Environment Statistics - 2017

1. Introduction

This issue of Economic and Social Indicators presents statistics on Environment for year 2017 based on data gathered from various institutions.

The main environment indicators for the years 2016 and 2017 are given in Table 1, while technical notes are given at Annex. Figures presented in the tables may not add up to totals due to rounding.

2. Land use, Forestry and Agriculture

2.1 Land use

Land use refers to the main activity taking place on an area of land, for example, farming, forestry or housing. Based on latest available data (Table 2) in 2005, sugar cane plantations occupied 39% (72,000 hectares) of the total land area of the Island of Mauritius, forest, scrubs and grazing lands 25% (47,200 hectares), and built-up areas another 25% (46,500 hectares).

During the period 1995 to 2005, the land occupied by sugarcane, tea plantations and forestry decreased, while that of built-up areas, other agricultural activities, infrastructure and inland water resource systems went up.

2.2 Forestry

Preservation of forests is vital for the protection of the ecosystem. Total forest area was 47,066 hectares in 2017, same as in 2016. Some 22,066 hectares (47%) of the total forest area in 2017 was state-owned and the remaining 25,000 hectares (53%) was privately-owned (Table 3).

Out of the 22,066 hectares of state-owned forest area, 11,802 hectares (53.5%) were planted areas, while the Black River Gorges National Park and the nature reserves accounted for 6,574 (29.8%) and 799 (3.6%) hectares respectively. “Pas Geometriques” covered about 623 hectares (2.8%), other nature parks, 906 hectares (4.1%) and other forest lands, 1,362 hectares (6.2%).

The 25,000 hectares of privately-owned forest lands consisted of 18,447 (74%) hectares of plantation, forest lands, scrub and grazing lands, and 6,553 (26%) hectares of mountain, rivers and nature reserves.

2.3 Agriculture

The production of sugar cane went down by 2.2% from 3,798,448 tonnes in 2016 to 3,713,331 tonnes in 2017. The area harvested decreased by 2.9% from 51,476 hectares in 2016 to 49,973 hectares in 2017. The average yield has increased by 0.7% from 73.79 tonnes per hectare in 2016 to 74.31 in 2017 (Table 4).

The production of sugar went down by 8% from 386,277 tonnes in 2016 to 355,213 tonnes in 2017. Compared to 10.18% in 2016, the average extraction rate was 9.57% in 2017, representing a decrease of 6%, mainly due to unfavourable climatic conditions.

The area under foodcrops harvested increased by 0.2% from 7,766 hectares in 2016 to 7,780 hectares in 2017. Production of foodcrops increased by 0.3% from 106,271 tonnes to 106,621 tonnes in 2017.

The area under tea plantation in 2017 was 622 hectares, same as in 2016. The production of green tea leaves went up from 7,301 tonnes in 2016 to 7,309 tonnes in 2017.

2.4 Import of fertilisers and pesticides

Intensive use of chemical based fertilisers and other agro-chemicals may contribute to the pollution of the environment through the leaching of nitrate to ground water.

From 2016 to 2017, import of fertilisers decreased by 7% from 47,766 tonnes to 44,404 tonnes. Import of pesticides also, decreased by 4.9 % from 2,554 tonnes to 2,428 tonnes (Table 5).

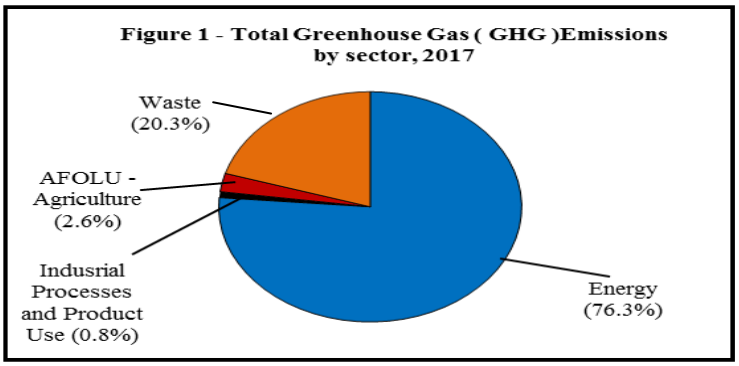
3 Greenhouse gas (GHG) emissions

GHG are gases occurring naturally and also resulting from human-induced activities (anthropogenic emissions from production and consumption). They contribute directly or indirectly to global warming. Some main GHG are Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O).

3.1 Total GHG emissions by sector

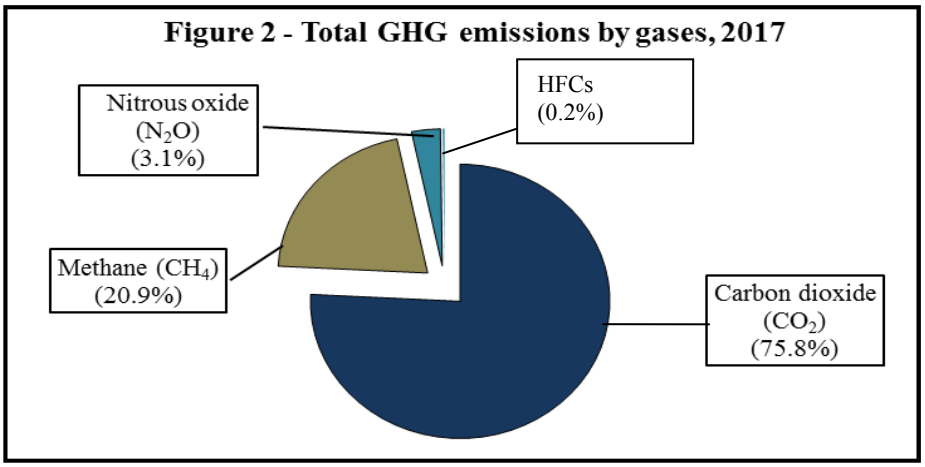
The total GHG emissions (excluding Forestry and Other Land Use) in 2017 were 5,572.0 Gg carbon dioxide equivalent (CO_2-eq) compared to 5,403.1 Gg CO_2-eq in 2016, representing an increase of 3.1%. In 2017, there was a rise in emissions from the energy, industrial process and product use, and waste sectors, partly offset by a decrease in emission from agriculture (Table 7). The contribution of GHG to total global GHG emission stood at 0.01%.

The energy sector was the largest contributing sector and accounted for 76.3% (4,249.6 Gg CO_2-eq) of the total emissions followed by the waste sector with 20.3 % (1,133.9 Gg CO_2-eq), the agriculture sector with 2.6% (143.1 Gg CO_2-eq) and the industrial processes and product use sector, 0.8% (45.4 Gg CO_2-eq) - (Figure 1).



