

Nelson Mandela Bay GHG Results



4 September 2014



GHG Inventory

Greenhouse gas inventory is an accounting of greenhouse gases (GHGs) emitted to or removed from the atmosphere over a period of time. An inventory is usually the first step taken by entities that want to reduce their GHG emissions, and is based on international standards or protocols

Benefits:

- Identifying areas of high emission and intense emission sectors
- Action Planning
- Prioritising and Decision Making Tool
- Target setting – aligning with national and international standards

- Local recognition
- Mobilise funding for local projects

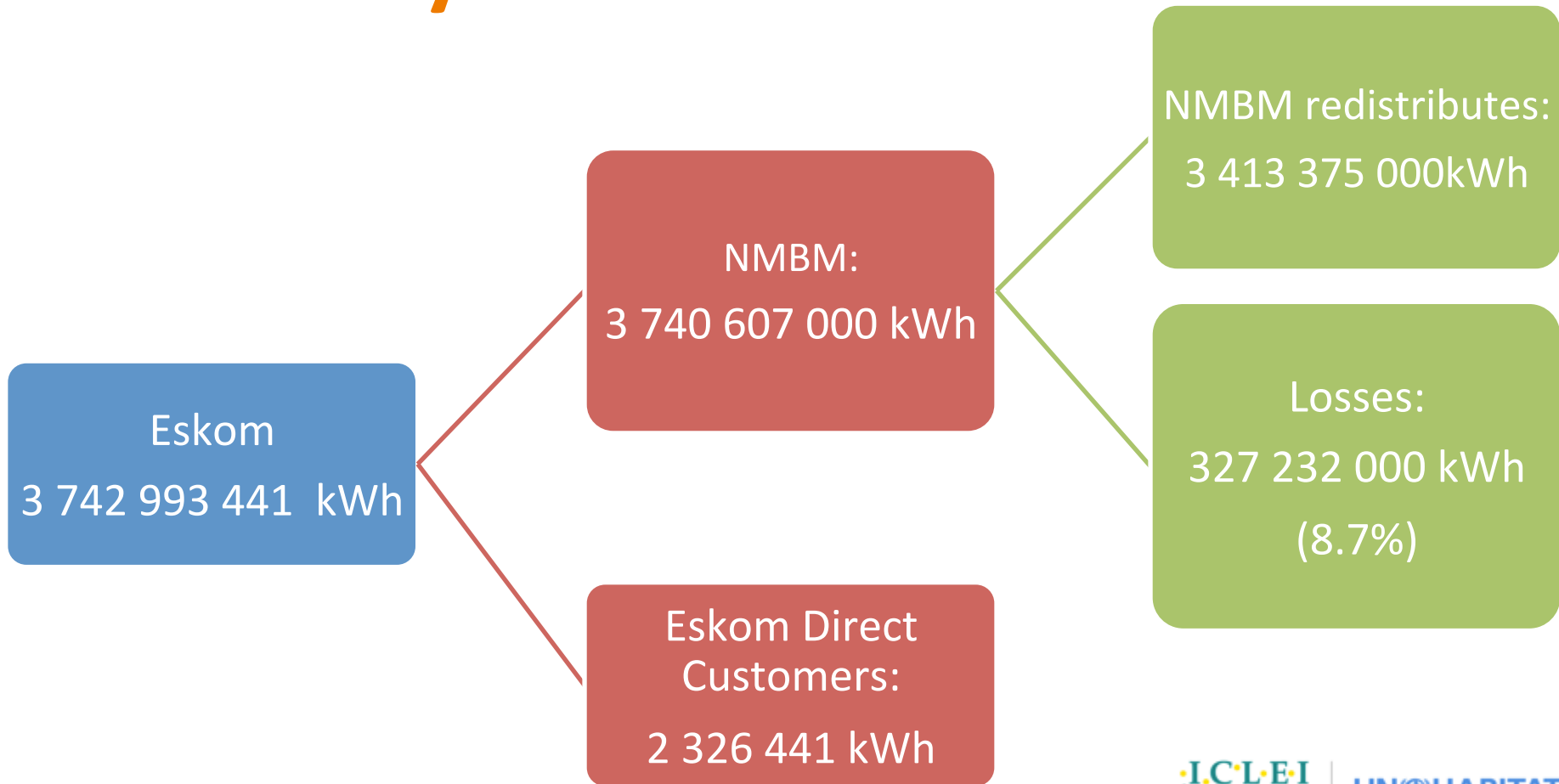
GHG Data Sources

- Electricity:
 - ✓ Eskom Customers (LPU, SPU and Pre-Paid)
 - ✓ NMBM Distribution, all categories
- Waste: NMBM Waste Management Department
- Liquid Fuel:
 - ✓ Bulk NMBM consumption from DoE website
 - ✓ NMBM Fleet consumption (Petrol & Diesel)
- Stats:
 - ✓ StatsSA census data: Household survey

