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ENERGY STATISTICS 1990 - 1998

Introduction

Energy Statistics is a new series of data which is being released for the first time through this issue of the Economic and Social Indicators. Data series (1990 to 1998) presented in this report have been compiled with the collaboration of the Ministry of Public Utilities and the Central Electricity Board.

The energy data have been compiled according to the recommendations of the United Nations Manual, Series F No. 29 on Energy Statistics. For meaningful comparison and analysis, the quantities of each type of fuel have been expressed in a common accounting unit, namely, tonnes of oil equivalent (toe). Concepts and terminology as well as the energy conversion factors used are given on pages 5 and 6 respectively.

All data refer to the Republic of Mauritius unless stated otherwise. The tables on final energy consumption by sector have been compiled according to the classification used by the suppliers of data. For example, consumption of energy in the transport sector refers to consumption of fuel by all users, industries as well as private households.

2. The energy commodity balance

The energy commodity balance shows the relationships between total primary energy requirement, transformation and total final consumption. The energy commodity balance for the year 1998 is given at Table 1. Total primary energy requirement is obtained as the sum of the indigenous production (hydro, fuel wood and bagasse) and imports less re-exports and bunkering after stock adjustments. The transformation process is the conversion of primary energy into secondary energy, such as coal and fuel oil into electricity. Own use and losses during transformation are also recorded. Total final energy consumption is the total amount of energy required by end users as a final product. End-users are categorised into five sectors, namely manufacturing, transport, commercial and distributive trade, residential and agricultural.

2.1 Total primary energy requirement

The total primary energy requirement of the country is met from imported fuels (around 70%) and indigenous sources, the remaining 30% (Table 3). In 1998, the primary energy requirement amounted to some 1,014 ktoe, of which 661 ktoe were imported petroleum products and 42 ktoe was coal. Bagasse contributed 91 % of the indigenous production (310 ktoe) and the remaining were from hydroelectricity, fuel wood and wind energy. Of the 661 ktoe of imported petroleum products, 31.6 % was from fuel oil, 23.9 % from diesel oil, 14.5 % from gasolene, 14.1 % from aviation fuel and the remaining 15.9 % comprised of kerosene and LPG.

During the period 1990 - 1998, the primary energy requirement increased from 734 ktoe to 1,014 ktoe, representing an annual average growth rate of 4.1 %. The share of petroleum products in the primary energy requirements during the same period increased from 54.3 % (399 ktoe) to 65.2 % (661 ktoe).

2.1.1 Indigenous production

Local energy sources consist mainly of bagasse, the residue left over after extraction of sugar from sugarcane, hydroelectricity and to a lesser extent, fuel wood. The indigenous production for energy use in 1998 amounted to 310 ktoe. Bagasse represented 91.1 % followed by hydroelectricity, 7.4 % and the remaining 1.5 % was fuel wood. During the period 1990 - 1998, bagasse production varied between 227 ktoe and 283 ktoe and hydroelectricity production fluctuated between 16 and 30 ktoe whilst fuel wood as a source of energy has gone down consistently from 30 ktoe to less than 5 ktoe. (Table 3)

2.1.2 Imports of energy sources

Tables 4, 5 and 6 show data on imports of energy sources. Some 959 ktoe of petroleum products and coal were imported in 1998 compared to 598 ktoe in 1990 representing an average annual growth of 6.1 %. During the period under consideration, the C.I.F. value of imported energy sources increased from Rs 1,812.7 million to Rs 2,873.2 million.

2.1.3 Re-exports and bunkering

Of the 959 ktoe of imported energy sources, 218 ktoe were re-exported to bunkers and foreign aircraft (129 ktoe of diesel oil, 34 ktoe of fuel oil and 55 ktoe of aviation fuel) as shown in Table 7.

2.2 Electricity generation

In 1998, some 1380 GWh (304 ktoe) of electricity was generated. The Central Electricity Board (CEB) generated 81.4 % and private power producers, 18.6 %. Thermal energy represented 92.5 % and hydro, the remaining 7.5 %. The installed capacity increased from 297.1 MW in 1990 to 480.4 MW in 1998 whilst the effective capacity increased from 270.3 MW to 396.7 MW for the Island of Mauritius. The peak demand during the period under consideration increased from 131.1 MW to 248.9 MW (Tables 8 and 9).

Between 1990 and 1998, total electricity generation was doubled, increasing at an average annual rate of 9.4 % from 672 GWh to 1380 GWh. Output from thermal generation increased from 587 GWh in 1990 to 1276 GWh in 1998, representing an average annual growth of 10.2 % whilst that from hydro and wind generation has been uneven, varying between 75 and 135 GWh.

2.2.1 Fuel input for electricity generation

Tables 11 and 12 show the fuel used for electricity generation in physical and energy units. Fuel input increased from 159 ktoe in 1990 to 327 ktoe in 1998. There has been a considerable increase in the use of fuel oil, kerosene and bagasse. This can be explained by the increasing demand for electrical energy and the limited hydroelectric potential of the country. In fact, the installed capacities of the hydro plants has been constant at 60 MW for the past few years. Table 13 gives the percentage for each type of fuel input in electricity generation.

2.3 Final energy consumption

In 1998, some 959 ktoe of energy was consumed as final energy. The Manufacturing sector accounted for 40.2 %, followed by transport (32.2 %), residential (14.8 %), commercial and distributive trade (7.8 %) and agriculture (0.8 %) (Tables 14 and 15). The different types and amount of fuel consumed by each sector is given in Tables 16 and 17.

2.3.1 Manufacturing

In 1998, some 385 ktoe of energy was used for manufacturing process, bagasse contributed 208 ktoe, electricity, 87 ktoe, fuel oil, 41 ktoe, diesel oil, 31 ktoe and the remaining was from coal, LPG and fuel wood. During 1990 - 1998, consumption grew at an average rate of 2.1 % per annum. Fuel oil, diesel oil and electricity consumption was doubled. The use of fuel wood has considerably decreased whilst the demand for LPG has increased. Bagasse consumption has remained more or less at the same level. (Table 17)

2.3.2 Transport

As shown in Table 17, in 1998, some 309 ktoe of energy were used for transportation: 120 from diesel oil, 96, gasolene and 93, aviation fuel. Gasolene consumption increased from 64 ktoe in 1990 to 96 ktoe in 1998, and diesel oil rose from 77 ktoe to 120 ktoe. This can be explained by the increasing number of vehicles on our road networks. Aviation fuel used by our national airline fluctuated between 72 and 94 ktoe.