3.2 Total GHG emissions by gases

In 2017, carbon dioxide (CO_2) was the main GHG representing 75.8% (4,226.2 Gg) of total GHG emissions. Methane (CH_4) contributed 20.9% (1,162.1 Gg CO_2-eq), nitrous oxide (N_2O) 3.1% (173.6 Gg CO_2-eq), and hydrofluorocarbons (HFCs) 0.2% (10.1 Gg CO_2-eq)-(Figure 2).



3.3 Net GHG emissions

The net GHG emissions, after accounting for the removal of CO_2 by Forestry and Other Land Use sector, stood at around 5,207.3 Gg CO_2-eq in 2017, up by 3.3% from 5,039.8 Gg CO_2-eq in 2016 (Table 7).

3.4 Energy and Greenhouse gas (GHG)

3.4. 1 Energy sector

Though vital for economic development and households, the production and consumption of energy release greenhouse gases. Carbon dioxide is the main component of the greenhouse gases.

3.4.2 Primary energy requirement

Total primary energy requirement (defined as the sum of imported and locally available fuels less re-exports and bunkering after adjusting for stock changes) was 1,603 thousand tonnes of oil equivalent (ktoe) in 2017, some 3.1% more than in 2016 (1,555 ktoe) - (Table 6).

Some 14% (218 ktoe) was met from locally renewable energy sources (hydro, wind, landfill gas, bagasse, fuelwood and photovoltaic), while 86% (1,385 ktoe) were from imported fossil fuels (petroleum products and coal).

Energy supply from local renewable sources decreased by 4.0% from 227 ktoe in 2016 to 218 ktoe in 2017. This was due to a decrease of 5.8% in the production of bagasse from 206 ktoe in 2016 to 194 ktoe in 2017, 10.5% for hydro from 8.6 ktoe to 7.7 ktoe, 12.5% for landfill gas from 1.6 ktoe to 1.4 ktoe and wind by 13.3% from 1.5 ktoe to 1.3 ktoe. On the other hand, photovoltaic increased (around 2 folds) from 2.6 to 6.6 ktoe.

From 2016 to 2017, energy supply from imported fossil fuels went up by 4.2% from 1,329 to 1,385 ktoe. Energy supply from petroleum products increased by 4.7% from 873 ktoe in 2016 to 914 ktoe in 2017 and that of coal increased by 3.5% from 455 ktoe to 471 ktoe (Table 6).

3.4.3 Electricity generation

Total electricity generated increased by 3.8% from 3,042 GWh in 2016 to 3,157 GWh in 2017. In 2017, around 42% of electricity was generated from coal, 37% from diesel and fuel oil, and 21% from renewable sources. Electricity generated from coal increased by 3.6% from 1,267 GWh in 2016 to 1,312 GWh in 2017; that from diesel and fuel oil together increased by 6.4% from 1,110 GWh in 2016 to 1,181 GWh in 2017 (Table 9).

Electricity generated from renewable sources decreased from 664 GWh to 661 GWh, down by 0.5%. Landfill gas went down by 10.5% from 19 GWh to 17 GWh, bagasse by 6.8% from 497 GWh to 463 GWh, wind by 16.7% from 18 GWh to 15 GWh and hydro by 10% from 100 GWh to 90 GWh. On the other hand, photovoltaic increased (around 2 folds) from 30 GWh to 76 GWh (Table 9).

3.4.4 Fuel input for electricity generation

Fuel input for electricity generation from petroleum products, coal and bagasse as shown in Table 10 indicates that:

- In 2017, coal (52.7%) was the major fuel used to produce electricity followed by fuel oil (26.9%) and bagasse (20.2%);
- Between 2016 and 2017, fuel input increased by 2.6% from 833 ktoe to 855 ktoe;
- Input of fuel oil increased by 7%, from 215 ktoe in 2016 to 230 ktoe in 2017 and that of coal increased by 3.7%, from 435 ktoe in 2016 to 451 ktoe in 2017;
- Some 173 ktoe of bagasse was used to produce electricity in 2017 compared to 181 ktoe in 2016, down by 4.4%.

3.4.5 Energy sector emissions

In 2017, GHG emission from the energy sector stood at 4,250 Gg CO_2-eq, up by 3.3% from 4,115 Gg CO_2-eq in 2016. Within the energy sector, the sub-sector that contributed most of

the GHG emission was the energy industries (electricity generation) which accounted for 60.4 % (2,568 Gg CO_2-eq) of the total emissions. Next came the transport sector which made up 25.5% (1,083 Gg CO_2-eq) of the total emissions, the manufacturing industries and construction making up another 8.2% (349 Gg CO_2-eq) and the other sectors accounting for the remaining 5.9% (250 Gg CO_2-eq) - (Table 8).

3.4.5.1 Energy industries (electricity generation)

GHG emission from the generation of electricity (energy industries) stood at 2,568 Gg CO_2-eq in 2017 compared to 2,457 Gg CO_2-eq in 2016, representing a rise of 4.5% (Table 8). This is mainly attributed to a 3.7% increase (from 435 ktoe to 451 ktoe) in the quantity of coal and 7% increase (from 215 ktoe to 230 ktoe) in the amount of fuel oil used to produce electricity (Table 10).

