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Environmental Accounts Statistics-2024



NATIONAL STATISTICS BUREAU
ROYAL GOVERNMENT OF BHUTAN
THIMPHU: BHUTAN

ENVIRONMENTAL ACCOUNTS STATISTICS-2024

National Statistics Bureau

Royal Government of Bhutan

Thimphu: Bhutan

Foreword

The National Statistics Bureau (NSB) is pleased to publish the Annual Environmental Accounts Statistics (AEAS)-2024. The AEAS presents green economy indicators, other environmental accounts such as electricity, fossil fuel (diesel, petrol, liquid petroleum gas or LPG and kerosene), fuel wood and briquette. It also includes timber and mineral accounts covering from 2010 to 2023. Further, the publication presents additional chapters on waste and experimental energy accounts. This is the 8th publication by the Economic and Environment Statistics Division of the National Statistics Bureau.

The AEAS is compiled using the framework of the System of Environmental – Economic Accounts (SEEA). We hope that the information in the report will be helpful in policy formulation, evaluation and monitoring of economic development plans and programs.

The National Statistics Bureau would like to sincerely thank and acknowledge all agencies, both government and private sector, for their continued support and cooperation in the publication of this report. We would appreciate any feedback or comments in improving this report for the larger benefit of data users.

National Statistics Bureau

Thimphu

Abbreviations & Acronyms

DGM: Department of Geology & Mines

GDP: Gross Domestic Product

GNH: Gross National Happiness

LPG: Liquefied Petroleum Gas

ATF: Aviation Turbine Fuel

MoEA: Ministry of Economic Affairs

NSB: National Statistics Bureau

SEEA: System of Environmental- Economic Accounting

UNSD: United Nations Statistics Division

ISIC: International Standard Industrial Classification of all Economic Activities

SEEA-CF: System of Environmental-Economic Accounting 2012-Central Framework

UNESCAP: United Nations Economic and Social Commission for Asia and the Pacific

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Chapter 1: Introduction

1.1 Objective

The Annual Environmental Accounts Statistics (AEAS) is inspired by Article 5 of the Constitution of the Kingdom of Bhutan, which mandates the conservation of natural resources, prevention of ecosystem degradation, and maintenance of at least 60% forest cover at all times. Environmental conservation is a cornerstone of Gross National Happiness (GNH) and is woven into every policy and development plan in the country.

Various legal and policy documents, such as The Forest and Nature Conservation Act (1995), the National Forest Policy (2010), The National Environment Protection Act (2007), and the Five-Year Development Plans, emphasize the sustainable utilization and management of natural resources. Effective management of these environmental assets is essential for the sustainable use of our limited resources, ensuring that the environment continues to provide vital inputs to both the economy and society.

Against this backdrop, the AEAS aims to provide environmental information relevant to key economic sectors in Bhutan. The data and statistics presented in this report are intended to serve as a foundational resource for planners, policymakers, researchers, and other stakeholders, facilitating informed decision-making and policy development related to sustainable development and the green economy.

As part of our ongoing efforts, we are actively compiling and reporting on the state of the environment and resource use to inform decision-makers and shape long-term policies concerning environmental assets. The NSB is developing various environmental accounts in a phased manner, with plans to publish a comprehensive set of environmental economic accounts as data and capacity issues are addressed over time.

1.2. Method and Scope

The AEAS adopts the System of Environmental-Economic Accounting (SEEA) Central Framework in preparing and developing environmental economic accounts. The focus of the analysis is more on the physical quantities and values of environmental assets, and the changes in these assets over a period of time. The physical and monetary (value) changes record additions to the stock of environmental assets and new discoveries and reductions in the stock through extraction and natural losses.

The report, among others, focuses mainly on accounting electricity and fossil fuel (diesel, petrol, LPG gas, briquette & kerosene). Other accounts such as asset accounts for major mineral production by type viz. coal, dolomite, limestone, gypsum, marble, quartzite, stone and iron ore are included. In addition, fuelwood consumption accounts are also developed in our efforts to develop a full set of energy accounts. The waste account and experimental energy accounts are presented as these are growing concerns for the government. As a part of additional asset accounts, timber resource accounts, aggregate stone, briquette, sand and stone chips supplied by the Natural Resource Development Co-operation and Department of Forest & Park Services are also compiled. The measurement scope of environmental assets is not limited to these accounts, but as and when the data become available, the NSB shall extend its efforts to other natural resource accounts to help in policy planning.

1.3 Data Revision

As in any other statistical organization, the published figures are based on the revision of the recent available information. As the publication draws information from annual reports of companies and corporations, it may undergo revision in subsequent publications.

1.4 Reporting

The Environmental Accounts Statistics is reported on a calendar year basis.

Chapter 2: Green Economy Indicators

2.1 Overview

Green Economy or green growth is in the limelight of the global development agenda. There is a growing demand for green economy indicators both from policy makers and decision makers. Green growth economy indicators are a pathway to sustainable development (World Bank, 2012). Thus, the NSB compiles relevant core indicators that will inform the policy makers and development partners on the state of our environment

Table 1: Green Economic Indicators

Indicators	Web or table reference	Ministry or Statistical Office	Methodological sheet	Unit	2019	2020	2021	2022	2023
Economic, demographic and social context for sustainable development									
Demographic patterns and trends									
Total population, both sexes combined		NSB	Available	Nos	741,672.00	748,931.00	756,129.00	763,249.00	770,276.00
Population growth rate		NSB	Available	%	1.30	1.30	1.30	1.30	1.30
Percentage of urban population	Population	NSB	Available	%	37.80	37.80	37.80	40.90	40.90
Growth rate of urban population	Housing Census Report	NSB	Available	%	n.a	n.a	n.a	n.a	n.a
Population (age 65 and above), total, both sexes	(PHCB)/SYB	NSB	Available	Nos	45,822.00	47,433.00	49,085.00	50,715.00	52,308.00
Population density, inhabitant per km2		NSB	Available	per km2	19.32	19.51	19.69	19.88	20.06
Life expectancy at birth, both sexes combined		NSB	Available	Years	69.10	69.10	69.10	71.30	71.33
Economic growth, structure of economy and productivity									
Real GDP, index				%	5.76	(10.22)	4.42	5.21	4.88
[base year as determined by the reporting country]		NSB	Available	in Mil USD	2,735.67	2,457.36	2,767.98	2,898.27	3,019.13
GDP per capita(in USD)		NSB	Available	USD	3,688.52	3,281.16	3,660.72	3,833.03	3,919.55
Net Disposable Income [or Net National Income]	National Accounts Statistics Report	NSB	Available	Mil Nu	173,807.68	165,528.70	185,749.19	206,159.72	242,888.19
Share of agriculture in GDP		NSB	Available	%	12.93	15.70	15.79	14.67	14.96
Share of industry/manufacturing in GDP		NSB	Available	%	33.09	99.99	31.62	31.82	29.55
Share of services in GDP		NSB	Available	%	53.97	52.51	52.58	53.50	55.49
Proportion of cellular subscribers to total population		MoIC	Available	%	98.32	99.49	102.89	101.75	102.30
Proportion of internet users of total population	Annual Report of MoIC	MoIC	Available	%	110.37	98.10	99.40	98.47	97.57
Labour									
Labour force participation			Available	%	66.40	67.80	69.10	63.10	65.00
Proportion of employment by relevant economic activities	2019 Labour Force Survey report, NSB	NSB	Available	Primary	159,032.00	157,015.00	158,511.00	125,160.00	158,707.04
				Secondary	43,550.00	42,438.00	45,560.00	39,414.00	49,723.83
				Tertiary	108,478.00	115,109.00	118,052.00	123,210.00	156,293.82
				Σ (in Nos)	311,059.00	314,562.00	322,123.00	287,784.00	364,724.69
Unemployment rate		NSB	Available	%	2.70	5.00	4.80	5.90	3.50
Labour productivity [GDP per person employed]		NSB	Available	In Mil USD	n.a	n.a	n.a	n.a	n.a
Poverty, income distribution and other social issues									
Income inequality: GINI coefficient		NSB	Available		0.38	0.38	0.38	0.29	0.29
Percentage of population living in poverty and extreme poverty [measured by National/Regional poverty lines]	Poverty Analysis Report	NSB	Available	%	8.20	8.20	8.20	12.40	12.40
Subsistence Poverty rate		NSB	Available	%	1.50	1.50	1.50	0.40	0.40
Educational attainment: at least completed lower secondary (ISCED 2 or higher), population 25+ years (%)	Annual Education Statistics	MoE	Available	%	71.40	71.40	71.40	71.40	71.40
Total net enrolment ratio in primary education [both sexes]		MoE	Available	%	91.20	92.94	93.51	93.30	93.30
Total public expenditure on education as a percentage of GDP	Annual National Accounts Statistics	NSB	Available	%	5.32	7.39	6.12	6.35	4.59
Total expenditure on health per capita (PPP)	Annual National Accounts Statistics	NSB	Available	Nu	6,547.53	8,592.79	8,608.74	8,528.43	10,681.07
Inflation and commodity prices									
Consumer price index		NSB	Available	%	2.73	5.63	7.35	5.64	4.23
Export price of the major commodity groups [as determined by the reporting country]		DGPC	Available	Nu/unit as of Dec, 2017	THP/KHP=2.12 CHP=2.55	THP/KHP=2.12 CHP=2.55	THP/KHP=2.12 CHP=2.55	THP/KHP=2.23 CHP=2.55	THP/KHP=2.23 CHP=2.56
International trade and tourism									
Relative importance of trade: (exports + imports)/GDP	Annual National Accounts Statistics	NSB	Available	Mil Nu	0.76	0.73	0.74	0.76	0.83
Terms of trade index [base year as determined by the reporting country]		DRC, MoF	Not available		n.a	n.a	n.a	n.a	n.a
International tourist arrivals in % to population	Annual Report	TCB	Available	%	9.73	0.85	n.a	1.29	13.38
International tourism, receipts	Annual Report	RMA	Available	In Mil USD	88.63	9.49	n.a	n.a	n.a
The environmental and Resource Productivity									
Carbon emissions									
Carbon dioxide emissions (CO2), thousand metric tons of CO2		NEC	Available	Metric tons	1,559,560.00	1,559,560.00	1,559,560.00	1,559,560.00	1,559,560.00
Carbon dioxide emissions (CO2), metric tons of CO2 per capita	UNFCC Report	NEC	Available	Tons/Capita	2.10	2.08	2.06	2.04	2.02
Carbon dioxide emissions (CO2), kg CO2 per \$1 GDP (PPP)		NEC	Available	Kg/GDP	n.a	n.a	n.a	n.a	n.a
Energy									
Energy Intensity [KToE per Million Nu.]	EAS Report	NSB	Available	ktoe/Nu	0.00	0.00	0.007	0.002	0.04
Energy consumption per capita [total or final]	energy per capita consumption	NSB	Available	Ktoe/person	0.00	0.00	0.00	0.00	0.00
Energy productivity [Million Nu. Per KToE]	NAS Report	NSB	Available	Million Nu/ktoe	335.84	396.31	382.54	643.72	1,020.08
Renewable energy supply [total energy supply, TES]		NSB	Available	GWh	8,875.75	11,390.37	10,823.40	11,001.37	10,536.44
Renewable electricity [% total electricity generation]	EAS Report	NSB	Available	%	99.98	99.98	99.98	97.75	99.99
Fuelwood, production [thousand cubic metres]	Annual Report	NRDCL/DoFPS	Available	1000 m3	37.54	86.95	84.31	99.31	84.61