2.3.3 Commercial and Distributive Trade

Electricity is the main source of energy consumed by the Commercial and Distributive Trade sector. In 1998, the total energy consumption stood at 75 ktoe, of which, 70 ktoe was electrical energy. Between 1990 - 1998, the annual energy consumption for this sector increased from 31 ktoe (of which electricity, 28 ktoe) to 75 ktoe representing an average annual growth of 11.8 %. (Table 17)

2.3.4 Residential

Energy consumed by households amounted to some 142 ktoe in 1998. Electricity and LPG continued to be the main sources of energy. Of the 142 ktoe, 93 ktoe came from electricity, 36, LPG and the remaining 13, kerosene, fuel wood and charcoal. Compared to

the total of 99 ktoe in 1990, household energy consumption grew at an average rate of 4.6 % per annum. There has been a net decrease in the amount of fuel wood and charcoal used whilst LPG and electricity continued to grow. (Table 17)

2.3.5 Agriculture

Only electricity and diesel oil are used in this sector. In 1998, 6 ktoe of electricity was used for irrigation whilst 2 ktoe of diesel oil was used for derocking of land and preparation of soil prior to plantation.

3. Ratios

As shown in Table 18, the total primary energy requirement index moved from 100 in 1990 to 138 in 1998. During 1990 - 1998, import dependency varied between 59 % and 70 % and per capita primary energy requirement rose from 0.69 toe to 0.87 toe. Energy intensity defined as total primary energy requirement (toe) per 100,000 rupees of GDP (at constant 1990 rupees), varied between 1.97 and 2.22.

4. Number of electricity consumers and average unit price by category

In 1998, the total number of electricity consumers stood at 293,887 for the Island of Mauritius and 8,812 for Rodrigues (Table 19). For the Island of Mauritius, domestic category had the highest number of consumers, 261,971, followed by commercial, 24,914 and industrial, 6,751. These shares have remained almost at the same level between 1990 and 1998. Compared to the total in 1990 (225,224), the number of electricity consumers grew at an average rate of 3.8% per annum during the period under consideration.

Table 21 shows the average sales price of electricity in rupees per kWh by category for the Island of Mauritius. The average sales price varied between Rs. 1.71 and Rs. 2.20 during the period under consideration.

Central Statistical Office

Ministry of Economic Development, Productivity and Regional Development
Port Louis

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Concepts and Terminology

The energy data have been compiled according to the recommendations of the United Nations Manual, Series F No. 29 on Energy Statistics.

- **Energy**
Energy means the capacity for doing work or for producing heat. Producing heat is a common manifestation of "doing work" as are producing light and motive force.
- **Primary energy**
Primary energy designates energy from sources that involve only extraction or capture, with or without separation from contiguous material, cleaning or grading, before the energy embodied in that source can be converted into heat or mechanical work. Primary energy is not derived from any other form of energy. By convention, sources of energy that occur naturally such as coal, natural gas, fuel wood are termed primary energy.
- **Secondary energy**
Secondary energy designates energy from all sources of energy that results from transformation of primary sources.
- **Fuels**
The term fuel is used to describe those energy sources, whether primary or secondary, that must be subjected to combustion or fission in order to release for use the energy stored up inside them.
- **Re-export of bunkers and aviation fuel**
Bunkers relate to fuels sold to ships irrespective of their flags of ownership or registration. Re-exports include aviation fuel delivered to foreign aircraft. Aviation fuel delivered to aircraft owned by the national airline is included as final consumption in the transport sector.
- **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.
- **Primary energy input to hydro electricity.**
The primary energy input to hydro electricity is defined as the energy value of the electricity generated from hydro.

Energy conversion factors

The following energy conversion factors have been used to express the energy content for the different fuels in terms of a common accounting unit, tonnes of oil equivalent (toe)

	<u>Tonne</u>	<u>toe</u>
Gasolene	1	1.08
Diesel Oil	1	1.01
Dual Purpose Kerosene (DPK)	1	1.04
Fuel oil	1	0.96
Liquefied Petroleum Gas (LPG)	1	1.08
Coal	1	0.62
Bagasse	1	0.16
Fuel Wood	1	0.38
Charcoal	1	0.74
	<u>GWh</u>	<u>toe</u>
Electricity	1	220

1 toe = 41.84 gigajoule (net calorific value)

SYMBOLS

The following technical abbreviations have been used throughout the report.

toe	Tonne of oil equivalent
ktoe	Thousand tonnes of oil equivalent
LPG	Liquefied Petroleum Gas
MW	megawatt (1,000 kW)
kWh	kilowatt hour
GWh	gigawatt hour

ACRONYMS

CEB	Central Electricity Board
GDP	Gross Domestic Product

Table 1 - Energy commodity balance, 1998

Flow	Source	Tonne of oil equivalent (toe)											Total		
		Coal	Gasolene	Diesel	Aviation Fuel	Kerosene	Fuel Oil	LPG	Fuel Wood	Charcoal	Hydro+wind	Bagasse		Electricity	
Indigenous Production		-	-	-	-	-	-	4,560	-	22,915	282,719	-	-	-	310,194
Imports		53,533	93,847	285,564	158,400	56,293	263,160	48,250	-	-	-	-	-	-	959,048
Re-Exports and Bunkering		-	-	(128,589)	(55,273)	-	(33,909)	(734)	-	-	-	-	-	-	(218,505)
Stock change / Statistical error		(11,053)	1,833	1,157	(10,009)	5,221	(20,398)	(3,836)	-	-	-	-	-	-	(37,085)
Total Primary Energy Requirement		42,480	95,679	158,133	93,118	61,514	208,853	43,681	4,560	22,915	282,719	-	-	-	1,013,652
Electricity Generation		(27,922)	-	(5,252)	-	(51,663)	(167,784)	-	-	(22,915)	(74,364)	303,654	-	-	(46,246)
Other transformation		-	-	-	-	-	-	(760)	370	-	-	-	-	-	(390)
Own use		-	-	-	-	-	-	-	-	-	-	-	(8,286)	-	(8,286)
Total Final Energy Consumption		14,558	95,679	152,881	93,118	9,851	41,069	43,681	3,800	370	208,355	295,368	-	-	958,730
Manufacturing Sector		14,558	-	30,535	-	-	41,063	3,538	760	-	208,355	86,530	-	-	385,340
Transport Sector		-	95,679	120,123	93,118	-	-	-	-	-	-	-	-	-	308,921
Commercial and Distributive Trade Sector		-	-	-	-	-	-	4,368	-	222	-	70,233	-	-	74,822
Residential Sector		-	-	-	-	9,851	-	35,770	3,040	148	-	93,181	-	-	141,989
Agriculture		-	-	2,222	-	-	-	-	-	-	-	5,586	-	-	7,808
Other(n.e.s) and losses		-	-	-	-	-	6	5	-	-	-	39,838	-	-	39,850