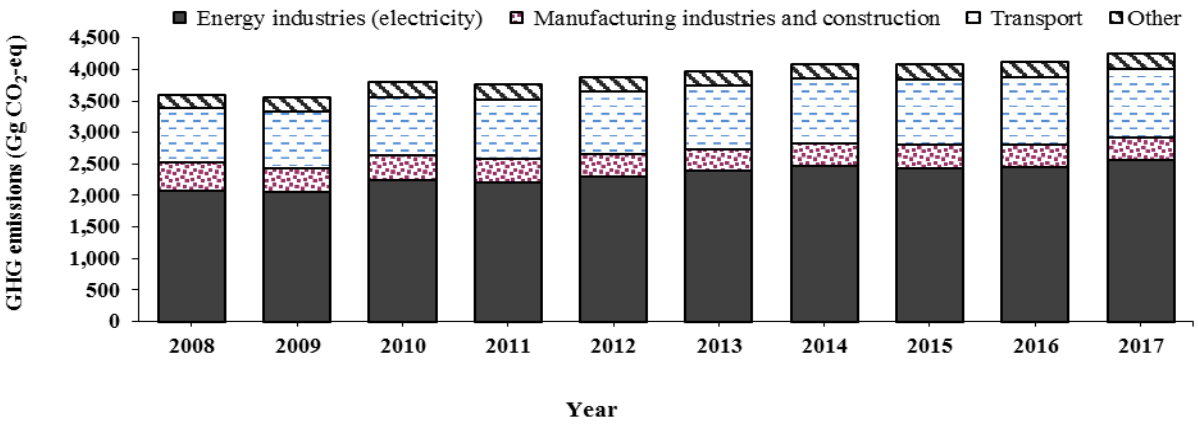
3.4.5.2 Transport industries

In 2017, GHG emission from the transport sector was estimated at 1,083 Gg CO_2-eq compared to 1,063 in 2016, up by 1.9% due to higher fuel consumption. It is to be noted that the number of registered motor vehicles went up by 4.8% from 507,676 in 2016 to 531,797 in 2017 (Table 12). The energy consumed by transport increased from 506 ktoe to 530 ktoe (4.7%) - (Table11).

3.4.5.3 Manufacturing industries and construction

The manufacturing industries and construction sector registered an increase of 0.6% in GHG emissions in 2017 (from 347 to 349 Gg CO_2-eq). The amount of fossil fuels consumed by the sector was 98.2 ktoe in 2017 compared to 97.6 ktoe in 2016 (Table11).

Figure 3 - GHG emissions from energy sector (fuel combustion activities), Republic of Mauritius, 2008 - 2017



4. Temperature

Table 13 indicates that, in 2017, the mean maximum temperature was above the long term (1981-2010) mean for all months of the year. Furthermore, the mean minimum temperature was also above the long term mean for all the months of 2017. March was the warmest month and August the coolest month.

The highest maximum temperature recorded was 35.6 ˚C, recorded on 4 February 2017 at Champs De Mars, Port Louis. The lowest minimum temperature was 9.5 ˚C, which was recorded on 29 July 2017 at Bois Cheri.

5. Water

Water, being a basic support element for human life and ecosystems, is of vital environmental and biological importance.

5.1 Rainfall

During the year 2017, the mean amount of rainfall recorded around the Island of Mauritius was 2,140 millimetres (mm), representing a rise of 12.9% compared to 1,895 mm in 2016 and an increase of 6.8% from the long term (1981-2010) mean of 2,003 mm.

The wettest month in 2017 was May with a mean of 367 mm, which represented a surplus of 148% relative to the long term (1981-2010) mean of 148 mm. September was the driest month with a mean of 56 mm of rainfall, registering a deficit of 42% compared to the long term (1981-2010) mean of 96 mm (Table 14).

5.2 Water Balance

In 2017, the Island of Mauritius received 3,991 million cubic metres (Mm^3) of water from precipitation (rainfall), 12.9% higher when compared to 3,536 Mm^3 in 2016. Only 10 % (399 Mm^3) of the water went as ground water recharge, while evapotranspiration and surface runoff accounted for 30% (1,197 Mm^3) and 60% (2,395 Mm^3) respectively (Table 15).

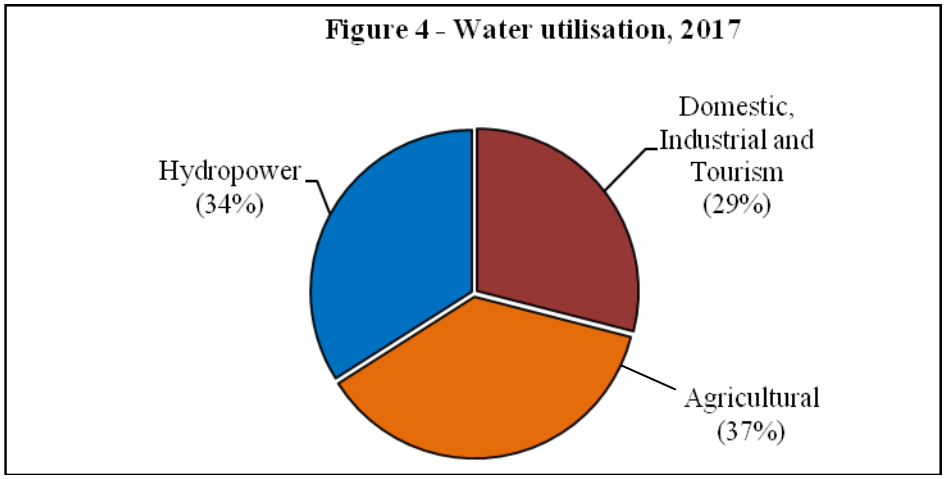
5.3 Water utilisation

Total water utilisation was estimated at 928 Mm^3 in 2017. Around 84% (780 Mm^3) of the total water utilisation was met from surface water, 15% (142 Mm^3) from ground water and 1% from reuse of treated wastewater.

The agricultural sector accounted for 37% (344 Mm^3) of the water utilised, hydropower 34% (312 Mm^3), and domestic, industrial and tourism sector 29% (272 Mm^3) - (Table 16).

Compared to 2016, water utilisation decreased by 4%, from 967 to 928 Mm^3 with changes as follows:

- hydropower (-8.5%);
- agriculture (-3.6%); and
- domestic, industrial and tourism (+1.1).