Indicators	Web or table reference	Ministry or Statistical Office	Methodological sheet	Unit	2019	2020	2021	2022	2023
Renewable resources									
Forest area		MoENR	Available	ha	2,730,889.00	2,730,889.00	2,717,161.64	2,717,161.64	2,676,545.42
Proportion of land area covered by forest [percentage]		MoENR	Available	%	71.00	71.00	71.00	71.00	69.71
Natural forest as % of total forest area	Forestry Facts & Figure of FRMD, MoAF	MoENR	May be available		99.22	99.99	99.99	99.99	99.99
Planted forest as % of total forest area		MoENR	May be available	ha	0.01	0.01	0.01	0.01	0.01
Deforestation [Ha and % of forest area per year]		MoENR	May be available		0.07	n.a	n.a	n.a	n.a
Fish Produced, total [marine and freshwater] (KG)	DoL	MoAF, DoL/NSB	Available	Kgs	223,623.00	181,645.00	192,970.00	36,523.00	43,260.00
Non-renewable resources									
Mineral resources: stocks or reserves of selected minerals, including fossil fuels and critical raw materials, as determined by the reporting country	Types	DGM, MoEA	May be available						
Extraction rates of selected minerals, including fossil fuels and critical raw materials, as determined by the reporting country	Dolomite	Available	Dolomite	MT	3,027,517.70	1,232,106.76	9,627,045.97	2,767,394.66	2,937,929.79
	Limestone		Lime stone	MT	1,546,302.14	182,900.88	4,308,402.69	964,329.54	1,231,941.09
	Gypsum		Gypsum	MT	490,595.50	282,589.50	1,562,440.99	400,182.65	1,098,564.61
	Coal		Coal	MT	184,784.48	274.07	533,409.29	158,603.26	113,950.48
	Marble		Marble	MT	94,318.33	-	379,786.43	26,433.33	159,119.24
	Quartzite		Quartzite	MT	141,065.90	8,807.63	471,088.61	153,219.13	239,833.43
	Talc		Talc	MT	1,374.75	972.09	5,682.04	739.72	357.55
	Stone		Stone	MT	n.a	n.a	n.a	1,841,817.42	2,364,153.02
	Granite		Granite	MT	3,391.30	-	35,893.99	2,406.58	629.64
	Phyllite		Phyllite	MT	78,246.35	-	193,345.64	43,931.32	13,906.81
	Calc Tufa		Calc Tufa	MT	22,079.14	-	-	-	-
	Iron Ore		Iron Ore	MT	36,864.20	-	107,681.57	3,491.58	14,017.66
Clay	Clay	MT	n.a	n.a	n.a	n.a	n.a		
Proportion of agricultural area to total land area					2.46	2.46	2.46	2.46	
Area equipped for irrigation as % of agricultural area	RNR statistics	MoAF	Available	%	83.36	n.a	n.a	n.a	n.a
Arable land, % total land area		MoAF	Available	%	2.93	2.93	2.93	2.93	2.93
Pasture and temporary meadows, % total land area		MoAF	Available		0.06	n.a	n.a	n.a	n.a
Land area affected by degradation, by type of degradation, as % of total land area		MoAF	Available	%	0.54	0.54	0.54	0.54	0.54
Proportion of organic agricultural area in total agricultural area	RNR statistics	MoAF	May be available		n.a	n.a	n.a	n.a	n.a
Pesticides used on crop areas [kg / ha]		MoAF	Available	kg/hect	n.a	n.a	n.a	n.a	n.a
Chemical fertilizers used, kilogram per hectare of crop land		MoAF	Available	kg/hect	n.a	n.a	n.a	n.a	n.a
Natural fertilizer use, kilogram per hectare of crop land		MoAF	Available		n.a	n.a	n.a	n.a	n.a
Biodiversity and ecosystems									
Number of known flora and fauna species by status category		NBC, MoAF	Available	Nos	< 5,600 Vascular plants	< 5,600 Vascular plants	n.a	< 5,600 Vascular plants	< 5,600 Vascular plants
	280 lichens				280 lichens	n.a	287 lichens	287 lichens	
	129 Mammals				200 Mammals	n.a	129 Mammals	129 Mammals	
	748 birds				747 birds	n.a	736 birds	736 birds	
Number of endemic flora and fauna species by class (mammals, reptiles, etc)		MoAF/NBC	Available	Nos	145 endemic plants	145 endemic plants	n.a	n.a	n.a
	27 globally threatened mammal				27 globally threatened mammal	n.a	26 globally threatened mammal	26 globally threatened mammal	
	47-Globally threatened birds				31-Globally threatened birds	n.a	30-Globally threatened birds	30-Globally threatened birds	
% of threatened flora and fauna species by class (mammals, reptiles, etc.)		MoAF	Available	%					
Proportion of terrestrial protected areas to total surface area, %	MoAF		Available	%	51.44	43.48	43.48	43.48	51.44%
Footprints									
Ecological footprint	GNHC	GNHC	Available	Hec/capita	1.80	1.80	1.80	1.80	1.80

Indicators	Web or table reference	Ministry or Statistical Office	Methodological sheet	Unit	2019	2020	2021	2022	2023
The environmental dimension of quality of life									
Environmental health and risks									
Concentration of particulate matter (PM10) in urban air [main cities]	UNFCC Report	NEC	Available	Microgram/m ³	40.28	40.28	40.28	40.28	40.28
Environmental services and amenities									
Proportion of total population using an improved drinking water source	BLSS Report	NSB	Available	%	99.60	99.60	99.60	99.93	99.67
Proportion of urban population using an improved drinking water source		MoH	Available	%	99.60	99.60	99.60	99.93	99.97
Proportion of rural population using an improved drinking water source		MoH	Available	%	98.00	98.00	98.00	99.93	99.48
Proportion of total population using an improved sanitation facility		MoH	Available	%	74.80	74.80	74.80	99.10	99.30
Proportion of urban population using an improved sanitation facility		MoH	Available	%	84.72	84.72	84.72	99.80	99.60
Proportion of rural population using an improved sanitation facility		MoH	Available	%	69.00	69.00	69.00	98.70	99.10
Municipal waste collected [total]		MoWHS	Available	Tons	62,838.40	62,838.40	62,838.40	62,838.40	62,831.50
Municipal waste collected [per capita]		MoWHS	Available	Tons per capita per day	0.22	0.22	0.22	0.22	0.21
Policy responses and economic opportunities									
Regulations and management									
Annual government environment protection expenditure [as % of government expenditure and/ or as % of GDP]	Public Expenditure Review Report	DPA, MoF	Available	%	2.60	2.60	2.60	2.60	2.60
Participation in multilateral environmental agreements [list and number of MEAs]		NEC	May be available	Nos	15.00	15.00	15.00	15.00	15.00
Number of regulated pollutants by media [water, air, soil, etc]	Environmental Standards - 2010 (NEC)	NEC	Available	Water = 5	Water = 5	Water = 5	Water = 5	Water = 5	Water = 5
				Industrial effluent = 32	Industrial effluent = 32	Industrial effluent = 32	Industrial effluent = 32	Industrial effluent = 32	Industrial effluent = 32
				Sewerage effluent = 3	Sewerage effluent = 3	Sewerage effluent = 3	Sewerage effluent = 3	Sewerage effluent = 3	Sewerage effluent = 3
				Ambient air = 5	Ambient air = 5	Ambient air = 5	Ambient air = 5	Ambient air = 5	Ambient air = 5
				Industrial emission = 4	Industrial emission = 4	Sewerage effluent = 3	Sewerage effluent = 3	Sewerage effluent = 3	Sewerage effluent = 3
				Workplace emission = 5	Workplace emission = 5	Workplace emission = 5	Workplace emission = 5	Workplace emission = 5	Workplace emission = 5
				Vehicle emission = 2	Vehicle emission = 2	Vehicle emission = 2	Vehicle emission = 2	Vehicle emission = 3	Vehicle emission = 4
Noise level = 3	Noise level = 3	Noise level = 3	Noise level = 3	Noise level = 3	Noise level = 3				
Green taxes (number and/or annual revenue)		AFS, MoF	Available	Mil Nu	1,025.52	812.46	593.79	992.86	906.781
International financial flows									
Official Development Assistance, total	AFS	DPA, MoF	Available	Mil Nu	10,516.48	16,425.75	14,882.29	13,583.51	13,583.51

Chapter 3: Electricity Account

3.1 Overview

In Bhutan, the electricity sector is one of the key drivers of economic growth, contributing 11.61 percent to GDP in 2023. Hydropower is the primary energy resource in the country. Despite heavy reliance on hydroelectricity, Bhutan imports a significant amount of fossil fuels, particularly for the transport sector. The dependence on fossil fuels is expected to persist until electric vehicles become more affordable.

3.2 Hydro-electricity: Supply & Consumption

The total supply of electricity increased to 11,157.60 GWh in 2023 from 11,001.37 GWh in 2022, representing an increase of 1.42 percent. Of the total electricity supply, 94.43 percent was generated domestically, while imports accounted for 5.57 percent. In monetary terms, the value of the electricity supply decreased from Nu. 27,827.90 million in 2022 to Nu. 26,415.25 million in 2023, a decline of 5.08 percent.

Industrial consumption of electricity increased by 77.53 percent, while household consumption decreased by 32.33 percent. On average, industrial consumption accounted for 93.83 percent of total domestic consumption, while the household consumption accounted for the remaining 6.17 percent.

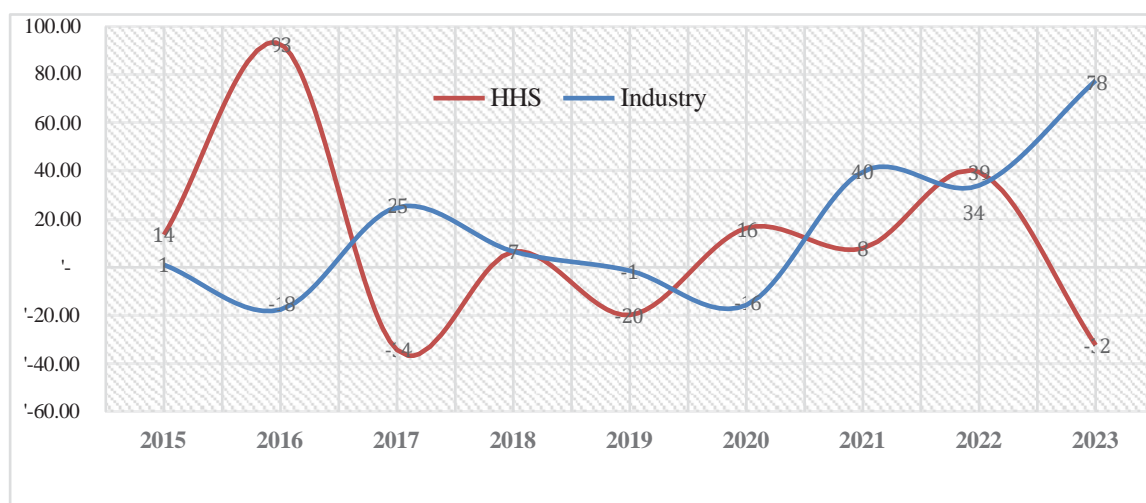


Figure 3.1 Consumption growth of electricity

Among the economic sectors, the manufacturing sector recorded the highest electricity consumption at 64.03 percent, followed by construction at 9.20 percent, community, social, and personal services at 6.47 percent, mining and quarrying at 5.36 percent, transport, storage, and communication at 5.51 percent, and trade at 4.24 percent. The remaining sectors consumed less than 5.19 percent.

Of the total electricity supply, 46.10 percent was exported, 52.84 percent was consumed domestically, and approximately 1.06 percent was attributed to transmission losses. Overall, domestic electricity consumption increased by 61.36 percent in 2023 compared to 2022.

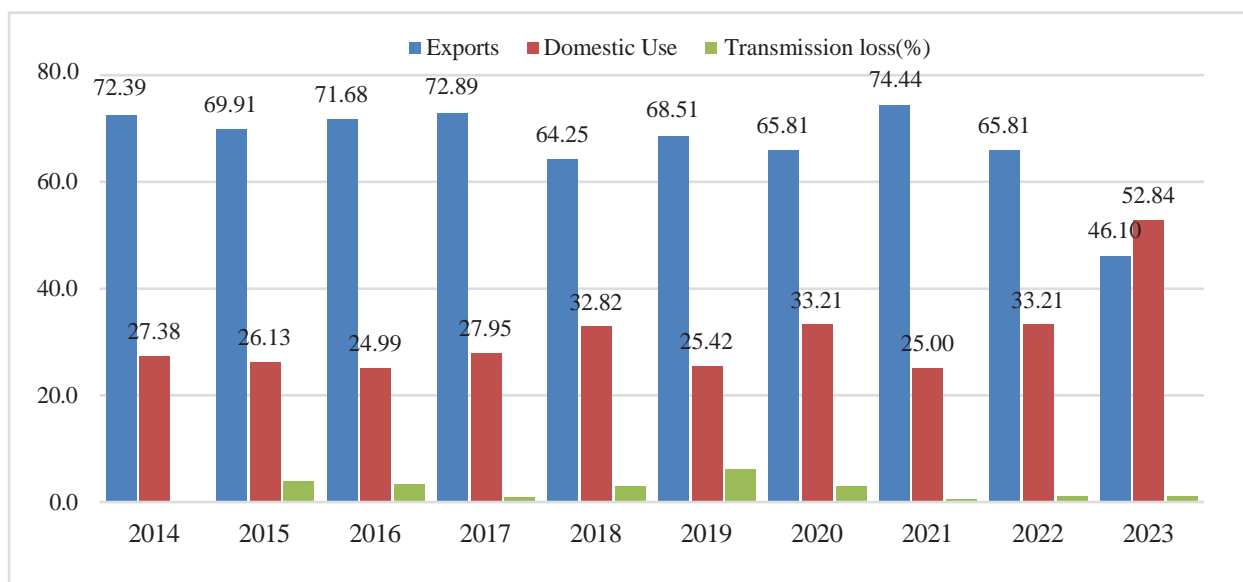


Figure 3.2 Share of Export, Domestic use and Transmission Loss

3.3 Electricity Trade

Overall electricity production in the country decreased by 2.03 percent in 2023 compared to 2022. Although Bhutan remains a net exporter of electricity, the country imports electricity during the lean season. In 2023, electricity exports declined by 28.95 percent, while imports surged by 151.50 percent