Note: figures in brackets represent negative quantities

Table 2 - Primary energy requirement (Physical unit), 1990 - 1998

Energy source	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998
Imported										
Gasolene	tonne	59,199	61,453	67,848	72,308	79,595	83,958	87,387	87,671	88,592
Diesel Oil	tonne	92,390	98,660	107,305	117,030	124,410	126,320	136,030	145,515	156,567
Dual Purpose Kerosene	tonne	98,825	97,793	119,080	104,023	105,945	115,227	156,900	135,551	148,685
Kerosene	tonne	26,604	27,640	33,626	23,971	25,582	42,922	76,331	56,526	59,148
Aviation Fuel	tonne	72,221	70,153	85,454	80,052	80,363	72,305	80,569	79,025	89,537
Fuel Oil	tonne	119,343	132,338	135,005	157,487	178,943	177,089	182,600	202,176	217,555
LPG	tonne	22,547	25,900	29,300	32,925	33,305	34,302	36,560	39,145	40,445
Coal	tonne	56,300	59,975	60,790	62,450	62,600	63,086	40,284	45,672	68,516
Local										
Electricity (hydro + wind)	GWh	85	76	113	104	76	134	104	92	104
Bagasse	tonne	1,575,992	1,543,273	1,625,479	1,562,267	1,424,144	1,639,810	1,595,104	1,740,976	1,766,992
Fuel Wood *	tonne	77,700	47,958	32,768	31,806	20,608	17,800	15,200	12,500	12,000

* estimates

Table 3 - Primary energy requirement (Energy unit - ktoe), 1990 - 1998

Energy source	1990	1991	1992	1993	1994	1995	1996	1997	1998
Imported									
Gasolene	63.93	66.37	73.28	78.09	85.96	90.67	94.38	94.68	95.68
Diesel Oil	93.31	99.65	108.38	118.20	125.65	127.58	137.39	146.97	158.13
Dual Purpose Kerosene	102.78	101.70	123.84	108.18	110.18	119.84	163.18	140.97	154.63
Kerosene	27.67	28.75	34.97	24.93	26.61	44.64	79.38	58.79	61.51
Aviation Fuel	75.11	72.96	88.87	83.25	83.58	75.20	83.79	82.19	93.12
Fuel Oil	114.57	127.04	129.60	151.19	171.79	170.01	175.30	194.09	208.85
LPG	24.35	27.97	31.64	35.56	35.97	37.05	39.48	42.28	43.68
Sub total (Petroleum products)	398.95	422.74	466.75	491.22	529.55	545.15	609.72	618.99	660.98
Coal	34.91	37.18	37.69	38.72	38.81	39.11	24.98	28.32	42.48
Sub total (Imported)	433.85	459.92	504.44	529.94	568.37	584.26	634.70	647.31	703.46
Local									
Electricity (hydro + wind)	18.75	16.61	24.92	22.85	16.66	29.58	22.86	20.35	22.92
Bagasse	252.16	246.92	260.08	249.96	227.86	262.37	255.22	278.56	282.72
Fuel Wood *	29.53	18.22	12.45	12.09	7.83	6.76	5.78	4.75	4.56
Sub total (Local)	300.43	281.76	297.45	284.90	252.35	298.71	283.85	303.65	310.19
Total	734.29	741.68	801.88	814.84	820.72	882.97	918.55	950.96	1,013.65

* estimates

Table 4 - Imports of energy sources (Physical unit - Thousand tonne), 1990 - 1998

Thousand tonne

Energy source	1990	1991	1992	1993	1994	1995	1996	1997	1998
Gasolene	55.97	65.39	63.72	74.79	77.71	84.16	88.04	88.07	86.90
Diesel oil	153.93	153.87	165.97	180.04	210.42	226.24	221.99	255.96	282.74
Dual Purpose Kerosene	166.85	157.11	168.65	160.87	149.07	170.66	195.99	196.25	206.44
Kerosene	18.61	27.59	37.61	30.53	24.78	39.60	81.15	76.56	54.13
Aviation Fuel	148.23	129.52	131.04	130.34	124.29	131.06	114.84	119.69	152.31
Fuel oil	139.68	143.48	169.71	178.92	199.41	207.48	194.37	249.21	274.12
LPG	22.53	26.01	29.07	29.39	32.68	36.22	36.59	41.67	44.68
Coal	80.11	66.01	72.50	62.90	38.45	66.36	38.48	27.78	86.34

Table 5 - Imports of energy sources (Energy unit - ktoe), 1990 - 1998

ktoe

Energy source	1990	1991	1992	1993	1994	1995	1996	1997	1998
Gasolene	60.44	70.62	68.82	80.77	83.93	90.89	95.08	95.12	93.85
Diesel oil	155.47	155.41	167.63	181.84	212.52	228.50	224.20	258.52	285.56
Dual Purpose Kerosene	173.52	163.39	175.40	167.30	155.03	177.49	203.83	204.10	214.69
Kerosene	19.36	28.69	39.11	31.75	25.77	41.19	84.39	79.62	56.29
Aviation Fuel	154.16	134.70	136.28	135.56	129.27	136.30	119.44	124.48	158.40
Fuel oil	134.09	137.74	162.92	171.77	191.43	199.18	186.60	239.24	263.16
LPG	24.33	28.09	31.40	31.74	35.29	39.12	39.51	45.00	48.25
<i>Sub total (Petroleum products)</i>	<i>547.86</i>	<i>555.25</i>	<i>606.16</i>	<i>633.42</i>	<i>678.20</i>	<i>735.18</i>	<i>749.23</i>	<i>841.98</i>	<i>905.51</i>
Coal	49.67	40.93	44.95	39.00	23.84	41.14	23.86	17.22	53.53
Total Imports	597.52	596.17	651.11	672.42	702.04	776.32	773.08	859.20	959.05