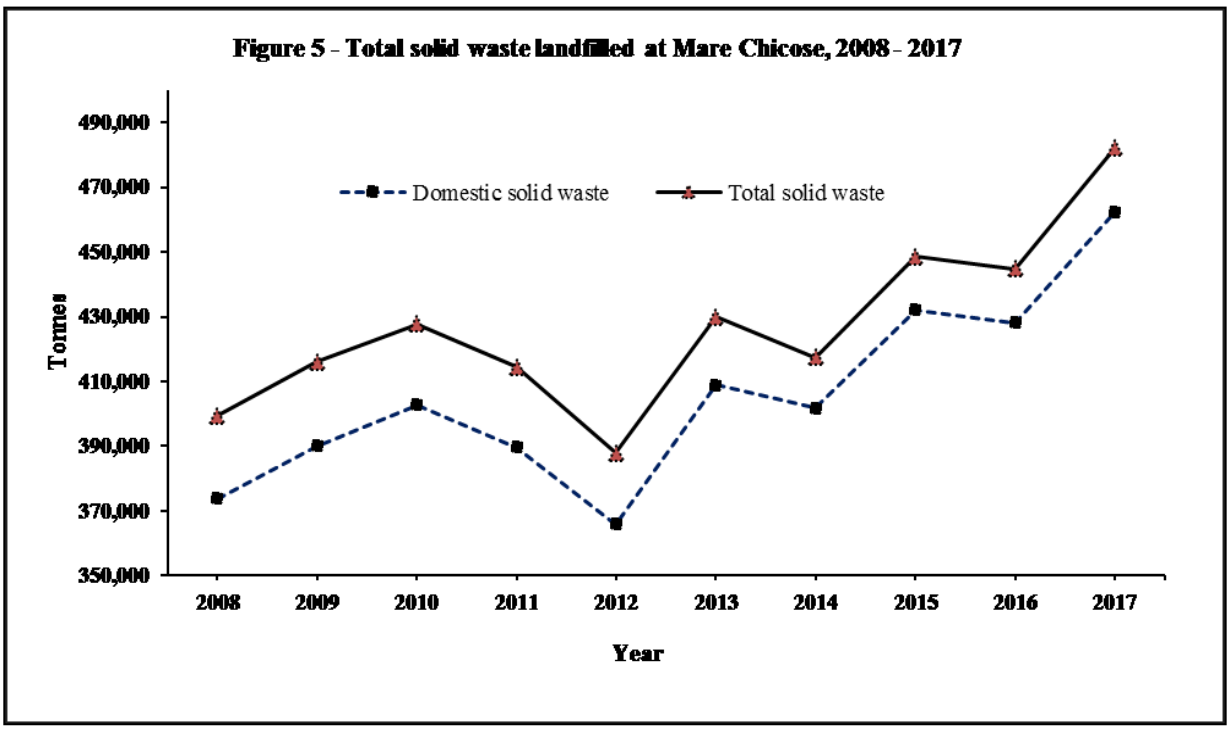


6. Waste

6.1 Waste disposal at Mare Chicose Landfill

The total amount of solid waste landfilled at Mare Chicose increased by 8.4% from 444,695 tonnes in 2016 to 482,196 tonnes in 2017 (Table 17).

Domestic waste constituted 96% of the total solid waste landfilled in 2017. The trend of the amount of solid waste landfilled is as shown in Figure 5.



7. Complaints

Effective environmental management needs appropriate coordination and monitoring of environmental problems. The Environment and Sustainable Development Division of the Ministry of Social Security, National Solidarity, and Environment and Sustainable Development addresses complaints received from the general public according to a complaints handling protocol.

Complaints received at the Pollution Prevention and Control Division of the Ministry of Social Security, National Solidarity, and Environment and Sustainable Development (Environment and Sustainable Development Division), including those received from the Citizen Support Portal (effective from May 2017) are categorised at Table 18. The number of complaints received increased by 9.1% from 701 in 2016 to 765 in 2017. The main categories of complaints were as follows: noise (17%), air pollution (17%), solid waste (13%), odour (12%), bareland (10%) and waste water, (10%).

8. Environmental Impact Assessment (EIA) Licences and Preliminary Environmental Report (PER) Approvals

8.1 EIA Licences and PER Approvals

In 2017, some 39 EIA licences were granted, of which 8 were for land parcelling (morcellement), 7 for coastal hotels and related works, 7 for "housing/integrated resort scheme/property development scheme/smart city", 5 for photovoltaic farms and 3 for construction of road and highway (Table 19).

During the same period, 18 PER approvals were issued, of which 8 for industrial development and 5 were for poultry rearing (Table 20).

Statistics Mauritius

Ministry of Finance and Economic Development

Port Louis

July 2018

Contact Persons

Mrs. D. Balgobin
Statistician
Mr. A.Dindoyal
Senior Statistical Officer
Ministry of Social Security, National Solidarity, and Environment and Sustainable Development, (Environment and Sustainable Development Division).
Ken Lee Tower
Port Louis
Tel. (230) 210-6186
Website : http://statsmauritius.govmu.org
Email cso_envi@govmu.org

Table 1 - Main environment indicators, 2016 and 2017

Indicator	Unit	2016	2017
Republic of Mauritius			
1. Terrestrial protected areas	hectares	14,914.5	14,914.5
2. Marine protected areas	hectares	13,953	13,953
3. Total Greenhouse gas (GHG) emission	Gg CO_2-eq	5,403.0 [1]	5,572.0
4. Total carbon dioxide emission	000 tons	4,087.0 [1]	4,226.2
5. Per capita carbon dioxide emission	tons	3.2	3.3
6. Total electricity generated	GWh	3,042.2	3,156.8
7. Electricity generated from renewable sources	%	21.8	20.9
8. Total primary energy requirement	ktoe	1,555.3 [1]	1,603.0
9. Primary energy requirement from renewable sources	%	14.6	13.6
10. Per capita primary energy requirement	toe	1.23	1.27
11. Per capita final energy consumption	toe	0.75	0.78
12. Energy intensity [2]	toe per Rs.100,000 GDP at 2006 prices	0.47	0.46
Island of Mauritius			
13. Forest area	ha	47,066	47,066
14. Total forest area as a % of total land area	%	25.2	25.2
15. Total fish production (fresh-weight equivalent)	tons	16,874 [1]	22,732
16. Irrigated land	ha	16,807	16,455
17. Mean annual rainfall	millimetres	1,895	2,140
18. Mean of maximum annual temperature	degrees Celcius	27.7	28.3
19. Mean of minimum annual temperature	degrees Celcius	20.4	21.0
20. Annual fresh water abstraction	Mm^3	620	610
21. Daily per capita domestic water consumption	litres	166.0 [1]	174.0
22. Daily per capita solid waste disposed at landfill	Kg	1.00	1.08

[1] Revised

Table 2 - Land use by category, Island of Mauritius, 1995 and 2005

Land use	1995		2005 [1]		Change	
	Hectares	%	Hectares	%	Hectares	%
Sugar cane plantations	76,840	41.2	72,000	38.6	-4,840	-6.3
Tea plantations	3,660	2.0	674	0.4	-2,986	-81.6
Other agricultural activities	6,000	3.2	8,000	4.3	2,000	33.3
Forests, shrubs and grazing lands	57,000	30.6	47,200	25.3	-9,800	-17.2
Infrastructure	4,000	2.1	4,500	2.4	500	12.5
Inland water resource systems	2,600	1.4	2,900	1.6	300	11.5
Built-up areas	36,400	19.5	46,500	24.9	10,100	27.7
Abandoned cane field	…	…	4,726	2.5	…	…
Total	**186,500**	**100.0**	**186,500**	**100.0**	**0**	**0**