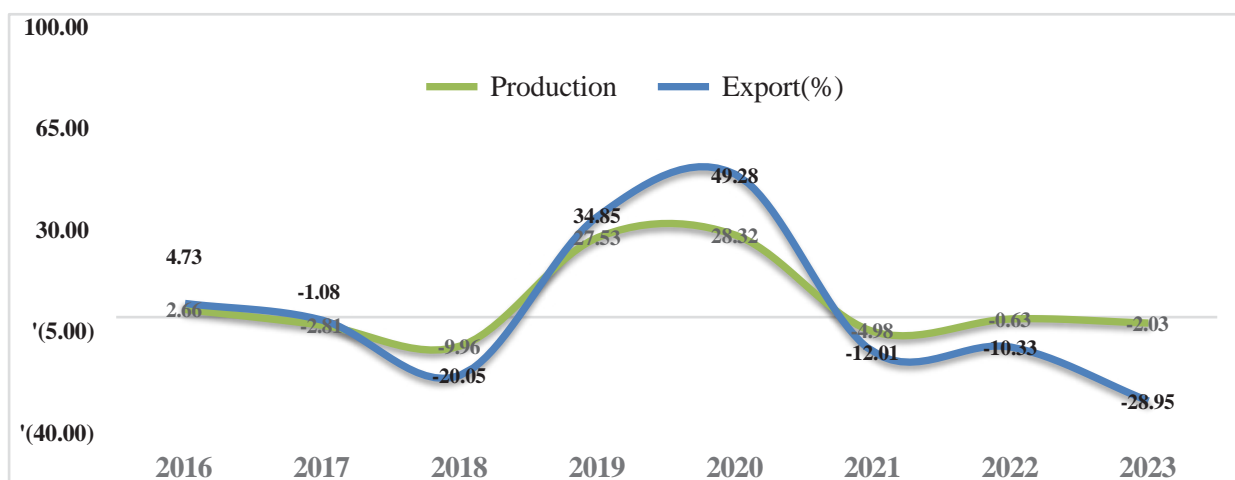


Figure 3.3 Growth in production and export, (in %)

Chapter -4: Fuel Account

4.1 Fossil Fuel: Supply & Consumption of Diesel & Petrol

Bhutan lacks natural petroleum or natural gas reserves, therefore, fossil fuels such as diesel, petrol, and LPG are imported entirely from India for domestic consumption. In 2023, Bhutan imported 210,147.20 KL of oil, the majority of which was used as fuel for automobiles. Petrol imports increased by 52.08 percent, and diesel imports grew by 43.38 percent during the year. Figure 4.1 illustrates the volume and growth trends of diesel and petrol imports for the period from 2012 to 2023.

In terms of volume, the total supply of petrol increased from 36,696.73 KL to 55,806.92 KL, and the supply of diesel increased from 107,643.121 KL to 154,340.28 KL in the year 2023.

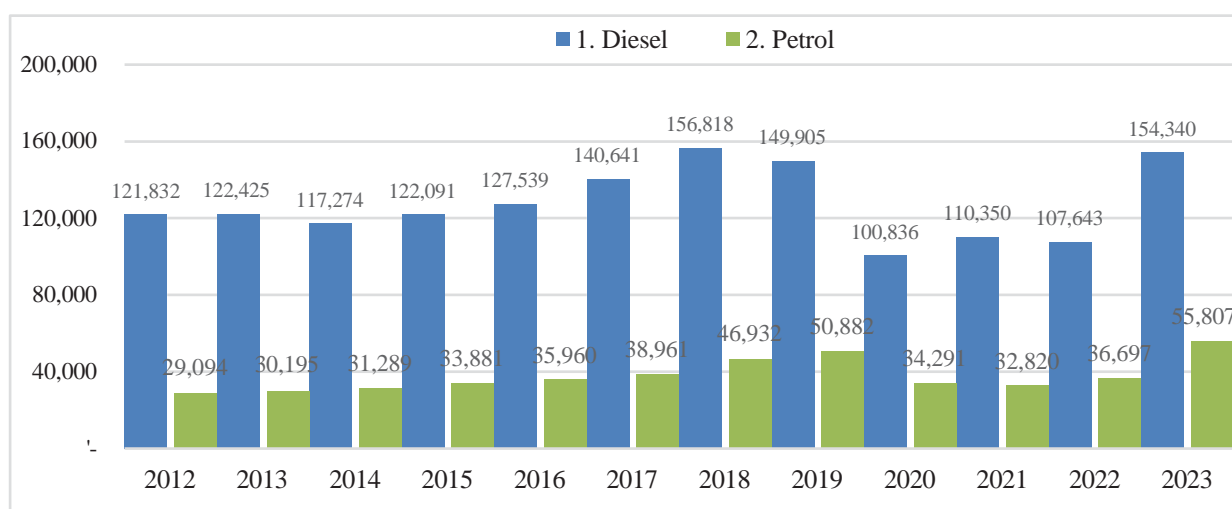


Figure 4.1: Fuel Imports and growth trends

In terms of consumption, the service sector accounted for the largest share of fuel use at 35.96 percent, followed by the household sector at 24.20 percent, the industrial sector at 20.19 percent, and the agriculture, livestock, and forestry sector at 12.16 percent. Detailed data can be found in Appendix Table 8 (Supply and Use Table for Fuel).

4.2 Re-export of Fossil Fuel

The term 're-export' refers to the portion of total petrol and diesel imports consumed by Indian vehicles operating on Bhutanese roads. This includes vehicles transporting goods to and from Bhutan, Indian tourist vehicles, and those refueling in border towns such as Samdrup Jongkhar, Gelephu, Phuntsholing, Gomtu, and Samtse.

In 2023, the re-export of fuel increased by 49.42 percent, rising from 10,538.93 KL in 2022 to 15,746.99 KL. Specifically, petrol re-exports grew by 52.08 percent, increasing from 7,316.30 KL in 2022 to 11,126.24 KL in 2023. Meanwhile, diesel re-exports rose by 43.38 percent, from 3,222.63 KL to 4,620.65 KL.

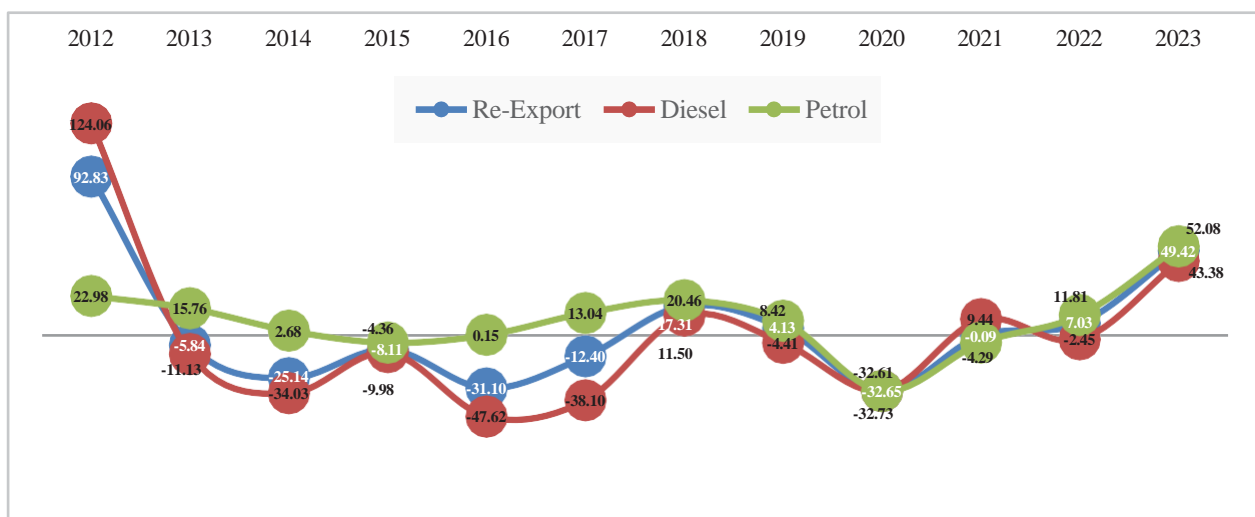


Figure 4.2: The growth of re-export of fuel

4.3. Kerosene: Supply & Consumption

The import of kerosene decreased significantly from 1,144.10 KL in 2022 to 601.54 KL in 2023, representing a decline of 47.42 percent. Kerosene is primarily used by households for heating and cooking. In 2023, all imported kerosene was utilized by households.

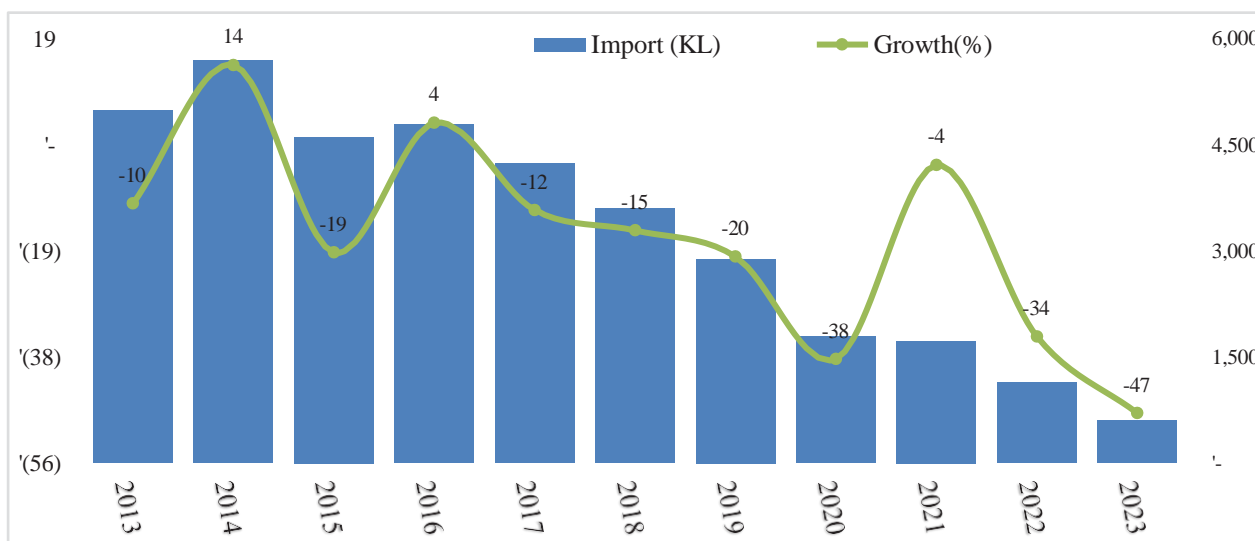


Figure 4.3: Import of kerosene and growth trend

4.4. LPG: Supply & Consumption

In Bhutan, LPG is primarily used by households for cooking. The import of LPG from India saw a significant growth until 2019. However, beginning in 2020, LPG imports began to decline. In 2023, imports decreased further to 8,193.10 MT, reflecting a decline of 1.66 percent compared to 2022.

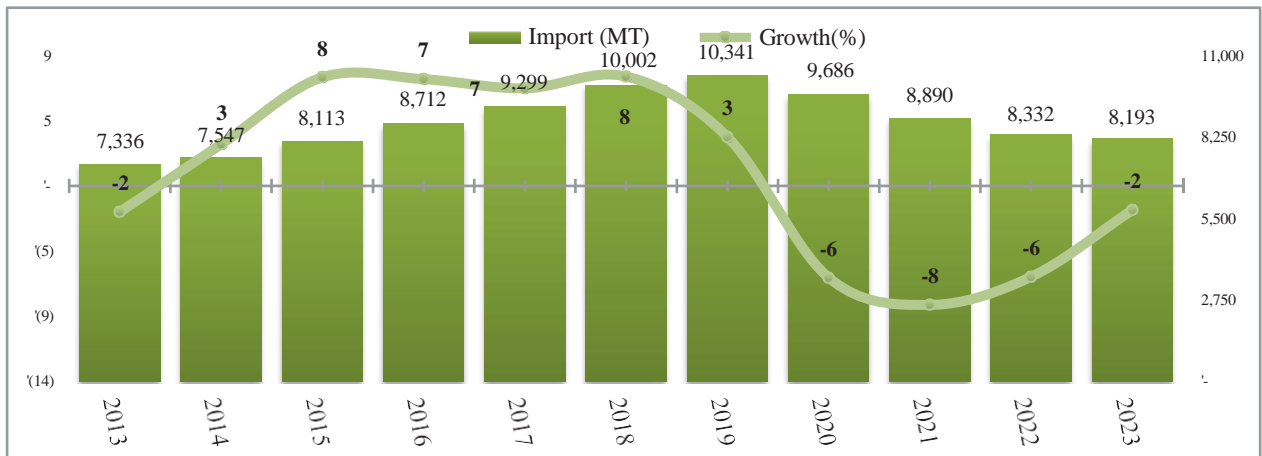


Figure 4.4 LPG Import and Growth (%) trend

4.5. Fuelwood: Supply & Consumption

Fuelwood is a common energy source for rural households in Bhutan. The Natural Resource Development Corporation Ltd. supplies fuelwood to urban households, while the Department of Forest and Park Services under the Ministry of Energy & Natural Resources issues permits for rural households to collect fuelwood. This report includes only the fuelwood supplied by NRDCL and DoFPS, MoENR, based on the permits issued, and does not account for fuelwood collected by households without a permit.