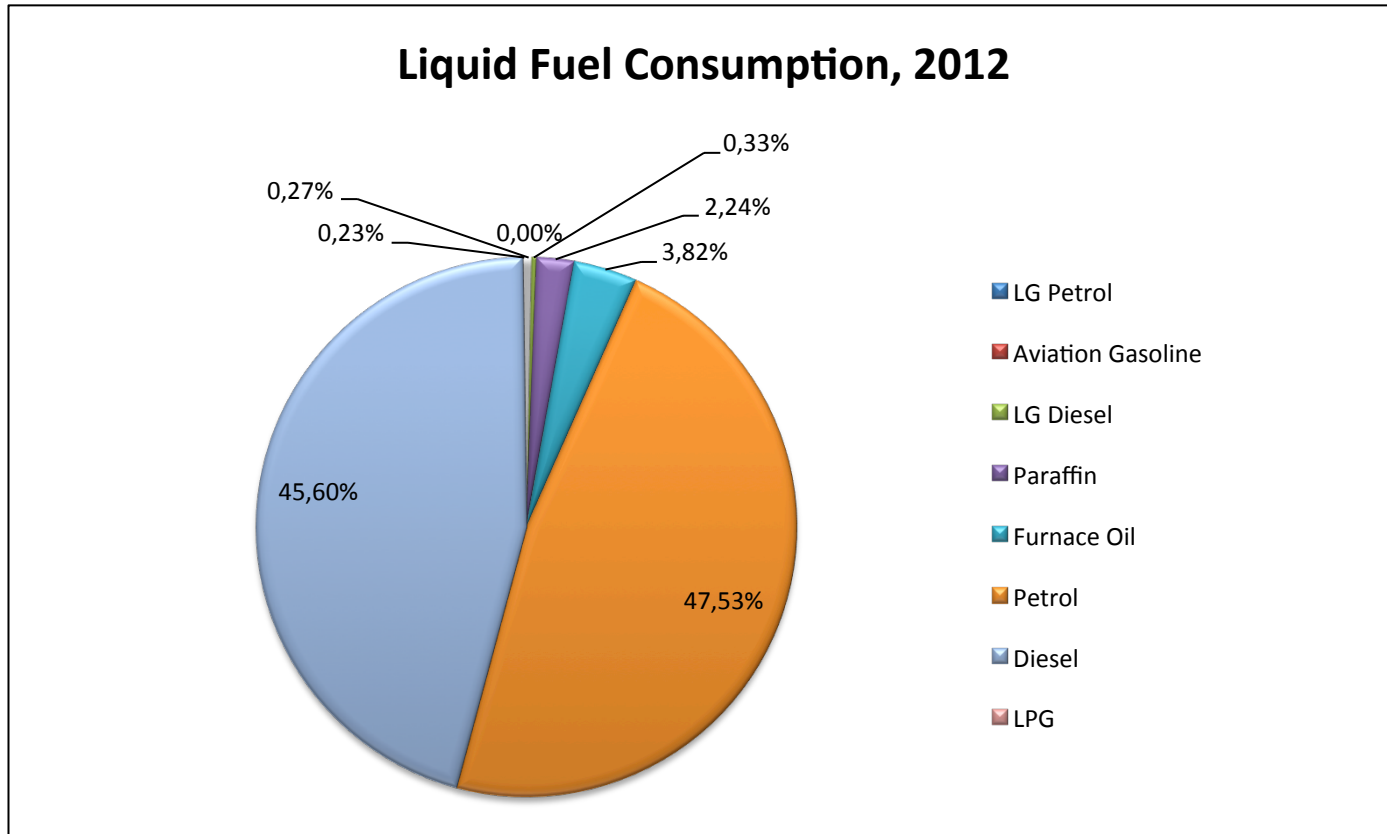
Supply – Side Energy

Supply-side refers to the classification of both primary and secondary energy types that are distributed to the demand-side for use; these include liquid and solid fuels, electricity and renewables.