Source: (i) Sugar Insurance Fund Board - Sugar cane plantation, (ii) Tea Board - Tea Plantation, (iii) Climate Change Activities Report, May 2006 - Other

[1] Estimate

Table 3 - Forest area by category, Island of Mauritius, 2016 - 2017

Hectares

Category of Forest	2016		2017	
	Hectares	%	Hectares	%
State - owned lands	**22,066**	**46.9**	**22,066**	**46.9**
Plantations	11,798	25.1	11,802	25.1
Nature reserves	799	1.7	799	1.7
Mainland	*200*	*0.4*	*200*	*0.4*
Islets	*599*	*1.3*	*599*	*1.3*
Black River Gorges National Park	6,574	14.0	6,574	14.0
Bras D'Eau National Park	497	1.1	497	1.1
Islet National Parks	134	0.3	134	0.3
Vallee d'Osterlog Endemic Garden	275	0.6	275	0.6
Other Forest Lands	1,366	2.9	1,362	2.9
Pas Geometriques	623	1.3	623	1.3
Plantations	*214*	*0.5*	*214*	*0.5*
Leased for grazing and tree planting	*230*	*0.5*	*230*	*0.5*
Others (mostly rocky)	*179*	*0.4*	*179*	*0.4*
Private - owned lands [1]	**25,000**	**53.1**	**25,000**	**53.1**
Reserves	6,553	13.9	6,553	13.9
Mountain reserves	*3,800*	*8.1*	*3,800*	*8.1*
River reserves	*2,740*	*5.8*	*2,740*	*5.8*
Private Reserves	*13*	*0.0*	*13*	*0.0*
Other [2]	18,447	39.2	18,447	39.2
Total	**47,066**	**100.0**	**47,066**	**100.0**

[1] Current figures for privately-owned lands are crude estimates based on expert knowledge from Forestry Service

[2] Includes plantations, forest lands, scrub and grazing lands

Source : Forestry Service, Ministry of Agro Industry and Food Security

Table 4 - Agricultural crops - Area harvested and production, Island of Mauritius, 2016 - 2017

Crops	2016		2017 [1]	
	Area harvested (hectares)	Production (tonnes)	Area harvested (hectares)	Production (tonnes)
Sugar cane [2]	51,476 [3]	3,798,448	49,973	3,713,331
Tea (green leaves)	622 [4]	7,301	622 [4]	7,309
Food crops	7,766 [3]	106,271 [3]	7,780	106,621
Sugar	n.a.[5]	386,277	n.a.[5]	355,213

[1] Provisional [2] Crop year (July to June of the following year) [3] Revised [4] Area under cultivation [5] Not applicable

Table 5 - Imports and value (c.i.f)[1] of fertilisers and pesticides, 2016 - 2017

Year	Fertilisers		Pesticides	
	Quantity (tonnes)	Value c.i.f (Rs mn)	Quantity (tonnes)	Value c.i.f (Rs mn)
2016 [2]	47,766	545.0	2,554	483.0
2017 [3]	44,404	487.0	2,428	465.0

[1] Cost, Insurance, Freight [2] Revised [3] Provisional

Table 6 - Total primary energy requirement, Republic of Mauritius, 2016 - 2017

ktoe (000 Tonne of oil equivalent)

Energy source	2016		2017	
	ktoe	%	ktoe	%
Imported (Fossil Fuels)	**1,328.5**	**85.4**	**1,385.3**	**86.4**
Coal	***455.3***	***29.3***	***471.3***	***29.4***
Petroleum products	***873.2***	***56.1***	***914.0***	***57.0***
Gasolene	178.9	11.5	187.7	11.7
Diesel Oil	210.6	13.5	214.4	13.4
Dual Purpose Kerosene	148.4	9.5	161.3	10.1
Kerosene	*0.8*	*0.1*	*1.0*	*0.1*
Aviation Fuel	*147.6*	*9.5*	*160.2*	*10.0*
Fuel Oil	254.4	16.4	269.3	16.8
LPG	80.9	5.2	81.3	5.1
Local (Renewables) [1]	**226.8**	**14.6**	**217.7**	**13.6**
Hydro	8.6	0.6	7.7	0.5
Wind	1.5	0.1	1.3	0.1
Landfill Gas	1.6	0.1	1.4	0.1
Photovoltaic	2.6	0.1	6.6	0.4
Bagasse [2]	206.1	13.3	194.3	12.1
Fuelwood [2]	6.4	0.4	6.4	0.4
Total	**1,555.3**	**100.0**	**1,603.0**	**100.0**

[1] Source: Central Electricity Board and Annual Sugar Industry Energy Survey [2] Estimates

Table 7 - National inventory of greenhouse gas emissions [1] by sector, Republic of Mauritius, 2014 - 2017

Sector	Gg or Thousand Tonnes												Gg CO_2 - eq				Greenhouse gas emissions (GHG) [3] (Gg CO_2 - eq) excluding Forestry and Other Land Use (FOLU)				% of total GHG emissions			
	Carbon dioxide (CO_2)				Methane (CH_4)				Nitrous oxide (N_2O)				(HFCs)											
	2014 [2]	2015 [2]	2016 [2]	2017 [2]	2014 [2]	2015 [2]	2016 [2]	2017 [2]	2014 [2]	2015 [2]	2016 [2]	2017 [2]	2014 [2]	2015 [2]	2016 [2]	2017 [2]	2014 [2]	2015 [2]	2016 [2]	2017 [2]	2014 [2]	2015 [2]	2016 [2]	2017 [2]
1. Energy [4]	4,025.25	4,021.74	4,053.28	4,190.80	0.84	0.93	0.89	0.88	0.14	0.15	0.14	0.13	..	..	..	..	4,086.29	4,087.77	4,115.35	4,249.58	77.0	76.8	76.2	76.3
2. Industrial Processes and Product Use (IPPU)	37.94	32.40	33.75	35.37	..	..	..	..	..	..	..	..	6.92	7.77	8.92	10.06	44.86	40.17	42.67	45.43	0.8	0.8	0.8	0.8
3. Agriculture Forestry and Other Land Use (AFOLU) - Agriculture	..	..	..	..	1.57	1.58	1.54	1.50	0.40	0.31	0.37	0.36	..	..	..	..	156.97	129.28	147.04	143.10	3.0	2.4	2.7	2.6
4. Waste	..	..	..	..	47.53	49.64	51.25	52.96	0.07	0.07	*0.07*	*0.07*	..	..	..	..	1,019.83	1,064.14	1,097.95	1,133.86	19.2	20.0	20.3	20.3
Total	**4,063.19**	**4,054.14**	**4,087.03**	**4,226.17**	**49.94**	**52.15**	**53.68**	**55.34**	**0.61**	**0.53**	**0.58**	**0.56**	**6.92**	**7.77**	**8.92**	**10.06**	**5,307.95**	**5,321.36**	**5,403.01**	**5,571.97**	**100.0**	**100.0**	**100.0**	**100.0**