In 2023, a total of 122,566.90 cubic meters of fuelwood were supplied. Of this total, the Natural Resource Development Corporation Ltd. (NRDCL) supplied 44,102.01 cubic meters, constituting 35.98 percent, primarily to urban households and institutions. The remaining 78,464.89 cubic meters (64.02 percent) were supplied by the Department of Forest and Park Services under the Ministry of Energy & Natural Resources (DoFPS, MoENR), mainly to rural households.

Fuelwood consumption is broadly categorized into household by urban, rural, and industrial use based on the distribution records from NRDCL and MoENR. In 2023, household consumption accounted for 53.48 percent, while industries consumed approximately 46.52 percent.

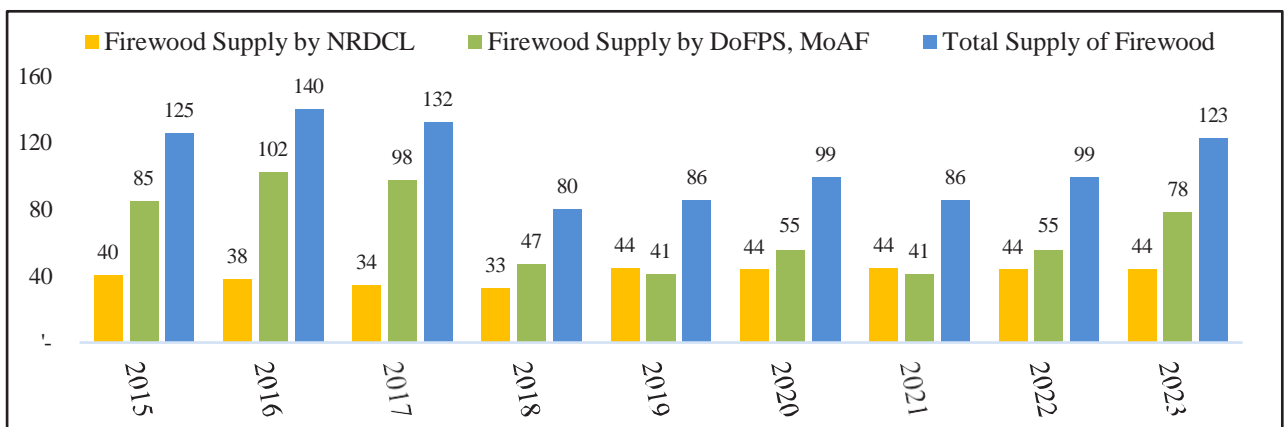


Figure 4.5 Fuelwood Supply

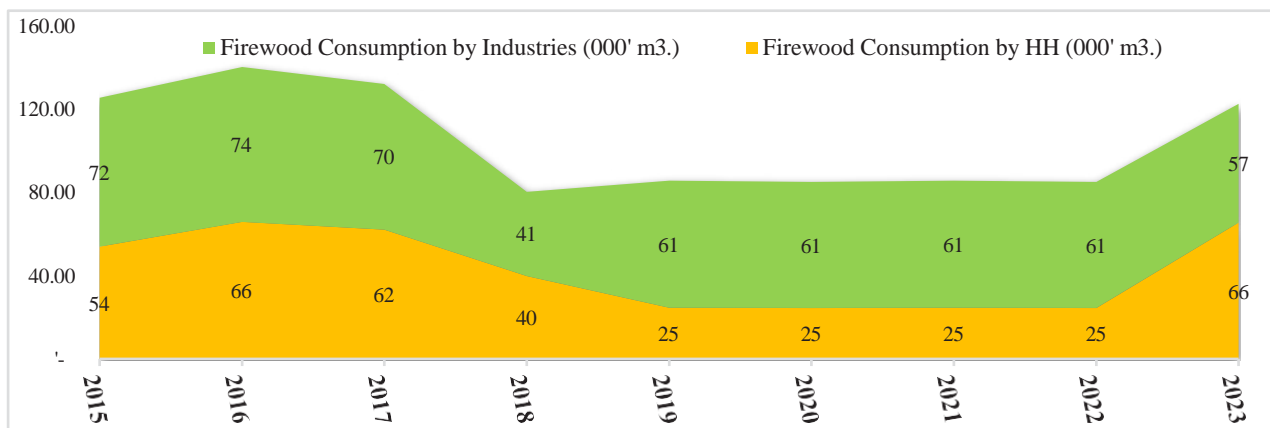


Figure 4.6 Consumption of firewood by HH & Industries (in 000' m3)

4.6. Briquette: Supply & Consumption

The demand for briquettes is primarily met through NRDCL. While some private sawmills may produce briquettes, their output is insignificant, and there is no reliable data available. Therefore, this account is solely based on NRDCL's briquette production records. According to these records, no briquettes were produced in 2023. The 47.06 MT of briquettes available in 2023 was carried over from the previous year's stock. This opening stock decreased by 66 percent compared to 2022. Similarly, disposal dropped by 48 percent, resulting in a total disposal of 47.60 MT in 2023.

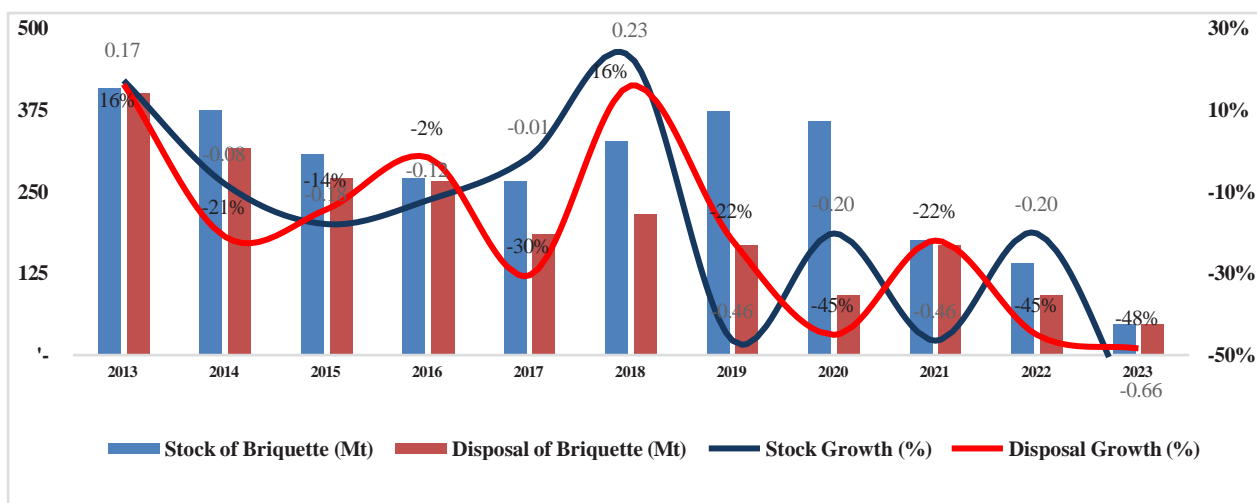


Figure 4.7 Stock, Disposal and Growth Trends for Briquette

Chapter 5: Asset Account

5.1 Introduction

In general, assets are defined as items considered valuable to society. In economics, assets are viewed as stores of value that often serve as inputs to production processes. Asset accounts for minerals and natural resources, such as timber, sand, stone aggregates, and stone chips, are tracked through supplies and disposals by NRDCL and the Department of Forest and Park Services, MoENR. The data is organized by the levels and values of stocks of natural inputs and how these stocks change over time.

The System of Environmental-Economic Accounting (SEEA) Central Framework emphasizes that flows related to extraction, depletion, and discoveries are central to asset accounts. This information is crucial for understanding the sustainability of individual resources.

5.2 Timber: Supply & Consumption

Timber is used particularly for construction purposes, renovation of Dzongs & Lhakhangs, and other constructions. The agencies discharged with the responsibility of timber supply are NRDCL and DoFPS, MoENR. It is either supplied for commercial use or on a concessional basis to the rural households depending on its use.

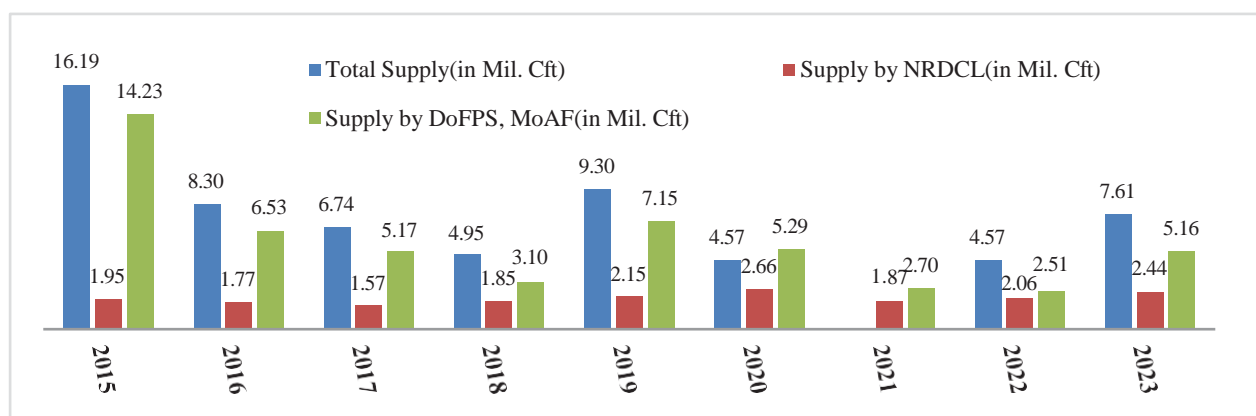


Figure 5.1 Supply of Timber (in Mil. Cu ft)

Timber supply in the economy increased significantly in 2023 compared to 2022. A total of 7.61 million cubic feet of timber was supplied in 2023, representing a 66.39 percent increase. Of this total supply, 67.86 percent was provided by the Department of Forest and Park Services, MoENR, while 32.14 percent was supplied by NRDCL.

Timber consumption was broadly categorized into commercial and concessional use, with 4.98 million cubic feet used for commercial purposes and 2.62 million cubic feet for concessional purposes. However, sector-wise consumption data for timber was unavailable, and thus could not be estimated.

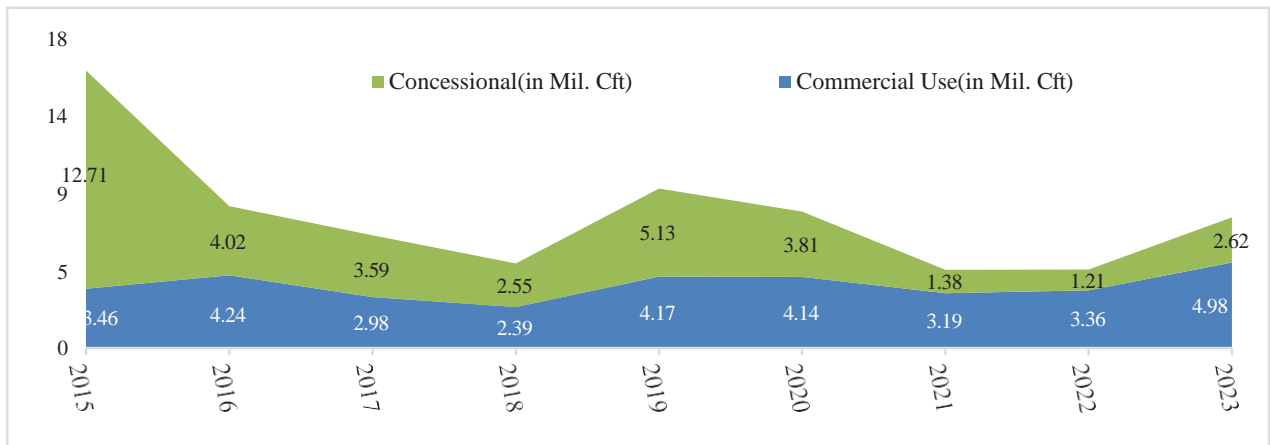


Figure 5.2 Use of Timber (in Million Cu ft.)

5.3 Sand: Supply and Consumption

NRDCL is the primary agency responsible for supplying sand for public consumption. However, the Department of Forest and Park Services, MoENR, also issues permits for individual sand extraction. Therefore, the total sand supply includes both NRDCL's supply and the extraction permitted by DoFPS, MoENR.