Electricity: 2012

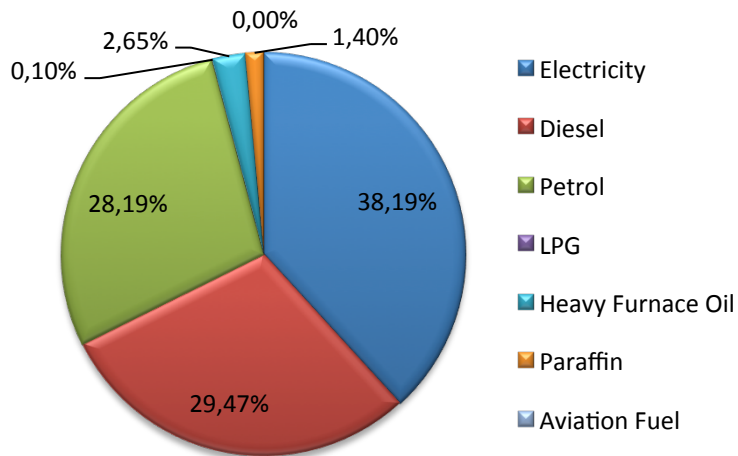


Fuel: Fuel Volume Sales in NMBM area

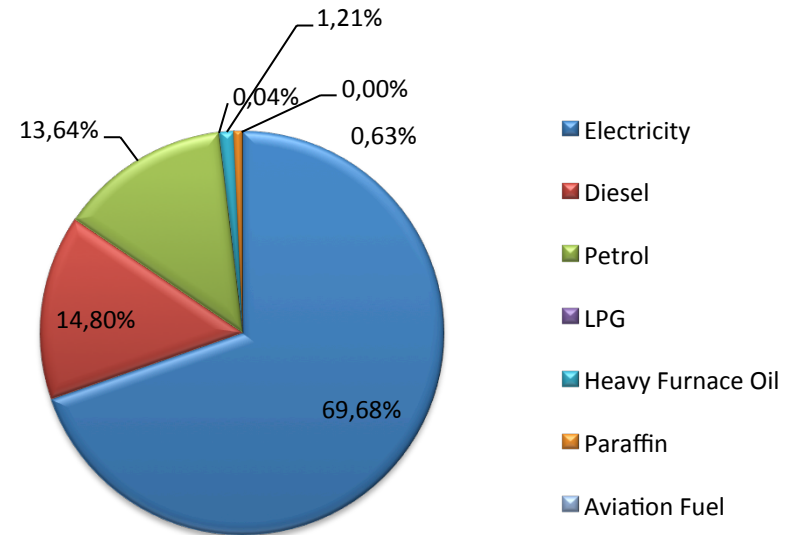


NMBM Supply-side, 2012

NMBM Energy Use (GJ) by Fuel, 2012



NMBM Emissions (tCO₂e) by Fuel, 2012

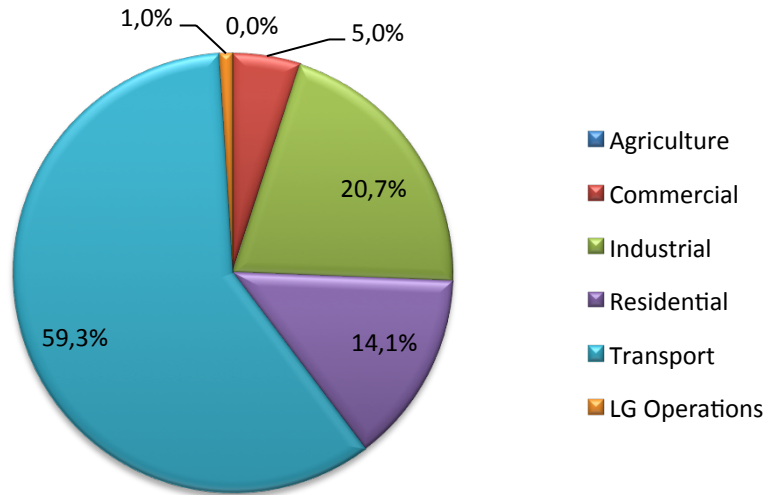


Demand – Side Energy

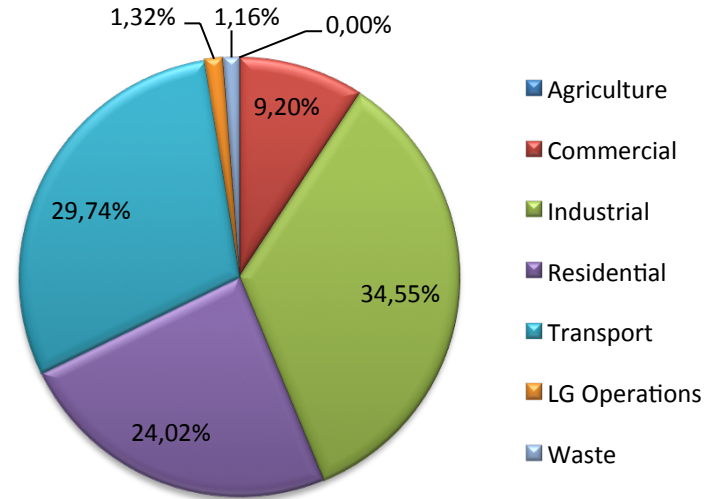
Demand-side energy refers to the energy end user, i.e. the sectors like residential, commercial, industrial users of energy within and urban jurisdiction.