Fig. 1 - Imports of energy sources (ktoe), 1990 - 1998

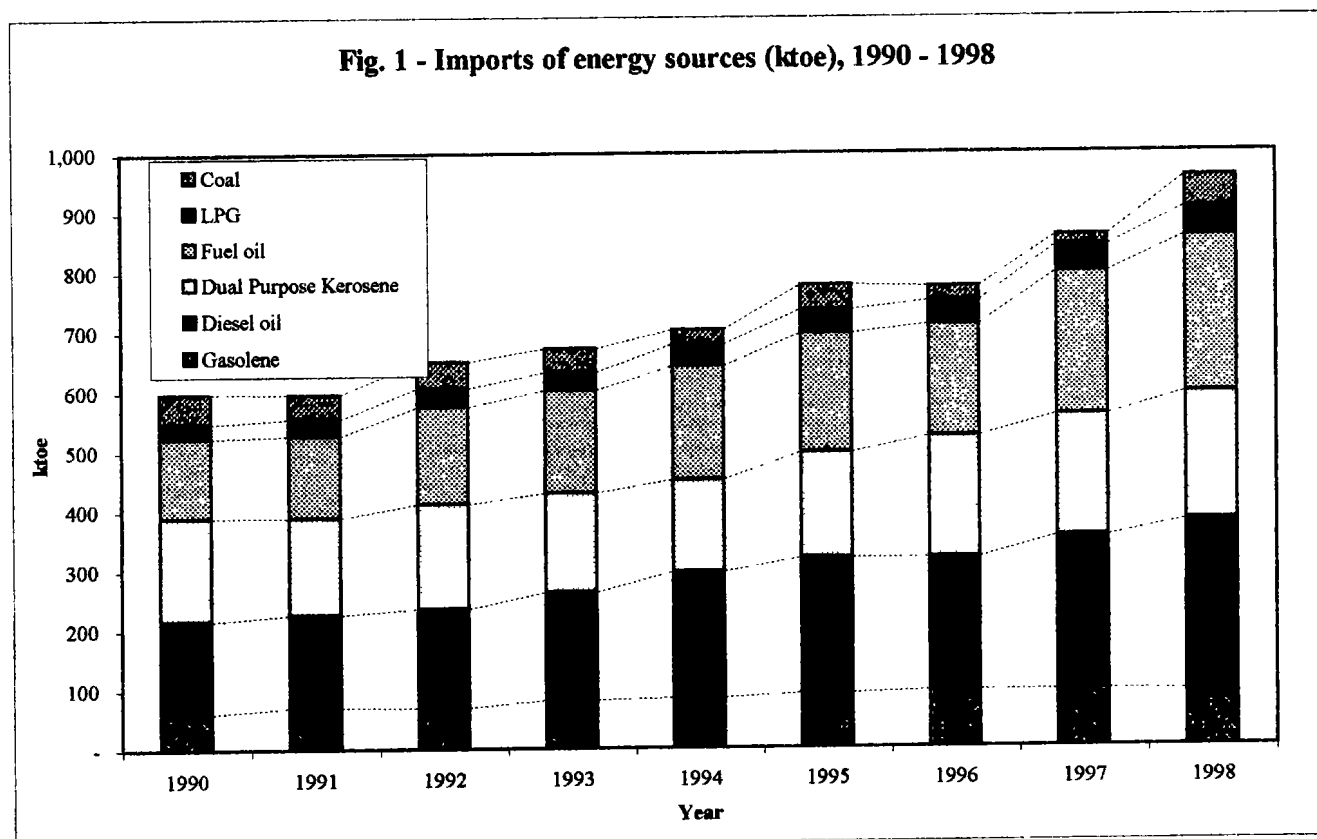


Table 6 - Imports of energy sources (C.I.F. value - Rs million), 1990 - 1998

Energy source	1990	1991	1992	1993	1994	1995	1996	1997	1998
Gasolene	237.7	264.4	227.0	260.3	43.6	277.1	381.0	410.6	356.3
Diesel oil	504.2	558.9	492.5	564.4	589.6	660.4	913.2	1,003.9	808.3
Dual Purpose Kerosene	661.3	605.7	547.7	559.8	474.8	568.2	903.9	840.6	700.5
Kerosene	80.4	115.7	124.2	109.4	86.9	133.8	386.3	338.4	186.9
Aviation Fuel	580.9	490.0	423.5	450.5	387.9	434.4	517.6	502.2	513.6
Fuel oil	252.7	255.8	255.9	271.2	338.2	385.4	449.3	587.3	568.4
LPG	100.3	145.9	165.3	178.4	195.9	228.5	262.4	338.7	323.4
Coal	56.6	52.3	57.0	34.1	35.3	65.2	41.9	31.0	116.2
Total	1,812.7	1,883.0	1,745.4	1,868.3	1,677.4	2,184.8	2,951.8	3,212.1	2,873.2

Table 7 - Re-exports of energy sources to foreign aircraft and bunkers, 1990 - 1998

	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998
Aviation fuel to foreign aircraft	tonne	66,443	64,389	47,998	45,538	45,346	42,758	44,572	54,004	53,147
Diesel oil	tonne	58,630	53,385	58,953	42,602	85,749	85,054	102,149	104,817	127,316
Fuel oil	tonne	20,335	19,376	27,200	18,062	25,533	19,967	26,252	25,708	35,322
Aviation fuel to foreign aircraft	ktoe	69.10	66.96	49.92	47.36	47.16	44.47	46.35	56.16	55.27
Diesel oil	ktoe	59.22	53.92	59.54	43.03	86.61	85.90	103.17	105.87	128.59
Fuel oil	ktoe	19.52	18.60	26.11	17.34	24.51	19.17	25.20	24.68	33.91
Total	ktoe	147.84	139.48	135.57	107.73	158.28	149.54	174.73	186.71	217.77

Fig. 2 - Re-exports of energy sources (ktoe) to foreign aircraft and bunkers, 1990 - 1998