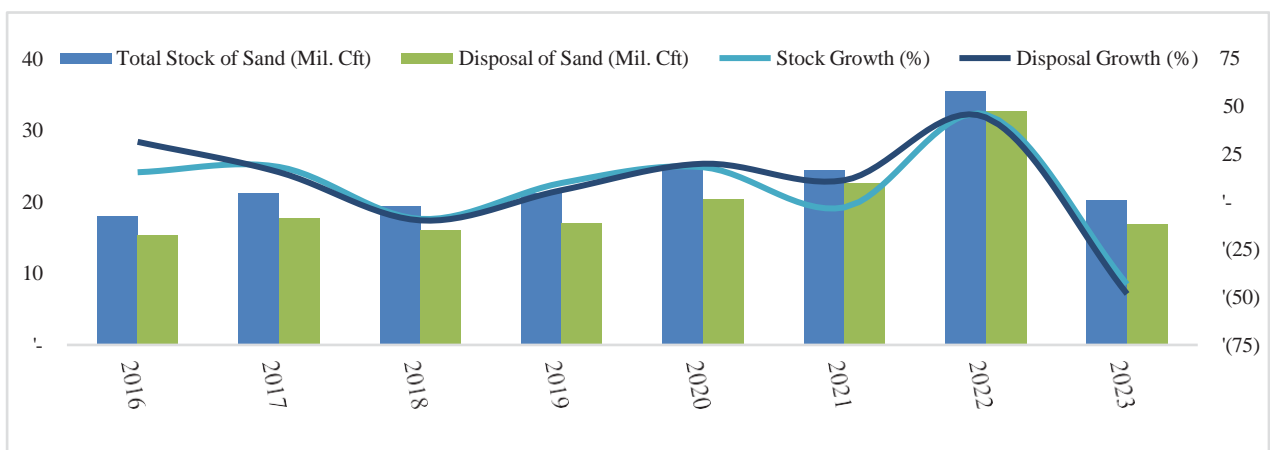


Figure 5.3 Stock, Disposal and Growth Trends of Sand

The total stock of sand decreased by 43.20 percent in 2023 compared to 2022. Additionally, the disposal of sand also dropped by 48.29 percent, as reflected in Figure 5.3.

5.4 Mineral Asset Account

This publication focuses primarily on non-metallic mineral resources, as information on metallic mineral resources in Bhutan is not available. The mineral asset accounting for non-metallic minerals is based solely on the available primary data from DGM, MoENR. These mineral resources are extracted for economic use and are generally considered nonrenewable. Hence, it is crucial to understand the quantity of mineral deposits by type and their rate of extraction.

Mineral resources in Bhutan are geologically known deposits that are extracted by mining and quarrying companies. The country's non-metallic resources include quarry materials such as coal, dolomite, limestone, gypsum, quartzite, and talc.

The key factors in the measurement of mineral asset accounting include understanding the mineral resources in the form of deposits or reserves and its extractions by different mining and quarrying companies. The deposit influences the likelihood and the cost of current and future extraction.

Physical asset accounts for mineral resources were compiled by type of mineral resources and it includes estimates of the opening and closing stocks of each mineral resources and changes in the stock over the accounting period. The NSB considered reserves of minerals which are geologically known reserves and its level as the opening stock, while the extractions were recorded as depletion.

5.5 Mineral Reserves

Data on reserves are gathered to use in developing physical accounts so as to understand the opening stock of individual mineral resources. There are three categories of mineral resources: proved, probable and possible. *Proved are economically mineable with high degree of certainty (high confidence level). Probable are economically mineable with lower level of confidence than proved reserves. Possible minerals are part of a mineral resource for which grade and mineral content are estimated with a low level of confidence.*

5.6 Extraction of Minerals

Minerals are extracted by mining and quarrying companies at different locations in the country. Information on extraction of minerals were compiled to ascertain whether mineral extractions or harvest are carried out sustainably.

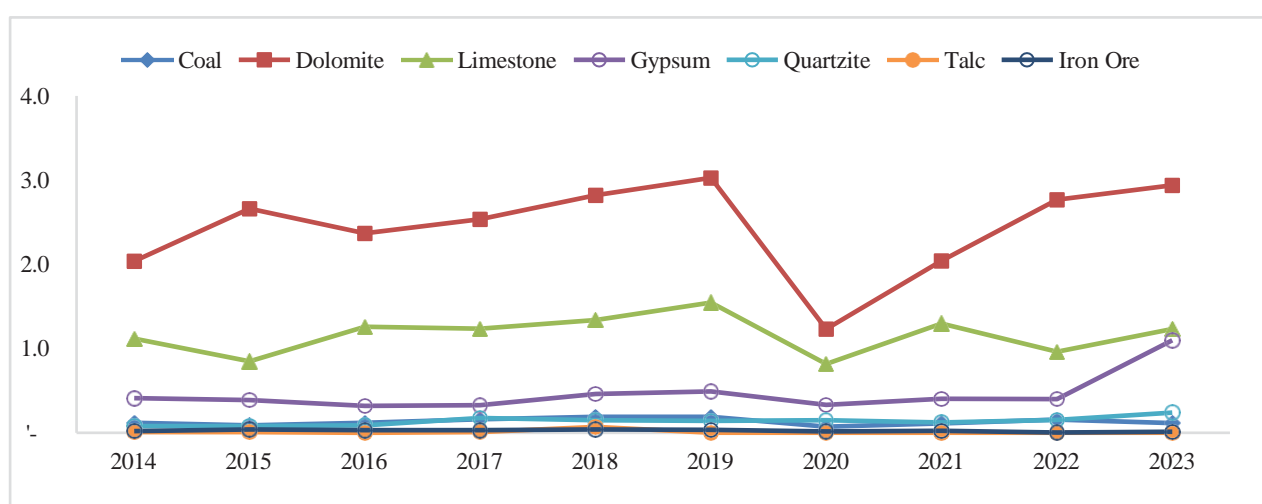


Figure 5.4 Trend in mineral extraction in MT

The average coal extraction from 2014 to 2023 was estimated at 0.13 million MT and the extraction ranged from 0.07 million MT to 0.19 million MT. The coal extraction in 2018 and 2019 was highest at 0.19 million

MT followed by 0.16 million MT in 2017 and 2022 and the extraction was minimum at 0.07 million MT in the year 2020. Extraction of dolomite on the other hand was recorded at 2.44 million MT. with the highest extraction of 3.03 million MT in 2019.

Limestone and gypsum extraction remains almost steady with an annual average extraction of 1.17 million MT and 0.46 million MT respectively. The talc extraction has remained the same in 2021 and 2022 with 0.0007 million MT. However, talc extraction in 2023 dropped to 0.0004 million MT. The only metal accounted for in this report is iron ore with average extraction of 0.03 million MT yearly from 2014 to 2023. The detail trends are shown in figure 5.4.

5.7 Physical Asset Account for Minerals

Physical asset account for minerals was compiled by type of minerals and include estimates of the opening and closing stock of each mineral and the changes over a period of time. The changes in stock encompass types of changes such as discoveries, reappraisals (includes both downward and upward), extractions, catastrophic losses and reclassifications. The total reserve of a particular mineral resource was considered as the opening stock, additions to stock such as discoveries, upward reappraisals and reclassification are added to total reserve. Extractions by different mining and quarrying companies are accounted and thus, subtracted from the total known reserves to ascertain the outstanding reserves of individual mineral resources. Here, the outstanding reserves does not necessarily mean reserves remaining from the known reserve, it may also include unknown reserve in the ground.

The physical asset account for different minerals records the opening stock: the level of mineral resources at the beginning of the year; increases in stocks through discoveries and other increases; the decrease in stock through extractions and other decreases; and the closing stock at the end of the accounting year. Thus, by the end of accounting year 2023, closing stocks are estimated at 14, 512.51 million MT Dolomite; 149.95 million MT limestone; 128.24 million MT gypsum; 3.41 million MT Quartzite; and 2.41 million MT Iron-ore. Whereas, for coal and talc are estimated as null, which means extraction of coal and talc has exceeded the known reserves from 2018 onwards. Since these two minerals fall under the possible mineral category, it is difficult to estimate the exact quantity of remaining reserve.

5.8 Monetary Asset Account for Minerals

The monetary asset account for mineral resources shows the market-based valuation of an individual mineral resources and changes in the value of these stocks over time. The Net Present Value (NPV) for constant extraction profile approach is adopted to compute a monetary value of the mineral resources. The formula for the calculation of NPV using an appropriate discount rate is:

$$V_t = \sum_{r=1}^N \frac{RR_{(t+r)}}{(1+r_t)^t}$$

Where, V_t is the value of the asset at time t ; N is the asset life (number of periods in which extraction takes place); RR_t is the resource rent at period t as expected at the beginning of period t ; and r is a nominal discount rate.

In this calculation, the NSB derived the harvest or actual quantity of extraction of individual mineral on the total volume of mineral resource left for future extraction dividing by the number of years (i.e., lease period provided to mining and quarrying companies). The resource rent for each mineral resource is calculated using company's books of accounts. The NPV of future extraction are discounted back to current value term using appropriate discount rate.

In most countries around the world, lending or interest rate is used as the basis to estimate the discount factor in the absence of any appropriate discount rate. We used Bank of Bhutan's fixed lending rate of 12 % to Mining & Quarrying Companies as the discount rate for this particular computation.

For accounting year 2023, Dolomite's net present value (NPV) was estimated at Nu. 202,532.66 million, provided a constant average extraction of 967.88 million MT, assumed to maintain the same for future years with constant per unit future resource rent of Nu. 293.99 million. Under similar conditions, we estimated NPV for other mineral resources such as coal, limestone, gypsum, quartzite, talc and iron ore. Limestone was estimated at Nu. 40,590.42 million, provided constant average extraction of 10.14 million MT and per unit future resource rent of Nu. 5,019.86 million; Gypsum was estimated at Nu. 5,608.81 million, given constant average extraction of 8.65 million MT and per unit resource rent of Nu. 813.46 million; Quartzite was estimated at Nu. 650.29 million, with constant average extraction of 0.25 million MT and per unit resource rent of Nu. 3,220.0 million; Iron-ore at Nu. 60.49 million, provided constant estimated average extraction of 0.16 million MT and per unit future resource rent of Nu. 468.50 million. The NPV of Talc and Coal could not be estimated as the total reserves are unknown. The detail calculation tables are attached at end in list of statistical tables, particularly *Table 28-33*.

Chapter 6: Experimental Energy Account

6.1 Overview

Energy is the dominant contributor to climate change and it accounts for almost 60 percent of the total global Ghg emission. SDG goal-7 targets that by 2030, to ensure universal access to affordable, reliable and modern energy services (UN Climate Change Conference, Paris). Bhutan has committed to remain carbon neutral.

The experimental energy accounts presented in this publication is in accordance with the principles of the System of Environmental-Economic Accounting (SEEA). It records flows of energy in physical units from the initial extraction or capture of energy resources from the environment into the economy; the flows of energy within the economy in the form of the supply and use of energy by industries and households; and flow back to the environment.

The SEEA-2012 recommends developing energy flow accounts to help clarify the relationship between the energy sector and some components of the environment, focusing on the role of energy-related air emissions. The data present are necessary for the derivation of important indicators such as energy intensity, efficiency, productivity, etc., and which ultimately relates to sustainable development indicators such as air quality and climate changes indicators.

The physical supply and use (PSUT) approach to account for energy flows, records flow of energy from natural inputs, energy products, energy residuals and other residual flows in physical units of measure. It is based on the principle that the total supply of each flow is equal to the total use of the same flow (i.e the total supply of energy products equals' total use of energy products)

Besides hydro-electricity being main source of energy, Bhutan also imports energy products like coal and fossil fuels from India to cater energy needs of economic sectors, particularly industry and transport sector. The experimental energy accounts were compiled purely based on latest available information from Bhutan Trade Statistics (BTS) of Ministry of Finance and data from other administrative sources. It adopts the *Standard International Energy Product Classification* (SIEC) and uses *Intergovernmental Panel on Climate Change (IPCC)* Conversion Factor (CF). The CF used is as follow:

Fuel	Basic Unit	Tonnes of Oil		
		Terajoules	Equivalent (ToE)	Petajoules
ATF (Jet Kerosene)	kl	0.03561	0.8505	0.000036
Coal (Anthracite)	MT	0.02670	0.6377	0.000027
Coal (Sub-bituminous)	MT	0.01890	0.4514	0.000019
Other Coal (Lignite)	MT	0.01190	0.2842	0.000012
Coke of Coal	MT	0.02820	0.6735	0.000028
Diesel (Gas Diesel Oil)	kl	0.03741	0.8935	0.000037
Electricity	GWh	3.60000	85.9845	0.003600
Wood (fuelwood and Briquette)	MT	0.01560	0.3726	0.000016
Kerosene	kl	0.03590	0.8578	0.000036
LPG	MT	0.04730	1.1297	0.000047
Petrol (Motor Gasoline)	kl	0.03411	0.8147	0.000034
Biogas	MT	0.05040	1.2038	0.000050
Light Diesel Oil (LDO)	kl	0.03655	0.8730	0.000037

Units	Abbreviation	Terajoules	Petajoules
Tonnes of Oil Equivalent	ToE	0.041868	0.000041868
Terajoules	TJ	1	0.001
Megawatt Hour	MWh	0.0036	0.0000036
Kilowatt Hour	kWh	0.0000036	3.6E-09
Kilocalorie	Kcal	4.19E-09	4.19E-12
Joule	J	1E-12	1E-15
Gigawatt Hour	GWh	3.6	0.0036

The NSB intends to develop emission account in future once the full set of energy accounts has been compiled. The energy sector is the primary source of CO₂ emission and therefore energy accounts and related statistics are important.