Emissions	Gg CO_2-eq			
	2014 [2]	2015 [2]	2016 [2]	2017 [2]
1. GHG emissions excluding FOLU	5,307.95	5,321.36	5,403.01	5,571.97
2. GHG removals [5] - (FOLU)	365.10	367.90	363.20	364.72
3. GHG emissions including FOLU (= 1 - 2)	4,942.85	4,953.46	5,039.81	5,207.25

[1] Based on 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines of the United Nations Framework Convention on Climate Change (UNFCCC)

[2] Provisional (To be revised in First Biennal Update Report)

[3] Refers to carbon dioxide, methane, nitrous oxide and hydrofluorocarbons

[4] Transport under Energy sector is based on linear extrapolation of National Inventory Report (NIR) series 2006 - 2013

[5] Excludes the amount of CO_2 sequestrated by trees and vegetations found along rivers, canal reserves and trees along roads

.. : Not occuring

Table 8 - Greenhouse gas emissions from energy sector (fuel combustion activities), Republic of Mauritius, 2014 - 2017

Gg CO_2- eq

Energy Sector	2014		2015		2016		2017	
	Quantity	%	Quantity	%	Quantity	%	Quantity	%
Energy industries (electricity generation)	2,471.04	60.4	2,434.77	59.6	2,456.87	59.7	2,567.50	60.4
Manufacturing industries and construction	357.91	8.8	364.07	8.9	347.33	8.5	349.21	8.2
Transport [1]	1,021.64	25.0	1,043.74	25.5	1,063.40	25.8	1,082.67	25.5
Other [2]	235.69	5.8	245.19	6.0	247.75	6.0	250.20	5.9
Total	**4,086.29**	**100.0**	**4,087.77**	**100.0**	**4,115.35**	**100.0**	**4,249.58**	**100.0**

[1] Based on linear extrapolation of NIR series 2006 - 2013

[2] Includes Residential, Commercial, Institutional and Agriculture

Table 9 - Electricity generation by source of energy, Republic of Mauritius, 2016 - 2017

Source of energy	2016		2017	
	GWh	%	GWh	%
Primary energy	**166.5**	**5.5**	**197.6**	**6.3**
Hydro (renewable energy)	99.5	3.3	89.8	2.9
Wind (renewable energy)	18.0	0.6	14.6	0.5
Landfill gas (renewable energy)	18.7	0.6	16.9	0.5
Photovoltaic (renewable energy)	30.3	1.0	76.3	2.4
Secondary energy	**2,875.7**	**94.5**	**2,959.2**	**93.7**
Gas turbine (kerosene)	2.1	0.1	2.7	0.1
Diesel and Fuel oil	1,109.8	36.5	1,181.3	37.4
Coal	1,266.8	41.6	1,312.0	41.6
Bagasse (renewable energy)	497.0	16.3	463.2	14.7
Total	**3,042.2**	**100.0**	**3,156.8**	**100.0**
of which **:** renewable energy	**663.5**	**21.8**	**660.8**	**20.9**

Table 10 - Fuel input for electricity production, Republic of Mauritius, 2016 - 2017

ktoe (000 Tonne of oil equivalent)

Fuel	2016		2017 [1]	
	Quantity (ktoe)	%	Quantity (ktoe)	%
Petroleum products	**217.0**	**26.1**	**232.1**	**27.1**
Fuel oil	*215.2*	*25.8*	*229.8*	*26.9*
Diesel oil	*1.0*	*0.1*	*1.3*	*0.2*
Kerosene	*0.8*	*0.1*	*1.0*	*0.1*
Coal	**434.8**	**52.2**	**450.5**	**52.7**
Total petroleum products and coal	***651.8***	***78.3***	***682.6***	***79.8***
Local renewables	**180.7**	**21.7**	**172.6**	**20.2**
Bagasse	*180.7*	*21.7*	*172.6*	*20.2*
Total	**832.5**	**100.0**	**855.2**	**100.0**

Source: Central Electricity Board and Annual Sugar Industry Energy Survey [1] Provisional

Table 11 - Final energy consumption by sector and type of fuel, 2016 - 2017

Sector	2016			2017		
	Tonne (except Electricity in GWh)	ktoe	%	Tonne (except Electricity in GWh)	ktoe	%
1. Manufacturing		**206.9**	**21.8**		**205.8**	**21.0**
1.1 excluding bagasse		**181.5**	**19.1**		**184.1**	**18.7**
Fuel oil	36,789	35.3	3.7	37,143	35.7	3.6
Diesel oil	35,305	35.7	3.7	35,525	35.8	3.7
LPG	5,601	6.0	0.6	5,462	5.9	0.6
Coal	33,193	20.6	2.2	33,527	20.8	2.1
Fuel wood [2]	1,261	0.5	0.1	1,242	0.5	0.0
Electricity (*GWh*)	970.3	83.4	8.8	993.5	85.4	8.7
1.2 bagasse	**158,431**	**25.4**	**2.7**	**135,746**	**21.7**	**2.2**
2. Transport [1]		**505.6**	**53.2**		**530.4**	**54.0**
Land		***348.7***	***36.7***		***360.7***	***36.7***
Gasolene	*161,833*	*174.7*	18.4	*169,764*	*183.3*	18.7
LPG	*3,479*	*3.8*	0.4	*3,316*	*3.7*	0.3
Diesel oil	*168,544*	*170.2*	17.9	*172,010*	*173.7*	17.7
Air						
Aviation Fuel	***141,915***	***147.6***	**15.5**	***154,072***	***160.2***	**16.3**
Sea		***9.3***	***1.0***		***9.5***	***1.0***
Gasolene	*3,844*	*4.2*	0.5	*4,038*	*4.3*	0.5
Diesel oil	*1,235*	*1.2*	0.1	*1,261*	*1.3*	0.1
Fuel oil	*4,048*	*3.9*	0.4	*4,039*	*3.9*	0.4
3. Commercial and Distributive Trade		**97.6**	**10.2**		**99.6**	**10.1**
LPG	16,083	17.4	1.8	16,173	17.5	1.8
Charcoal [2]	420	0.3	0.0	414	0.3	0.0
Electricity (*GWh*)	929.1	79.9	8.4	952.0	81.8	8.3
4. Household		**132.2**	**13.9**		**134.3**	**13.7**
Kerosene	71	0.1	0.0	63	0.1	0.0
LPG	49,455	53.4	5.6	50,011	54.0	5.6
Fuelwood [2]	13,564	5.2	0.5	13,442	5.1	0.5
Charcoal [2]	95	0.1	0.0	94	0.1	0.0
Electricity (*GWh*)	854.5	73.5	7.8	872.7	75.0	7.6
5. Agriculture		**4.5**	**0.5**		**4.2**	**0.4**
Diesel oil [2]	2,267	2.3	0.3	2,186	2.2	0.2
Electricity (*GWh*)	25.5	2.2	0.2	23.4	2.0	0.2
6. Other (n.e.s)		**4.3**	**0.4**		**7.6**	**0.8**
TOTAL		**951.1**	**100.0**		**982.0**	**100.0**