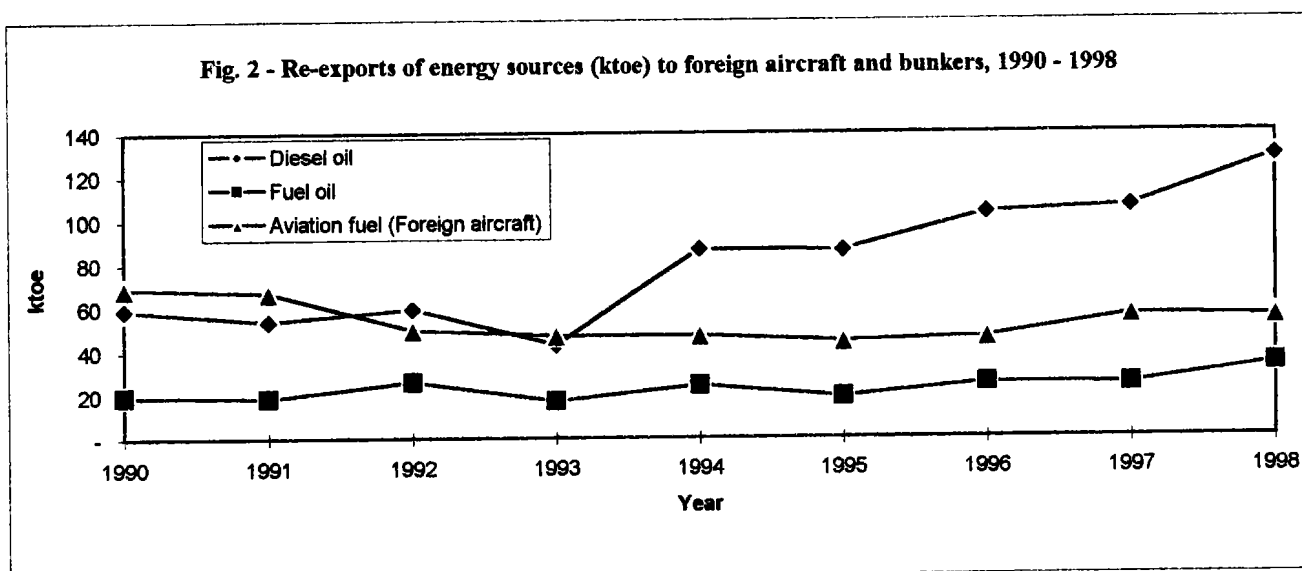


Table 8 - Evolution of plant capacities, peak demand, electricity generation and consumption, 1990 - 1998

Year	Installed capacity ¹ (MW)	Effective capacity ¹ (MW)	Peak Demand ¹ (MW)	Electricity generated (GWh)			Consumption (GWh)	
				Hydro	Wind	Thermal		Total
1990	297.1	270.3	131.1	84.91	0.33	587.30	672.53	564.14
1991	320.6	294.1	147.1	75.46	0.02	668.13	743.62	630.02
1992	331.7	283.9	155.7	113.06	0.17	703.48	816.72	694.41
1993	339.2	307.8	169.6	103.28	0.17	774.79	878.24	750.46
1994	339.2	307.8	187.2	75.47	0.21	879.26	954.94	818.64
1995	364.6	331.9	200.5	134.42	0.04	924.89	1059.36	913.85
1996	364.6	331.9	218.7	103.82	0.10	1060.37	1164.29	995.96
1997	401.7	370.0	238.1	92.44	0.05	1174.36	1266.85	1087.35
1998	480.4	396.7	248.9	104.16	0.00	1276.07	1380.23	1192.75

Source: Central Electricity Board

¹ Island of Mauritius only

Table 9 - Electricity production by source of energy, 1990 - 1998

	GWh								
Source of energy	1990	1991	1992	1993	1994	1995	1996	1997	1998
Island of Mauritius									
Primary energy	84.91	75.46	113.06	103.28	75.47	134.42	103.82	92.44	104.16
Hydro	84.91	75.46	113.06	103.28	75.47	134.42	103.82	92.44	104.16
Secondary energy	582.15	661.73	695.60	765.84	869.54	912.96	1,047.16	1,159.31	1,260.62
Gas turbine (kerosene)	36.01	43.79	69.29	39.60	47.60	105.84	219.03	154.21	161.93
Diesel & Fuel oil	448.74	494.34	497.88	614.77	699.34	682.09	699.30	857.10	841.96
Coal*	44.90	53.50	43.10	40.50	46.00	40.90	9.84	23.38	62.39
Bagasse*	52.50	70.09	85.32	70.97	76.60	84.12	119.00	124.61	194.34
Sub total	667.06	737.19	808.66	869.11	945.01	1,047.38	1,150.98	1,251.75	1,364.78
Rodrigues									
Primary energy									
Wind	0.33	0.02	0.17	0.17	0.21	0.04	0.10	0.05	-
Secondary energy									
Diesel & Fuel oil	5.15	6.41	7.88	8.95	9.72	11.94	13.21	15.06	15.45
Sub total	5.47	6.43	8.06	9.12	9.93	11.98	13.31	15.10	15.45
Total	672.53	743.62	816.72	878.24	954.94	1,059.36	1,164.29	1,266.85	1,380.23

* Electricity purchased by C.E.B.

Table 10 - Electricity production ¹ by source of energy as a percentage, 1990 - 1998

Source of energy	1990	1991	1992	1993	1994	1995	1996	1997	1998
Island of Mauritius									
Primary energy	12.63	10.15	13.84	11.76	7.90	12.69	8.92	7.30	7.55
Hydro	12.63	10.15	13.84	11.76	7.90	12.69	8.92	7.30	7.55
Secondary energy	86.56	88.99	85.17	87.20	91.06	86.18	89.94	91.51	91.33
Gas turbine (kerosene)	5.35	5.89	8.48	4.51	4.98	9.99	18.81	12.17	11.73
Diesel & Fuel oil	66.72	66.48	60.96	70.00	73.23	64.39	60.06	67.66	61.00
Coal*	6.68	7.19	5.28	4.61	4.82	3.86	0.84	1.85	4.52
Bagasse*	7.81	9.43	10.45	8.08	8.02	7.94	10.22	9.84	14.08
Sub total	99.19	99.14	99.01	98.96	98.96	98.87	98.86	98.81	98.88
Rodrigues									
Primary energy									
Wind	0.05	0.00	0.02	0.02	0.02	0.00	0.01	0.00	-
Secondary energy									
Diesel & Fuel oil	0.77	0.86	0.97	1.02	1.02	1.13	1.13	1.19	1.12
Sub total	0.81	0.86	0.99	1.04	1.04	1.13	1.14	1.19	1.12
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

* Electricity purchased by C.E.B.