6.2 Energy Consumption

Energy consumption measures the amount of energy used in the Bhutanese economy. It is equal to indigenous production plus imports minus exports and changes in stocks. It includes energy consumed in energy conversion activities (such as electricity generation). It can be referred to as total net energy consumption and is also equal to total primary energy supply. The total energy consumption has increased from 682.61 KToE in 2022 to 834.53 KToE in 2023 which is an increase of about 22.26 percent.

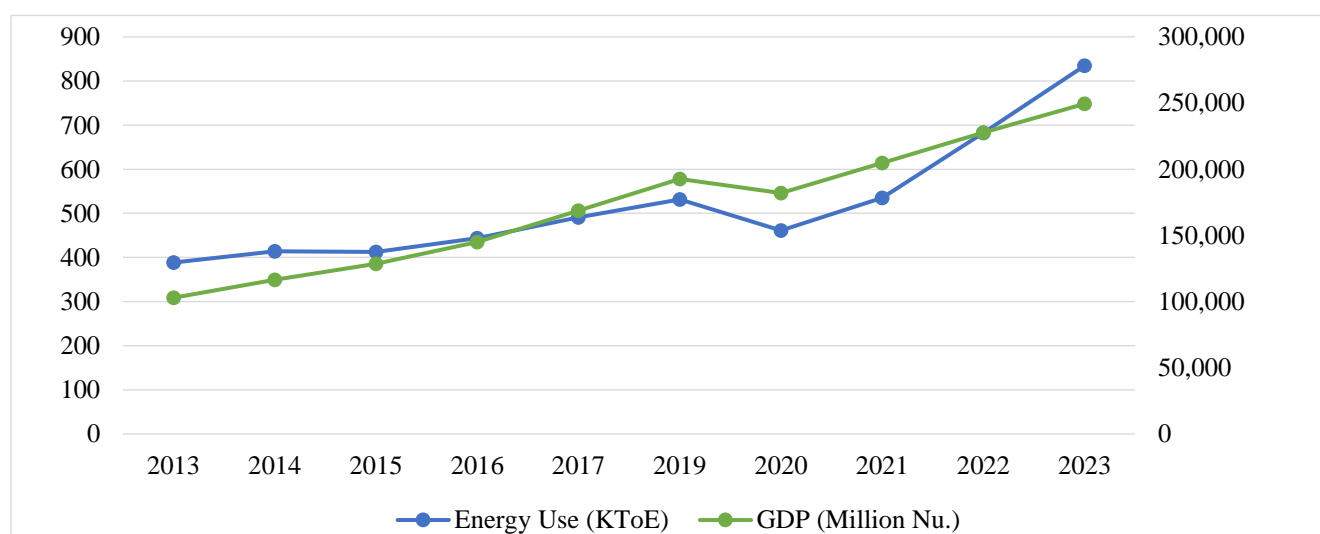


Figure 6.1: Yearly Domestic Energy Consumption and the GDP

Renewable (Electricity, wind, wood) accounts for the largest share of the energy consumption in economy at around 64.63 percent, where it consists mainly hydro energy. The Oil (Diesel, Petrol, kerosene, Aviation turbine fuel (ATF) energy remained the second largest accounting for about 22.32 percent of energy consumption. The Coal energy consumed at around 11.94 percent, whereas gas energy consumption was at around 1.11 percent.

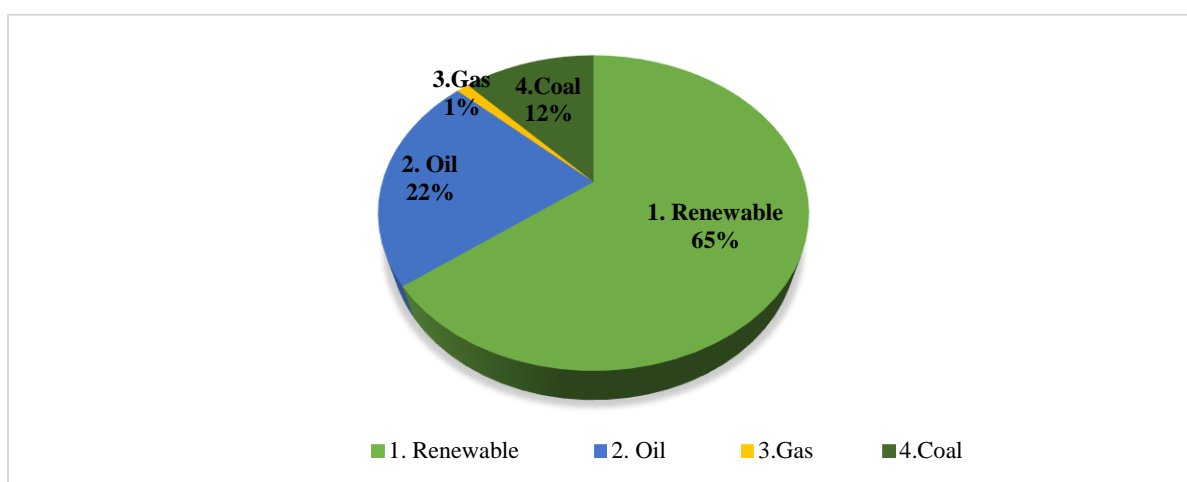


Figure 6.2: Energy Consumption by fuel type (in KToE and share (%))

In 2023, the consumption of Liquefied Petroleum Gas (LPG) decreased by 1.66 percent. The consumption of coal has considerably decreased by 53.98 percent whereas, the consumption of Renewable energy increase of 61.36 percent and oil energy has increased of 45.93 percent.

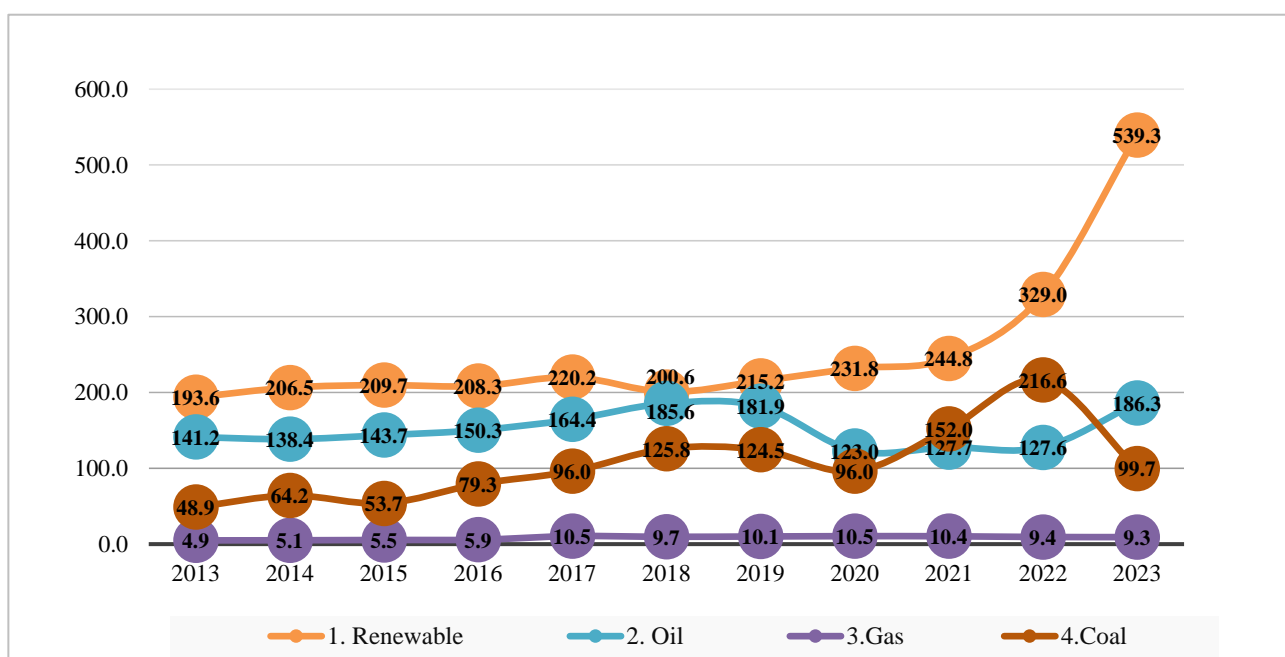


Figure 6.3: Yearly Energy Consumption (in KToE) trend by fuel type

6.3 Energy Production

Energy production is defined as the total amount of primary energy produced in the Bhutanese economy measured before consumption and transformation. Domestic production of primary energy decreases by almost 7.81 percent in 2023 compared to 2022, thus reaching a total energy production at 1014.95 KToE. Production continued to become increasingly export-oriented. Bhutan is a net exporter of energy, including hydro-electricity and coal, with net exports more than one-third of the total production.

Domestic energy production in Bhutan primarily includes renewable energy (mainly hydroelectricity) and coal. In 2023, production of both renewable energy and coal declined by 7.49 percent and 28.15 percent, respectively, compared to the previous year.

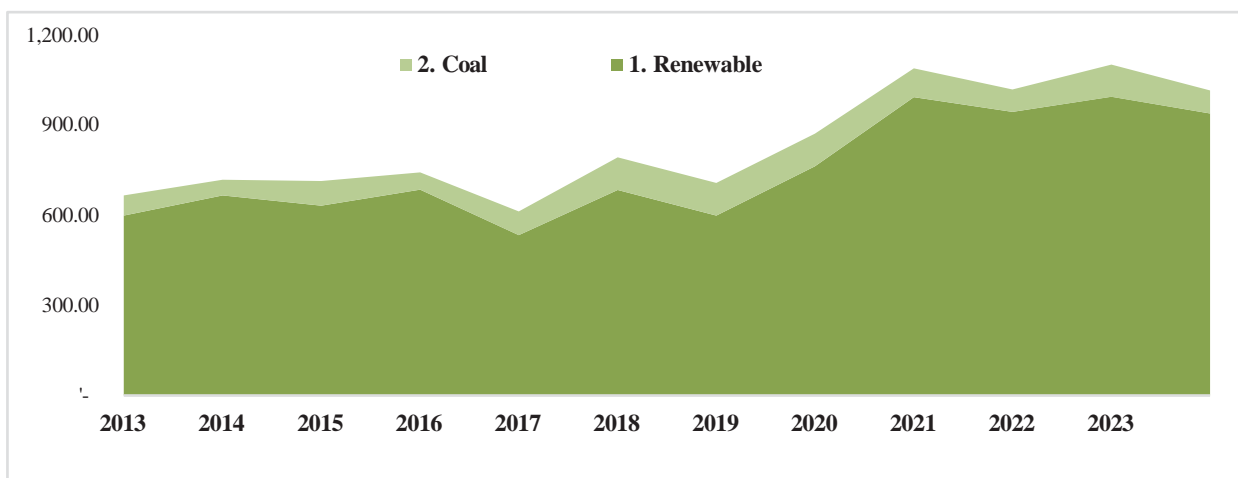


Figure 6.4: Yearly Energy Production by fuel type (KToE)

6.4 Energy Trade

6.4.1 Energy import from RoW

Bhutan imports various energy products, such as fossil fuel (diesel & petrol), aviation turbine fuel, kerosene, furnace oil, LPG, coal and hydroelectricity. Fossil fuel (diesel & petrol) imports accounts for about 54.93 percent of the total energy import, which was mainly used by the transport sector. The coal energy used for the industry sector remained second highest with about 25.20 percent of total energy import. The share of gas, renewable energy, and aviation turbine was less.

The overall energy import in the country increased by more than 31.34 percent. The Renewable, coal and Oil energy import has increased by a substantial amount, whereas Gas energy import has decreased in the year 2022.