[1] Includes transport for all sectors [2] Estimates

Table 12 - Stock of registered motor vehicles, Island of Mauritius, 2016 - 2017

Type of vehicle	2016	2017
Cars, Dual Purpose Vehicle, Double cab pick up	255,199	272,213
Auto / Motocycles	199,399	205,493
Heavy Motor Car and Bus	4,423	4,446
Van, lorry and truck	42,301	43,145
Other vehicles[1]	6,354	6,500
Total	**507,676**	**531,797**

[1] Includes tractor and dumper, prime mover, trailer, road roller and other

Table 13 - Mean maximum and mean minimum temperature, Island of Mauritius, 2017

Degree Celcius

Month	Maximum temperature			Minimum temperature			Monthly mean temperature
	Long Term Mean (1981-2010)	Monthly Mean	Difference from Long Term Mean	Long Term Mean (1981-2010)	Monthly Mean	Difference from Long Term Mean	
January	29.8	30.7	0.9	22.3	22.6	0.3	26.7
February	29.8	30.4	0.6	22.6	22.9	0.3	26.7
March	29.4	30.4	1.0	22.1	23.7	1.6	27.1
April	28.6	29.6	1.0	21.2	22.6	1.4	26.1
May	27.0	27.4	0.4	19.4	21.0	1.6	24.2
June	25.2	26.3	1.1	17.6	19.2	1.6	22.8
July	24.3	25.8	1.5	16.9	19.1	2.2	22.5
August	24.4	25.7	1.3	16.9	18.7	1.8	22.2
September	25.3	26.4	1.1	17.2	18.7	1.5	22.6
October	26.2	27.8	1.6	18.3	19.8	1.5	23.8
November	28.1	28.5	0.4	19.6	20.9	1.3	24.7
December	29.3	30.7	1.4	21.2	22.2	1.0	26.5
Annual mean temperature	**27.3**	**28.3**	**1.0**	**19.6**	**21.0**	**1.4**	**24.7**

Source: Mauritius Meteorological Services

Table 14 - Mean rainfall, Island of Mauritius, 2016 - 2017

Millimetres

Month	Long Term Mean (1981-2010)	2016		2017	
		Monthly Mean	% of Long Term Mean	Monthly Mean	% of Long Term Mean
January	263	185	70	146	56
February	348	442	127	332	95
March	263	153	58	264	100
April	212	245	116	272	128
May	148	127	86	367	248
June	107	133	124	152	142
July	125	179	144	160	128
August	106	130	123	145	137
September	96	49	51	56	58
October	77	50	65	69	90
November	78	64	82	105	135
December	180	138	77	72	40
Total for the year	**2,003**	**1,895**	**95**	**2,140**	**107**

Source: Mauritius Meteorological Services

Table 15 - Water balance, Island of Mauritius, 2016 - 2017

Mm^3

	2016	2017
Rainfall	**3,536**	**3,991**
Surface runoff	*2,122*	*2,395*
Evapotranspiration	*1,061*	*1,197*
Net recharge to groundwater	*353*	*399*

Source: Water Resources Unit, Ministry of Energy and Public Utilities.

Table 16 - Water Utilisation, Island of Mauritius, 2016 - 2017

Mm^3

Utilisation	2016					2017				
	Surface water		Ground water	Reuse of treated waste water	Total	Surface water		Ground water	Reuse of treated waste water	Total
	River-run offtakes	Storage (Reservoirs)				River-run offtakes	Storage (Reservoirs)			
Domestic, Industrial and Tourism (CWA network)	36 [1]	88	133	-	**257**	42 [1]	88	130	-	**260**
Agricultural	276	68 [2]	7	6	**357**	279	54 [2]	5	6	**344**
Hydropower	161 [3]	180 [4]	-	-	**341**	154 [3]	158 [4]	-	-	**312**
Industrial	3	2 [5]	7	-	**12**	3	2 [5]	7	-	**12**
Overall utilisation	**476**	**338**	**147**	**6**	**967**	**478**	**302**	**142**	**6**	**928**
Total water mobilisation	**444**	**277**	**147**	**-**	**868**	**446**	**252**	**142**	**-**	**840**

[1] 18 Mm^3 used also for Reduit hydropower station
[2] 24 Mm^3 used also for Tamarind Falls and Magenta hydropower stations and 12 Mm^3 for La Ferme hydropower station; [3] 14 Mm^3 used also twice for Le Val and Ferney hydropower stations; [4] 2 Mm^3 used also twice for Tamarind Falls and Magenta hydropower stations and 23 Mm^3 used also twice at Midlands and La Nicoliere

[1] 16 Mm^3 used also for Reduit hydropower station
[2] 15 Mm^3 used also for Tamarind Falls and Magenta hydropower stations and 8 Mm^3 for La Ferme hydropower station; [3] 16 Mm^3 used also twice for Le Val and Ferney hydropower stations; [4] 27 Mm^3 used also twice at Midlands and La Nicoliere

[5] Used by IPP (formerly accounted in agricultural purpose)

Source: Water Resources Unit, Ministry of Energy and Public Utilities.