Table 11 - Fuel input for electricity production (tonne), 1990 - 1998

	Tonne								
Fuel	1990	1991	1992	1993	1994	1995	1996	1997	1998
Island of Mauritius									
Fuel oil	97,979	108,651	108,096	128,125	147,129	142,886	145,398	160,798	172,870
Diesel oil	1,877	2,049	2,609	2,768	2,844	2,599	2,202	2,299	4,040
Kerosene	11,132	13,558	21,330	12,272	14,789	32,332	65,827	46,993	49,676
Coal	36,289	38,468	33,780	30,853	31,949	30,289	6,557	18,430	45,035
Bagasse*	173,571	179,020	191,070	172,700	184,232	197,389	287,210	300,726	464,773
Rodrigues									
Diesel oil *	1,160	1,440	1,775	2,010	2,190	2,685	2,230	1,130	1,160
Fuel oil *	-	-	-	-	-	-	611	1,860	1,905

* Estimates

Table 12 - Fuel input for electricity production (ktoe), 1990 - 1998

	ktoe								
Fuel	1990	1991	1992	1993	1994	1995	1996	1997	1998
Island of Mauritius									
Fuel oil	94.06	104.30	103.77	123.00	141.24	137.17	139.58	154.37	165.95
Diesel oil	1.90	2.07	2.64	2.80	2.87	2.62	2.22	2.32	4.08
Kerosene	11.58	14.10	22.18	12.76	15.38	33.63	68.46	48.87	51.66
Coal	22.50	23.85	20.94	19.13	19.81	18.78	4.07	11.43	27.92
Bagasse *	27.77	28.64	30.57	27.63	29.48	31.58	45.95	48.12	74.36
Sub total	157.80	172.97	180.11	185.32	208.78	223.78	260.28	265.10	323.98
Rodrigues									
Diesel oil *	1.17	1.45	1.79	2.03	2.21	2.71	2.25	1.14	1.17
Fuel oil *	-	-	-	-	-	-	0.59	1.79	1.83
Sub total	1.17	1.45	1.79	2.03	2.21	2.71	2.84	2.93	3.00
Total	158.98	174.42	181.90	187.35	210.99	226.49	263.12	268.03	326.98

* Estimates

Table 13 - Fuel input for electricity production (ktoe) as a percentage, 1990 - 1998

Fuel	1990	1991	1992	1993	1994	1995	1996	1997	1998
Island of Mauritius									
Fuel oil	59.17	59.80	57.05	65.65	66.94	60.56	53.05	57.59	50.75
Diesel oil	1.19	1.19	1.45	1.49	1.36	1.16	0.85	0.87	1.25
Kerosene	7.28	8.08	12.20	6.81	7.29	14.85	26.02	18.23	15.80
Coal	14.15	13.67	11.51	10.21	9.39	8.29	1.54	4.26	8.54
Bagasse *	17.47	16.42	16.81	14.75	13.97	13.94	17.46	17.95	22.74
Sub total	99.26	99.17	99.01	98.92	98.95	98.80	98.92	98.91	99.08
Rodrigues									
Diesel oil *	0.74	0.83	0.99	1.08	1.05	1.20	0.86	0.43	0.36
Fuel oil *	-	-	-	-	-	-	0.22	0.67	0.56
Sub total	0.74	0.83	0.99	1.08	1.05	1.20	1.08	1.09	0.92
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

* Estimates

Table 14 - Final energy consumption by sector (Energy unit - ktoe), 1990 - 1998

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998
1. Manufacturing	325.44	324.72	345.65	348.59	331.81	373.46	367.53	396.45	385.34
1.1 excluding bagasse	101.05	106.44	116.14	126.26	133.43	142.67	158.27	166.01	176.99
1.2 bagasse	224.39	218.28	229.51	222.33	198.39	230.79	209.26	230.44	208.36
2. Transport	215.75	220.29	249.33	256.38	269.73	268.77	285.46	291.37	308.92
3. Residential	99.19	97.79	99.08	109.24	110.27	119.15	125.80	133.24	141.99
4. Commercial and Distributive Trade	30.70	36.10	40.61	44.96	49.78	54.51	59.63	67.33	74.82
5. Agriculture	4.42	4.65	5.07	4.94	5.91	5.73	6.77	6.64	7.81
6. Other (n.e.s) and losses	22.56	24.26	28.64	26.47	28.08	30.61	35.92	37.82	39.85
TOTAL	698.07	707.82	768.37	790.57	795.58	852.22	881.12	932.84	958.73

ktoe

Table 15 - Percentage share of final energy consumption (ktoe) by sector, 1990 - 1998

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998
1. Manufacturing	46.6	45.9	45.0	44.1	41.7	43.8	41.7	42.5	40.2
1.1 excluding bagasse	14.5	15.0	15.1	16.0	16.8	16.7	18.0	17.8	18.5
1.2 bagasse	32.1	30.8	29.9	28.1	24.9	27.1	23.7	24.7	21.7
2. Transport	30.9	31.1	32.4	32.4	33.9	31.5	32.4	31.2	32.2
3. Residential	14.2	13.8	12.9	13.8	13.9	14.0	14.3	14.3	14.8
4. Commercial and Distributive Trade	4.4	5.1	5.3	5.7	6.3	6.4	6.8	7.2	7.8
5. Agriculture	0.6	0.7	0.7	0.6	0.7	0.7	0.8	0.7	0.8
6. Other (n.e.s) and losses	3.2	3.4	3.7	3.3	3.5	3.6	4.1	4.1	4.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Fig. 3 - Final energy consumption by sector, 1990 - 1998