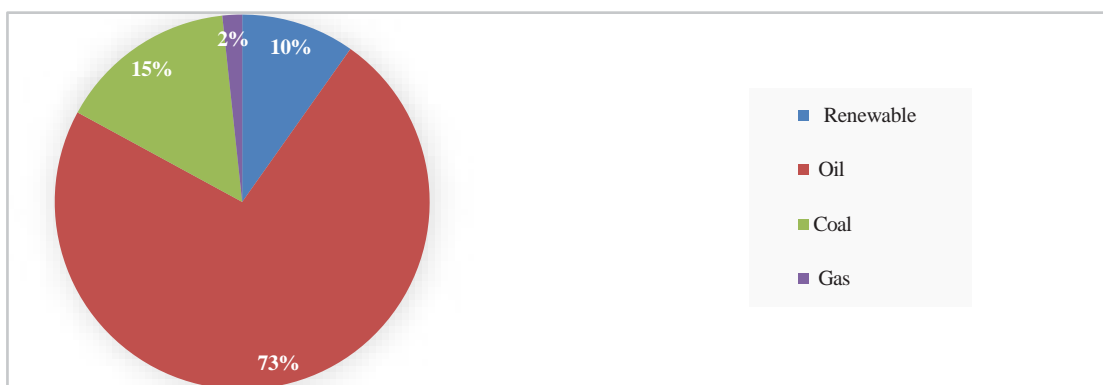


Figure 6.5 Share of energy Import (in KToE)

6.4.2 Energy Export

In terms of energy, Bhutan mainly exports hydro-electricity. The hydro-electricity remains a major export with almost 97 percent of the total energy export and the coal export being nil. However, as shown in the *Figure 6.6*, we also observe a very negligible share of petrol and diesel export which is defined as a fuel re-export, that generally includes some portion of the imported fuel consumed by Indian vehicles plying on Bhutanese roads transporting goods in and out of the country, fuel consumed by Indian tourist vehicles and refueling by Indian vehicles in the border towns.

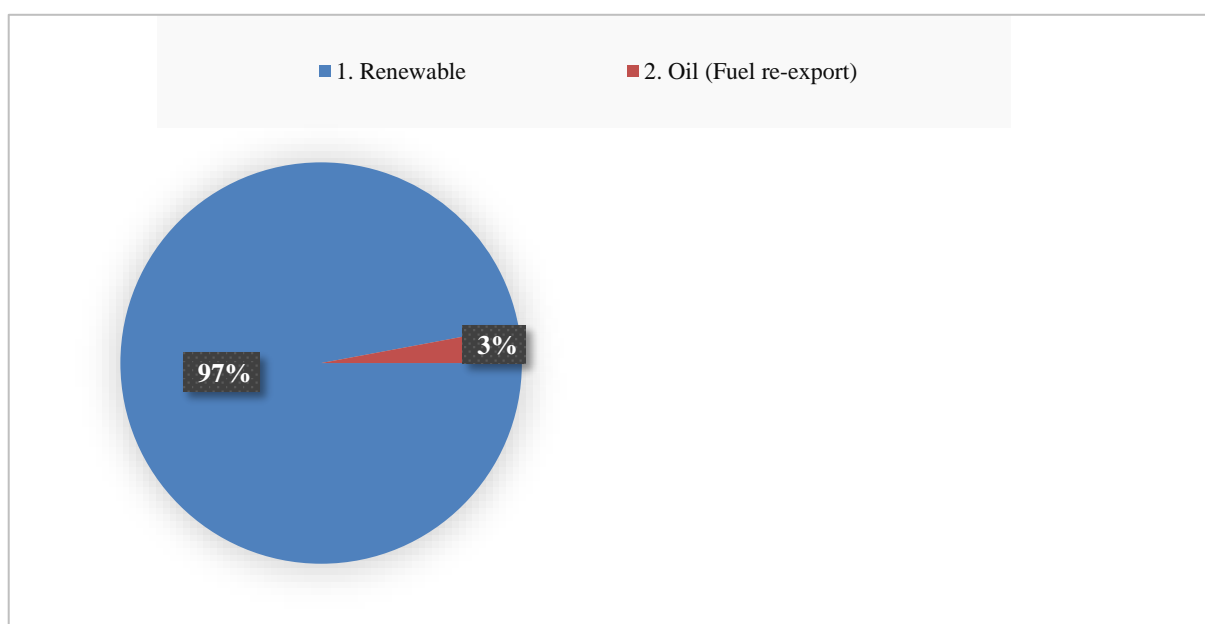


Figure 6.6: Share of energy Export (in KToE)

Chapter 7: Concepts, Definitions & Terminologies of SEEA

7.1 Green Economy

UNEP 2011 defines green economy as one that results in “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”. The Green Economy Indicators are compiled based on the framework of United Nations Statistics Division (UNSD), which closely follows the OECD green growth structure. It consists of 44 core set of indicators (CS) and 53 indicators that are non-core (NCS).

7.2 SEEA

The System of Environmental-Economic Accounting (SEEA) is an international statistical standard that provides a comprehensive set of accounting tables to guides national statistics offices for compilation of consistent and comparable statistics and indicators for policymaking, analysis and research. It provides conceptual framework for understanding the interactions between the environment and the economy.

7.3 Electricity Account

The total supply as explained above is accounted as: $S=DP+M$; where, S =Total Supply, DP =Domestic Production and M =Import. Information on the production side (supply) are sourced from the annual reports of DGPC. The total use is computed as: $U=DU+X$; where U =Total Use, DU =Domestic Use (input in industries & household consumption), X =Export. The consumption data are sourced from BPCL and accordingly mapped into different sectors of economy.

7.4 SNA

The System of National Accounts is the framework of accounts which measures the level of economic development and the rate at which the economy of the country grows over time.

7.5 Depletion

SEEA defines depletion as the decrease in the quantity of the stock of a natural resource over an accounting period due to the extraction of the natural resource by economic units.

7.6 Opening stock of minerals

The opening stock is the level of mineral resources at the beginning of the year and it should. Be equal to the closing stock of the previous year.

7.7 Closing stock of minerals

The closing stock of mineral is the level of reserve at the endo of the year and it should be equal to the opening stock of the subsequent year.

7.8 Upward changes

Upward changes are any new discoveries of new stock of minerals through exploration and evolution.

7.9 Downward changes

Downward changes are changes through extractions or any other decreases like catastrophic losses and reclassifications.

7.10 Resource Rent

The resource rent is the economic value of the mineral and it is estimated to ascertain whether mineral resources are being harvested sustainably. It is calculated based on the residual value method of SEEA which excludes operating costs, specific taxes and subsidies, and consumption of fixed capital from the output.

7.11 Social discount rate

The Net present value (NPV) method uses social discount rates to discount the value of future returns to explain in the current terms. The returns earned in the current period are worth more than returns earned in the future.

7.12 Energy accounts

Energy accounts provide information on energy supply and use. It applies the principle that supply of energy equals use of energy. It presents information on energy production, domestic consumption and net export.

7.13 Energy from natural inputs

Energy from natural inputs encompasses flows of energy from the removal and capture of energy from the environment by resident economic units.

7.14 Energy products

Energy products are products that are used as a source of energy. They comprise fuels that are produced/generated by economic unit as a source of energy; electricity generated by economic units; and heat sold or generated by other economic units.

7.15 Energy residuals

Energy residuals are mainly energy losses through flaring and venting of natural gas and losses during transformation in the production processes, leakages of liquid fuels, loss of heat during transport, losses during distribution, electricity transmission and transport.

Statistical Tables

Table 1 Physical Account of Electricity

							<i>(GWh)</i>
SUPPLY				USE			
Year	Production	Imports	Total	Exports	Transmission Loss	Domestic Use	Total
2000	1,921.70	34.39	1,956.08	1,460.48	35.30	460.30	1,956.08
2001	1,967.75	6.90	1,974.65	1,392.62	39.14	542.89	1,974.65
2002	2,173.08	24.30	2,197.38	1,476.37	68.06	652.94	2,197.38
2003	2,377.43	18.72	2,396.15	1,695.80	93.05	607.30	2,396.15
2004	2,423.27	22.80	2,446.07	1,707.19	122.72	616.17	2,446.07
2005	2,519.56	18.43	2,537.99	1,713.61	130.18	694.20	2,537.99
2006	3,354.67	34.69	3,389.36	2,526.15	117.20	746.01	3,389.36
2007	6,421.95	22.22	6,444.17	5,372.57	121.05	950.55	6,444.17
2008	7,158.17	9.38	7,167.55	5,922.38	150.59	1,094.58	7,167.55
2009	6,922.94	64.16	6,987.10	5,404.82	165.47	1,416.81	6,987.10
2010	7,327.73	131.56	7,459.29	5,579.49	166.99	1,712.81	7,459.29
2011	7,067.55	40.32	7,107.87	5,273.10	93.98	1,740.79	7,107.87
2012	6,826.48	59.36	6,885.84	4,895.67	84.17	1,738.98	6,718.82
2013	7,549.84	112.26	7,662.10	5,557.63	43.06	2,061.41	7,662.10
2014	7,163.79	159.16	7,322.95	5,301.28	16.84	2,004.83	7,322.95
2015	7,747.17	124.52	7,871.69	5,503.07	311.48	2,057.14	7,871.69
2016	7,953.58	86.53	8,040.11	5,763.13	268.07	2,008.91	8,040.11
2017	7,729.77	91.93	7,821.70	5,700.99	65.04	2,185.79	7,951.83
2018	6,959.81	133.98	7,093.79	4,558.08	207.27	2,328.44	7,093.79
2019	8,875.87	96.37	8,972.24	6,146.60	545.01	2,280.63	8,972.24
2020	11,389.26	81.75	11,471.01	9,175.86	334.61	1,960.54	11,471.01
2021	10,821.80	25.19	10,846.99	8,074.27	61.49	2,711.23	10,846.99
2022	10,754.05	247.32	11,001.37	7,240.21	107.16	3,654.00	11,001.37
2023	10,535.60	622.00	11,157.60	5,143.84	117.78	5,895.98	11,157.60

Table 2 Monetary Account of Electricity

							<i>(Mill. Nu.)</i>
SUPPLY				USE			
Year	Production	Imports	Total	Exports	Losses through transmission & distribution	Industries and households	Total
2000	2,307.26	51.58	2,358.85	2,190.72	38.22	129.90	2,358.85
2001	2,237.78	6.90	2,244.68	2,097.85	48.53	98.31	2,244.68
2002	2,530.55	24.30	2,554.85	2,289.82	85.75	179.28	2,554.85
2003	2,867.94	18.72	2,886.66	2,603.33	121.62	161.71	2,886.66
2004	3,005.05	30.73	3,035.78	2,711.75	149.47	174.56	3,035.78
2005	3,956.64	32.77	3,989.41	3,479.20	209.14	301.07	3,989.41
2006	5,552.83	63.13	5,615.95	4,976.18	247.25	392.52	5,615.95
2007	10,962.37	37.73	11,000.10	10,034.33	91.71	874.06	11,000.10
2008	12,593.17	14.26	12,607.43	11,032.60	103.94	1,470.89	12,607.43
2009	10,889.85	111.03	11,000.88	10,071.00	111.57	818.31	11,000.88
2010	11,811.46	233.87	12,045.33	10,411.46	139.73	1,494.14	12,045.33
2011	10,948.33	67.18	11,015.51	9,839.21	162.12	1,014.18	11,015.51
2012	11,140.80	110.30	11,251.10	9,714.53	148.23	1,388.34	11,251.10
2013	13,051.66	214.93	13,266.59	11,013.99	149.96	2,102.64	13,266.59
2014	13,905.77	371.28	14,277.05	10,698.31	-	3,578.74	14,277.05
2015	14,258.09	341.51	14,599.60	10,991.32	-	3,608.28	14,599.60
2016	12,882.94	222.50	13,105.44	11,421.89	0.80	1,682.75	13,105.44
2017	16,292.87	440.95	16,733.82	12,396.77	1.38	4,335.67	16,733.82
2018	14,391.21	1,134.81	15,526.02	10,432.52	1.35	5,092.15	15,526.02
2019	20,293.41	596.64	20,890.05	15,605.17	0.85	5,284.03	20,890.05
2020	31,472.34	180.68	31,653.02	27,039.82	-	4,613.20	31,653.02
2021	28,273.98	75.49	28,349.48	24,197.99	306.01	3,845.48	28,349.48
2022	27,053.74	774.15	27,827.90	22,663.04	258.86	4,906.00	27,827.90
2023	25,641.10	2,973.00	26,415.25	17,793.59	285.02	8,336.64	26,415.25

Table 3 Gross Electricity Consumption by Household & Industry

Year	(GWh)		
	Household	Industry	Total
2000	64.01	396.30	460.30
2001	72.09	470.81	542.89
2002	91.28	561.67	652.94
2003	88.40	518.89	607.30
2004	87.59	528.57	616.17
2005	93.23	600.97	694.20
2006	90.37	655.64	746.01
2007	110.97	839.58	950.55
2008	126.41	968.16	1,094.58
2009	182.47	1,234.34	1,416.81
2010	208.80	1,504.01	1,712.81
2011	209.53	1,531.26	1,740.79
2012	179.96	1,559.03	1,738.98
2013	251.69	1,809.72	2,061.41
2014	250.44	1,754.39	2,004.83
2015	284.31	1,772.83	2,057.14
2016	547.71	1,461.20	2,008.91
2017	359.87	1,825.88	2,185.75
2018	383.36	1,945.08	2,328.44
2019	307.54	1,973.09	2,280.63
2020	357.60	1,663.67	2,021.27
2021	385.62	2,325.61	2,711.23
2022	537.92	3,116.08	3,654.00
2023	364.00	5,531.98	5,895.98

