	Rail	Maritime - Ships	Maritime - Ports	Road - Private	Road - Subsidised Bus/ Rapid Bus/Private Bus	Road - Taxi
		x			x		



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Data Sources

Total Income generated per transport subsector	Total Tonne moved per transport subsector	Vehicle Fleet	Total Tonne moved	Distance(km)	Tonne-km (tkm)	Vehicle -km (vkm)	Total number of vehicles/ships	Total Number of passengers	Passenger km	Number of passengers per vehicle
1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
Litre per vehicle Class	Litre per transport subsector	Total Fuel Consumed(Litre)	Engine capacity/ vehicle consumption	Litre per tonne (lt)	Litre per vehicle/ship	Litre-km (lkm) or Kj-km	Litre-passenger (lpax) or Kj-pax	Accidents and road Safety Aspects	Driver Behaviour	
1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	



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Data Sources



Description	Data Collection process:	
Database Owner/Custodian	Henry Mlotsa	
Tel	0123093190	
Cell	0829078073	
E-mail	mlotsah@dot.gov.za	



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Mr. Xolile Mabusela

Director: Energy Efficiency Initiatives

Department of Energy

Tel: +27 (0) 12 406 7684

Email: xolile.mabusela@energy.gov.za

Website: www.energy.gov.za

Luvuyo Njovane

Deputy Team Leader, EETMS

Department of Energy

Email: lnj@dem.dk



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