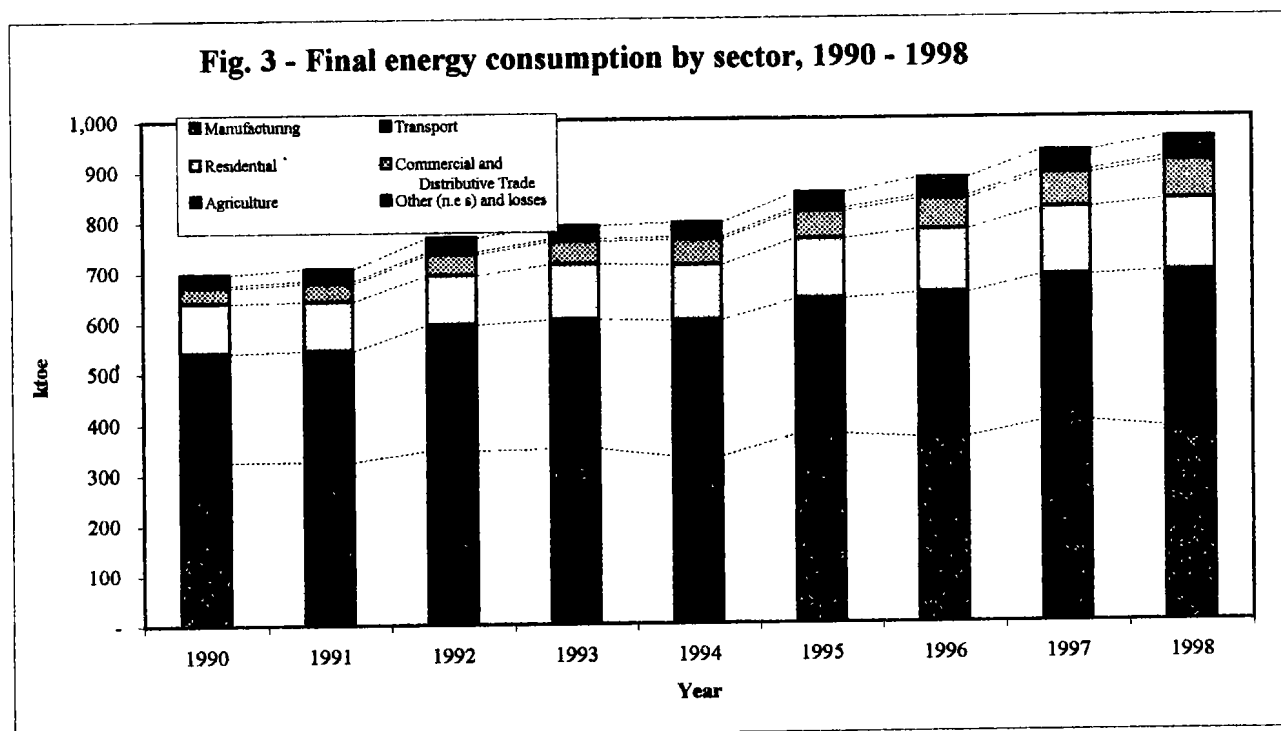


Table 16 - Final energy consumption by sector and type of fuel (Physical unit), 1990 - 1998

Sector	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998
1. Manufacturing										
1.1 excluding bagasse										
Fuel oil	tonne	21,364	23,687	26,909	29,362	31,814	34,203	36,590	39,518	42,774
Diesel oil	tonne	12,000	13,500	15,000	16,459	18,373	17,255	23,367	26,622	30,233
LPG	tonne	500	1,300	1,800	2,200	2,470	2,550	2,761	3,179	3,276
Coal	tonne	20,000	21,500	27,000	31,593	30,647	32,797	33,727	27,242	23,481
Fuel wood ¹	tonne	22,995	11,267	7,070	7,142	4,382	3,900	3,400	2,500	2,000
Electricity ²	GWh	212.46	232.06	244.49	258.07	277.25	308.37	338.00	363.23	393.32
1.2 bagasse	tonne	1,402,421	1,364,253	1,434,409	1,389,567	1,239,912	1,442,421	1,307,894	1,440,250	1,302,219
2. Transport										
Gasolene	tonne	59,199	61,453	67,848	72,308	79,595	83,958	87,387	87,671	88,592
Diesel oil	tonne	75,950	80,165	86,319	94,092	99,202	101,876	106,224	113,361	118,934
Aviation fuel (local aircraft)	tonne	72,221	70,153	85,454	80,052	80,363	72,305	80,569	79,025	89,537
3. Residential										
Kerosene	tonne	15,472	14,082	12,296	11,699	10,793	10,590	10,504	9,533	9,472
LPG	tonne	20,547	22,500	25,000	27,458	27,550	28,600	30,437	32,313	33,124
Fuel wood ¹	tonne	42,705	26,291	16,498	16,664	10,226	9,100	8,600	8,000	8,000
Charcoal ¹	tonne	1,250	1,200	1,100	1,000	500	400	300	200	200
Electricity ²	GWh	198.90	218.05	237.30	274.29	295.63	334.05	356.90	387.44	423.55
4. Commercial and Distributive Trade										
LPG	tonne	1,500	2,100	2,500	3,264	3,281	3,150	3,356	3,650	4,044
Charcoal ¹	tonne	1,750	1,400	1,200	1,000	1,000	800	500	300	300
Electricity ²	GWh	126.31	149.05	168.28	184.96	206.78	229.62	252.90	287.12	319.24
5. Agriculture										
Diesel oil ¹	tonne	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200
Electricity ²	GWh	13.67	14.25	15.69	14.63	18.59	17.31	21.60	20.53	25.39

¹ Estimates² Island of Mauritius only

Table 17 - Final energy consumption by sector and type of fuel (Energy unit - ktoe), 1990 - 1998