NMBM Demand-side, 2012

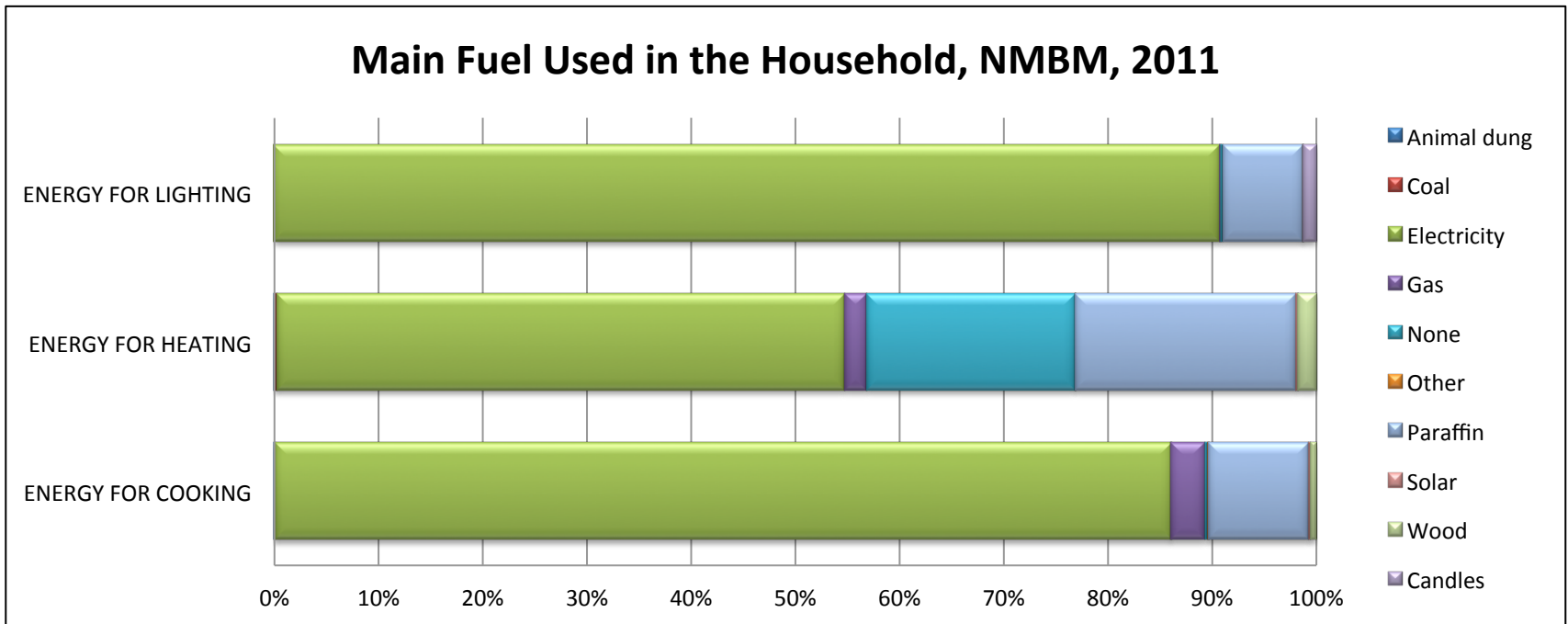
NMBM Energy Use (GJ) by Sector, 2012



NMBM Emissions (tCO2e) by Sector, 2012



Energy in Households



Energy & Emission Summary Table

Sector	Energy (GJ)	Emissions (tCO ₂ e)
Agriculture	515	142
Commercial	1 690 651	464 929
Industrial	7 046 817	1 745 512
Residential	4 813 684	1 213 796
Transport	20 214 253	1 502 898
LG Operations	336 603	66 606
Waste	-	58 770
Sub-total	34 102 524	5 052 653
Losses	1 178 035	323 960
Aviation Fuel	23	1
TOTAL	35 280 582	5 376 614

Final GHG Results

2012	tCO ₂ e	
	Community	Local Government
Waste	58 770	
Electricity	3 324 586	56 959
Fuel	1 602 693	9 648
Supply Sub-total	4 986 048	66 606
Supply total	5 052 655	
Percentage	98,7	1,3
Electricity Losses		323 960
Module Totals	4 986 048	390 566
Total	5 376 614	
Percentage	92,7	7,3

	Community	Local Government
Module Totals	4 986 048	390 566
Total	5 376 614	
Percentage	92,7	7,3
Carbon Emissions per capita	4,67	
Aviation Fuel	1	
	4 986 049	390 566
NMBM TOTAL EMISSIONS	5 376 615	
Carbon Emissions per capita	4,67	

GPC Standard Reporting

2012 Community GHG Profile Reporting Standard

Sector	Sector Total (tCO ₂ e)	Subsector	Subsector Total (tCO ₂ e)	Subtotal (tCO ₂ e)	GHG Emissions Sources	GPC No.
STATIONARY UNITS	3 814 945,01	Agriculture	141,69	141,69	Stationary Units Agriculture Energy Indirect Emissions (Scope2)	I.1.ii
		Residential Buildings	1 213 795,96	35 327,67	Stationary Units Residential Direct Emissions (Scope1)	I.1.i
				1 178 468,29	Stationary Units Residential Energy Indirect Emissions (Scope2)	I.1.ii