Table 17 - Disposal of solid waste by type at Mare Chicose landfill site, 2016 - 2017

Tonnes

Waste material	2016	2017
Domestic	428,032	462,431
Construction	2,757	2,090
Other [1]	13,906	17,675
Total	**444,695**	**482,196**

Source: Solid Waste Management Division, Ministry of Social Security, National Solidarity, and Environment and Sustainable Development

[1] Includes mainly industrial waste

Table 18 - Number of complaints received at the Pollution Prevention and Control (PPC) Division by category, Island of Mauritius, 2016 - 2017

Category	2016	%	2017 [1]		%
Noise	98	14	133		17
Solid waste	49	7	99		13
Air pollution	91	13	126		17
Waste water	63	9	77		10
Odour	77	11	91		12
Bareland [2]	-	-	77		10
Other [3]	323	46	162		21
Total	**701**	**100**	**765**		**100**

[1] Figures for year 2017 also include number of complaints received at PPC Division through the Citizen Support Portal (Effective from May 2017).

[2] Complaints regarding barelands were recorded in Category "Others" in year 2016. As from 2017, a separate category "bareland" has been added to the list of categories.

[3] Includes backfilling, erosion, illegal construction, objections to projects, law and order, land conversion, land reclamations, landslides etc.

Source: Ministry of Social Security, National Solidarity, and Environment and Sustainable Development (Environment and Sustainable Development Division)

Table 19 - Number of Environmental Impact Assessment (EIA) licences granted by type of project, 2016 - 2017, Island of Mauritius

Project	EIA	
	2016	2017
Land parcelling (morcellement)	9	8
Coastal hotels and related works	1	7
Housing/Integrated Resort Scheme/Property Development Scheme/Smart City	5	7
Photovoltaic Farms	1	5
Stone crushing plants	1	-
Development in port area	-	1
Construction of road and highway	1	3
Other	5	8
Total	**23**	**39**

Source: Ministry of Social Security, National Solidarity, and Environment and Sustainable Development (Environment and Sustainable Development Division)

Table 20 - Number of Preliminary Environmental Report (PER) approvals granted by type of project, 2016 - 2017, Island of Mauritius

Project	PER	
	2016	2017
Land parcelling (morcellement)	2	-
Poultry rearing	7	5
Industrial development	3	8
Livestock rearing	-	1
Housing/Integrated Resort Scheme/Property Development Scheme/Smart City	2	2
Other	6	2
Total	**20**	**18**

Source: Ministry of Social Security, National Solidarity, and Environment and Sustainable Development (Environment and Sustainable Development Division)

Technical notes

Concepts and definitions

Environment

Environment: The totality of all the external conditions affecting the life, development and survival of an organism.

An *environmental indicator*: A parameter or a value derived from parameters that points to, provides information about and/or describes the state of the environment, and has a significance extending beyond that directly associated with any given parametric value.

Land use, Agriculture and Forestry

Land use: Land use reflects both the activities undertaken and the institutional arrangements put in place for a given area for the purposes of economic production, or the maintenance and restoration of environmental functions. Consequently, there are areas of land that are "not in use" by human activities.

Built-up areas: Built-up areas consist of land under houses, industrial zones, quarries or any other facilities, including their auxiliary spaces, deliberately installed so that human activities may be pursued.

Energy and Greenhouse gas

Greenhouse gases (GHG): These gases occur naturally and also result from human-induced activities (anthropogenic emissions from production and consumption) that contribute directly or indirectly to global warming. Some main GHG are Carbon Dioxide (CO_2), methane (CH_4) and Nitrous Oxide (N_2O). Other gases such as Carbon monoxide (CO), oxides of Nitrogen (NOx), non methane volatile organic compounds (NMVOC) and Sulphur dioxide (SO_2), contribute indirectly to global warming. GHG act much like a glass greenhouse, trapping heat in the lower levels of the atmosphere and reflecting the heat back to the earth's surface, causing it to heat up.

Carbon dioxide equivalent (CO_2-eq): It is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). The carbon dioxide equivalent of a gas is derived by multiplying the weight of the gas by its associated Global Warming Potential (GWP).

Global Warming Potential (GWP)

The Global Warming Potential (GWP) was adopted from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (SAR – 100 years" time horizon) as in the table below.

GHG	GWP
Carbon Dioxide CO_2	1
Methane CH_4	21
Nitrous Oxide N_2O	310
Hydrofluorocarbon 143-a	3800

Primary energy requirement: It is the sum of imported fuels and locally available fuels less re-exports of bunkers and aviation fuel to foreign aircraft after adjusting for stock changes.

Renewable energy: Renewable energy is captured from sources that replenish themselves. It includes solar (photovoltaic and thermal), hydroelectric, geothermal, tidal action, wave action, marine (non-tidal currents, temperature differences and salinity gradients), wind and biomass energy, all of which are naturally replenished, even though their flow may be limited.

Final energy consumption: Energy consumption by final user, i.e energy which is not being used for transformation into other forms of energy.

Water

Water balance: The water balance is based on long term records of annual average rainfall and indicates how freshwater resources are distributed.

Precipitation: Rain falling from the atmosphere and deposited on land or water surfaces.

Evapotranspiration: Combined loss of water by evaporation from the soil or surface water and transpiration from plants and animals.

Surface runoff: The flow of surface water from rainfall, which flows directly to streams, rivers and lakes. Runoff may cause soil erosion.

Groundwater recharge: Process by which water is added from outside to fresh water found beneath the earth surface.

Waste

Solid waste: Solid waste includes domestic garbage, industrial and commercial waste, sewage sludge, wastes resulting from agricultural and animal husbandry operations and other connected activities, demolition wastes and mining residues.

Landfill: Final placement of waste in or on the land in a controlled or uncontrolled way according to different sanitary, environmental protection and other safety requirements.

Environmental impact assessment

Environmental impact assessment (EIA): Analytical process that systematically examines the possible environmental consequences of the implementation of projects, programmes and policies.

Preliminary environmental report

Preliminary environmental report (PER): PER is a short form of EIA and this preliminary analysis is undertaken to identify the impacts associated with the proposed development and the means of mitigation.

Economy

Gross Domestic Product (GDP): GDP is the aggregate money value of all goods and services produced within a country out of economic activity during a specified period, usually a year, before provision for the consumption of fixed capital.

Energy intensity: Energy intensity provides a measure of the efficiency with which energy is being used in production or energy used (tonnes of oil equivalent) per Rs 100,000 GDP (at constant prices)

Abbreviations

Rs	Rupees
Rs mn	Rupees million
%	Percentage
000	Thousand
Mm^3	Million cubic metres
Gg	Gigagram(thousand tonnes)
toe	Tonne of oil equivalent
ktoe	Thousand tonnes of oil equivalent
GWh	Gigawatt hour
PER	Preliminary environmental report
EIA	Environmental impact assessment

Symbols

-	Nil or negligible
…	Not available

Conversion factor

1 square kilometre	= 100 hectares