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998
1. Manufacturing	325.44	324.72	345.65	348.59	331.81	373.46	367.53	396.45	385.34
1.1 excluding bagasse	101.05	106.44	116.14	126.26	133.43	142.67	158.27	166.01	176.99
Fuel oil	20.51	22.74	25.83	28.19	30.54	32.83	35.13	37.94	41.06
Diesel oil	12.12	13.64	15.15	16.62	18.56	17.43	23.60	26.89	30.54
LPG	0.54	1.40	1.94	2.38	2.67	2.75	2.98	3.43	3.54
Coal	12.40	13.33	16.74	19.59	19.00	20.33	20.91	16.89	14.56
Fuel wood ¹	8.74	4.28	2.69	2.71	1.67	1.48	1.29	0.95	0.76
Electricity ²	46.74	51.05	53.79	56.78	61.00	67.84	74.36	79.91	86.53
1.2 bagasse	224.39	218.28	229.51	222.33	198.39	230.79	209.26	230.44	208.36
2. Transport	215.75	220.29	249.33	256.38	269.73	268.77	285.46	291.37	308.92
Gasolene	63.93	66.37	73.28	78.09	85.96	90.67	94.38	94.68	95.68
Diesel oil	76.71	80.97	87.18	95.03	100.19	102.89	107.29	114.49	120.12
Aviation Fuel	75.11	72.96	88.87	83.25	83.58	75.20	83.79	82.19	93.12
3. Residential	99.19	97.79	99.08	109.24	110.27	119.15	125.80	133.24	141.99
Kerosene	16.09	14.65	12.79	12.17	11.22	11.01	10.92	9.91	9.85
LPG	22.19	24.30	27.00	29.65	29.75	30.89	32.87	34.90	35.77
Fuel wood ¹	16.23	9.99	6.27	6.33	3.89	3.46	3.27	3.04	3.04
Charcoal ¹	0.93	0.89	0.81	0.74	0.37	0.30	0.22	0.15	0.15
Electricity ²	43.76	47.97	52.21	60.34	65.04	73.49	78.52	85.24	93.18
4. Commercial and Distributive Trade	30.70	36.10	40.61	44.96	49.78	54.51	59.63	67.33	74.82
LPG	1.62	2.27	2.70	3.53	3.54	3.40	3.62	3.94	4.37
Charcoal ¹	1.30	1.04	0.89	0.74	0.74	0.59	0.37	0.22	0.22
Electricity ²	27.79	32.79	37.02	40.69	45.49	50.52	55.64	63.17	70.23
5. Agriculture	4.42	4.65	5.07	4.94	5.91	5.73	6.77	6.64	7.81
Diesel oil ¹	1.41	1.52	1.62	1.72	1.82	1.92	2.02	2.12	2.22
Electricity ²	3.01	3.14	3.45	3.22	4.09	3.81	4.75	4.52	5.59
6. Other (n.e.s) and losses	22.56	24.26	28.64	26.47	28.08	30.61	35.92	37.82	39.85
TOTAL	698.07	707.82	768.37	790.57	795.58	852.22	881.12	932.84	958.73

¹ Estimates

² Island of Mauritius only

Table 18 - Ratios, 1990 - 1998

	unit	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total primary energy requirement	ktoe	734.29	741.68	801.88	814.84	820.72	882.97	918.55	950.96	1,013.65
Total primary energy requirement index (1990 = 100)		100.00	101.01	109.21	110.97	111.77	120.25	125.09	129.51	138.05
Primary energy requirement (imported)	ktoe	433.85	459.92	504.44	529.94	568.37	584.26	634.70	647.31	703.46
Import dependency	%	59.08	62.01	62.91	65.04	69.25	66.17	69.10	68.07	69.40
GDP (at 1990 factor cost)	Rs. Mn	33,018	34,471	36,780	38,619	40,627	42,903	45,820	48,248	50,757
GDP Index (1990 = 100)	toe per	100.00	104.40	111.39	116.96	123.05	129.94	138.77	146.13	153.73
Energy Intensity	Rs100,000 GDP	2.22	2.15	2.18	2.11	2.02	2.06	2.00	1.97	2.00
Mid-year population	thousand	1,059	1,070	1,084	1,097	1,113	1,122	1,134	1,148	1,160
Per capita primary energy requirement	toe	0.69	0.69	0.74	0.74	0.74	0.79	0.81	0.83	0.87

Table 19 - Number of electricity consumers, 1990 - 1998

Category of consumer	Number								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Domestic	196,312	203,741	211,655	220,309	225,450	237,209	245,769	253,518	261,971
Commercial	17,603	18,510	19,400	20,503	21,356	22,924	23,631	24,216	24,914
Industrial	4,958	5,252	5,550	5,803	6,038	6,404	6,539	6,596	6,751
<i>General</i>	4,835	5,122	5,361	5,592	5,807	6,163	6,269	6,308	6,342
<i>Irrigation</i>	123	130	189	211	231	241	270	288	409
Other	194	196	197	200	222	230	239	246	251
Total (I. of Mauritius)	219,067	227,699	236,802	246,815	253,066	266,767	276,178	284,576	293,887
Total (Rodrigues)	6,157	6,476	7,097	7,393	7,692	7,905	8,279	8,605	8,812

Table 20 - Electricity sales, 1990 - 1997

Sector	GWh								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Domestic	198.9	220.4	249.3	274.3	295.6	334.1	356.9	387.4	423.5
Commercial	126.4	149.4	168.3	185.0	206.8	229.6	252.9	287.1	319.2
Industrial	226.2	246.4	260.2	272.7	295.8	325.7	359.6	383.8	418.7
<i>General</i>	212.5	232.2	244.5	258.1	277.2	308.4	338.0	363.2	393.3
<i>Irrigation</i>	13.7	14.2	15.7	14.6	18.6	17.3	21.6	20.5	25.4
Other	7.6	8.5	10.3	10.9	11.8	14.6	15.6	16.8	17.3
Total (I. of Mauritius)	559.1	624.7	688.1	742.9	810.0	904.0	985.0	1,075.1	1,178.8
Total (Rodrigues)	5.0	5.3	6.3	7.6	8.6	9.9	11.0	12.2	13.9

Table 21 - Average sales price ¹ of electricity (Rs/kWh) by category, 1990 - 1998

Category of consumer	1990	1991	1992	1993	1994	1995	1996	1997	1998
Domestic	1.61	1.87	1.98	2.16	2.17	2.19	2.18	2.19	2.21
Commercial	1.94	2.31	2.43	2.63	2.62	2.63	2.61	2.65	2.51
Industrial:									
General	1.64	1.80	1.85	1.91	1.90	1.87	1.83	1.87	1.75
Irrigation	1.05	1.30	1.32	1.36	1.35	1.36	1.35	1.40	1.69
Other	2.84	3.06	3.14	3.03	3.00	3.00	3.48	3.02	2.58
Average	1.71	1.95	2.05	2.19	2.19	2.18	2.17	2.20	2.18

¹ Island of Mauritius only