		Commercial/Institutional Facilities	855 495,08	9 647,69	Stationary Units Commercial/Institutional Facilities Direct Emissions (Scope1)	I.2.i
				845 847,39	Stationary Units Commercial/Institutional Facilities Energy Indirect Emissions (Scope2)	I.2.ii
		Industrial Energy Use	1 745 512,28	64 465,55	Stationary Units Industrial Energy Use Direct Emissions (Scope1)	I.4.i
1 681 046,73	Stationary Units Industrial Energy Use Energy Indirect Emissions (Scope2)			I.4.ii		
MOBILE UNITS	1 502 899,59	On-Road Transportation (Cars, LDV, HDV/Buses, others)	1 502 899,59	1 502 898,46	Mobile Units On-Road Transportation (Cars, LDV, HDV/Buses, others) Direct Emissions (Scope1)	II.1.i
		Aviation		1,14	Mobile Units Aviation Indirect Emissions from Inter-City Domestic Flights (LTO and Cruise) (Scope3)	II.4.iii
WASTE	58 769,58	Solid Waste Disposal	58 769,58	58 769,58	Waste Solid Waste Future Indirect Emissions from Community Generated Waste Landfilled in the Community in the Analysis-Year (Scope1)	III.1.i
IPPU	-	Industrial Processes (Mining)	-	-	IPPU Direct Emissions from Industrial Processes (Scope1)	IV.1.i
				-	IPPU Indirect Emissions from Industrial Processes (Scope2)	IV.1.ii

5 376 614,19 TOTAL Community Emissions (tCO₂e) by 2012 Accounting Standard (for benchmarking)

Aggregate tCO ₂ e by Scope	tCO ₂ e Scope-1	1 671 109
	tCO ₂ e Scope-2	3 705 504
	tCO ₂ e Scope-3	1
Total		5 376 614

Recommendations

- Energy data collection and analysis:
- Continuation of measuring, monitoring and reporting:
- Measures and solutions:
 - Local Government operations
 - Waste Management
 - Electricity use
 - Transportation