Table 4 Gross Electricity Consumption by Economic Sectors

Year	(GWh)											
	Total Industry	Agriculture, Livestock & Forestry	Mining & Quarrying	Manufacturing	Electricity & Water	Construction	Trade	Hotel & Restaurant	Transport, Storage & Communication	Finance, Insurance & Real Estate	Community, Social & Personal Service	Private, Social & Recreational Services
2000	396.30	0.24	1.06	335.44	12.89	2.84	7.29	0.58	1.71	0.55	33.66	0.03
2001	470.81	0.27	1.26	401.93	13.44	4.05	8.91	0.77	2.04	0.62	37.48	0.03
2002	561.67	0.36	1.82	471.99	17.88	5.70	12.48	0.93	2.74	0.72	47.03	0.04
2003	518.89	0.32	1.96	432.21	19.21	5.16	11.97	0.89	2.50	0.76	43.86	0.04
2004	528.57	0.33	1.39	444.06	16.46	5.51	13.32	1.04	2.92	0.83	42.68	0.04
2005	600.97	0.35	1.75	500.88	19.54	6.01	16.24	1.31	3.47	1.08	50.30	0.05
2006	655.64	0.34	2.54	548.71	26.10	5.29	16.38	1.69	3.32	1.16	50.05	0.05
2007	839.58	0.36	2.54	704.26	48.58	5.87	17.40	2.04	3.58	1.36	53.55	0.06
2008	968.16	0.39	3.62	813.39	56.44	5.49	19.04	3.20	4.35	1.53	60.62	0.07
2009	1,234.34	0.50	4.64	1,025.91	66.65	7.58	23.95	3.49	5.61	1.92	94.00	0.08
2010	1,504.01	0.54	5.29	1,267.70	70.60	10.25	30.02	3.87	6.38	2.10	107.19	0.09
2011	1,531.26	0.56	5.79	1,288.26	60.10	12.62	33.87	5.51	7.14	2.43	114.88	0.09
2012	1,559.03	0.51	3.52	1,345.23	45.32	14.13	34.39	5.61	6.47	2.07	101.71	0.08
2013	1,809.72	0.62	5.75	1,549.77	61.01	15.75	42.44	7.42	7.62	2.52	116.71	0.10
2014	1,754.39	1.40	4.06	1,544.64	64.19	24.33	20.24	16.91	11.98	2.63	63.28	0.73
2015	1,772.83	0.67	7.00	1,550.37	67.57	4.06	8.93	19.57	12.18	0.47	101.81	0.20
2016	1,461.20	2.25	9.47	822.76	232.12	19.07	26.34	50.41	36.64	14.71	246.76	0.66
2017	1,825.88	1.32	7.11	1,466.38	114.84	16.81	26.36	25.45	18.47	5.50	143.19	0.45
2018	1,945.08	1.41	7.57	1,562.11	122.34	17.91	28.08	27.11	19.67	5.86	152.54	0.48
2019	1,973.09	5.38	121.92	1,555.63	25.93	9.16	93.71	33.41	17.29	3.26	106.34	1.06
2020	1,663.67	6.64	153.55	1,246.96	26.38	10.72	52.25	21.33	20.10	4.06	120.57	1.11
2021	2,325.61	5.42	228.56	1,496.83	23.84	342.73	54.58	12.74	22.03	4.44	133.19	1.24
2022	3,116.08	13.62	266.29	1,756.41	50.24	423.60	133.69	33.78	59.68	12.31	363.18	3.27
2023	5,531.98	27.67	296.77	3,542.15	57.69	508.78	234.64	178.99	304.68	16.93	357.70	5.98

Table 5 Gross Electricity Consumption by Industry by Economic Sectors

Year	(Mill. Nu.)											
	Total Industry	Agriculture, Livestock & Forestry	Mining & Quarrying	Manufacturing	Electricity & Water	Construction	Trade	Hotel & Restaurant	Transport, Storage & Communication	Finance, Insurance & Real Estate	Community, Social & Personal Service	Private, Social & Recreational Services
2000	115.36	0.07	0.39	95.92	3.87	0.95	2.19	0.16	0.55	0.16	11.09	0.01
2001	87.81	0.05	0.29	73.69	2.59	0.87	1.71	0.14	0.42	0.11	7.92	0.01
2002	159.11	0.11	0.64	131.26	5.22	1.86	3.64	0.25	0.86	0.20	15.07	0.01
2003	142.75	0.09	0.67	116.66	5.44	1.64	3.39	0.24	0.76	0.21	13.64	0.01
2004	154.58	0.10	0.51	127.53	4.96	1.86	4.01	0.29	0.94	0.24	14.13	0.01
2005	268.58	0.16	0.97	219.69	8.99	3.10	7.47	0.56	1.71	0.47	25.42	0.02
2006	354.40	0.19	1.71	291.38	14.54	3.30	9.12	0.88	1.98	0.62	30.63	0.03
2007	792.20	0.36	2.99	653.96	47.33	6.41	16.94	1.86	3.73	1.27	57.30	0.06
2008	1,334.62	0.58	6.24	1,103.70	80.36	8.76	27.10	4.27	6.64	2.09	94.80	0.09
2009	733.67	0.32	3.45	599.08	40.84	5.20	14.67	2.00	3.68	1.13	63.26	0.05
2010	1,347.94	0.51	5.92	1,117.37	65.29	10.62	27.75	3.35	6.32	1.86	108.87	0.08
2011	916.29	0.35	4.33	757.65	37.09	8.73	20.89	3.18	4.72	1.43	77.86	0.05
2012	1,252.11	0.45	4.98	1,055.89	43.61	12.62	30.32	4.96	5.83	1.73	91.64	0.07
2013	1,896.32	0.69	7.54	1,599.14	66.05	19.11	45.93	7.52	8.84	2.62	138.78	0.11
2014	3,164.20	3.02	11.26	2,687.10	122.27	58.23	41.79	44.52	29.49	6.31	158.50	1.72
2015	3,174.31	1.42	16.69	2,670.50	125.18	9.23	20.90	44.34	29.60	1.00	255.01	0.43
2016	1,223.97	1.89	7.93	689.18	194.43	15.98	22.07	42.23	30.69	12.32	206.70	0.55
2017	2,433.92	2.88	14.62	2,058.92	102.95	28.84	28.84	22.16	24.20	4.30	143.81	2.39
2018	4,522.96	9.88	17.51	3,431.72	71.36	126.62	272.17	99.87	16.92	0.93	475.71	0.26
2019	4,552.42	22.77	244.22	3,147.73	76.57	40.39	309.49	147.30	76.13	13.93	468.96	4.92
2020	2,784.57	6.49	273.67	1,792.23	28.55	410.36	65.36	15.25	26.38	5.31	159.48	1.49
2021	3,279.37	14.33	280.24	1,848.45	52.87	445.80	140.70	35.55	62.81	12.96	382.21	3.44
2022	4,226.73	21.14	226.75	2,922.54	71.10	37.50	287.35	136.76	70.68	12.94	435.41	4.57
2023	7,821.96	39.12	419.62	5,008.43	81.57	719.39	331.77	253.09	430.80	23.94	505.77	8.46

Table 9: Supply & Use of Fossil Fuel in %

Supply												
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic Production	-	-	-	-	-	-	-	-	-	-	-	-
Import												
1. Diesel	80.72	80.22	78.94	78.28	78.01	78.31	76.97	74.66	74.62	77.08	74.58	73.44
2. Petrol	19.28	19.78	21.06	21.72	21.99	21.69	23.03	25.34	25.38	22.92	25.42	26.56
Total Supply	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	101.00
Use												
Major Sectors	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1. Agriculture, Livestock & Forestry	7.47	7.65	8.62	10.80	11.91	12.97	12.21	12.99	21.50	12.76	12.35	12.16
Diesel	9.25	9.54	10.92	13.78	15.26	16.55	12.95	14.34	24.27	16.55	16.55	16.55
Petrol	0.00	0.00	0.00	0.03	0.04	0.04	9.75	8.99	13.35	0.04	0.04	0.04
2. Industry	16.20	16.34	17.33	17.07	19.44	21.48	19.04	20.61	20.08	21.15	20.49	20.19
Diesel	19.95	20.23	21.82	21.63	24.74	27.27	24.59	27.44	26.75	27.27	27.27	27.27
Petrol	0.50	0.54	0.52	0.64	0.66	0.59	0.49	0.51	0.49	0.59	0.59	0.59
3. Services	38.66	39.87	41.10	39.84	39.26	38.15	33.38	35.71	32.74	37.59	36.47	35.96
Diesel	47.32	49.07	51.41	50.09	49.46	47.92	42.65	47.00	43.10	47.92	47.92	47.92
Petrol	2.39	2.56	2.47	2.90	3.08	2.86	2.42	2.45	2.27	2.86	2.86	2.86
3. HH consumption	17.37	17.24	18.41	19.57	21.03	20.73	18.12	19.42	18.49	21.61	23.39	24.20
Diesel	3.28	3.29	3.55	3.87	5.21	5.27	4.68	5.49	5.30	5.27	5.27	5.27
Petrol	76.36	73.76	74.08	76.17	77.11	76.57	63.03	60.48	57.26	76.57	76.57	76.57
Re-Export	20.30	18.90	14.54	12.72	8.36	6.67	17.25	11.27	7.19	6.88	7.30	7.49
1. Diesel	20.20	17.86	12.30	10.64	5.33	2.99	15.13	5.73	0.58	2.99	2.99	2.99
2. Petrol	20.75	23.14	22.93	20.25	19.11	19.94	24.31	27.57	26.63	19.94	19.94	19.94
Total use of Diesel	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total use of Petrol	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total use	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 10 Supply & Use of Fossil Fuel (Diesel and Petrol)

Supply														
Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Production	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Imports	4,201.76	4,927.00	6,228.71	7,218.10	7,731.32	6,730.68	7,307.19	8,479.01	10,348.01	9,946.51	6,338.69	8,515.98	11,373.61	11,373.61
1. Diesel at basic price	3,250.61	3,562.81	4,601.90	5,471.94	5,911.38	5,024.82	5,549.46	6,505.27	7,965.84	7,602.88	4,678.80	6,485.41	8,735.34	10,000.47
2. Petrol at basic price	951.15	1,364.19	1,626.82	1,746.16	1,819.94	1,705.86	1,757.73	1,973.74	2,382.17	2,343.63	1,659.89	2,030.57	2,638.27	3,393.08
Total Margin	636.70	690.87	749.12	841.32	1,035.00	1,233.21	1,669.84	1,668.68	1,702.96	1,982.51	744.98	999.00	1,333.54	1,333.54
Trade and Transport margin (Diesel)	480.09	526.19	571.09	637.05	760.59	966.20	1,113.18	1,272.15	1,297.37	1,316.47	538.43	746.33	1,005.25	1,172.54
Trade and Transport margin (Petrol)	156.62	164.67	178.03	204.26	274.40	267.01	556.66	396.52	405.59	666.04	206.54	252.67	328.29	422.21
Supply at market price (Diesel)	3,730.70	4,089.00	5,172.99	6,108.99	6,671.97	5,991.02	6,662.64	7,777.42	9,263.21	8,919.35	5,217.23	7,231.74	9,740.59	11,173.01
Supply at market price (Petrol)	1,107.77	1,528.86	1,804.85	1,950.42	2,094.34	1,972.87	2,314.39	2,370.26	2,787.76	3,009.67	1,866.43	2,283.24	2,966.56	3,815.29
Total Supply at market Price	4,838.46	5,617.87	6,977.83	8,059.42	8,766.32	7,963.89	8,977.02	10,147.69	12,050.97	11,929.02	7,083.67	9,514.98	12,707.15	14,988.30
Use														
Major sectors	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1. Agriculture, Livestock & Forestry	278.464	395.325	478.525	582.665	728.812	826.367	1017.387	1288.004	1557.065	1552.694	951.735	1197.668	1613.119	1846.920
Diesel	278.407	395.257	478.451	582.588	728.732	825.736	1016.436	1287.018	1556.111	1551.764	951.155	1196.718	1611.885	1845.333
Petrol	0.056	0.068	0.074	0.077	0.080	0.632	0.950	0.986	0.955	0.930	0.580	0.950	1.234	1.587
2. Industry	682.225	917.734	1,041.034	1,246.604	1,466.677	1,308.575	1,663.448	2,134.940	2,291.183	2,462.291	1,485.579	1,985.617	2,673.826	3,063.553
Diesel	676.802	909.304	1,032.016	1,236.103	1,455.772	1,295.923	1,648.262	2,120.918	2,277.576	2,447.079	1,475.374	1,972.111	2,656.277	3,040.984
Petrol	5.424	8.431	9.018	10.501	10.905	12.652	15.186	14.021	13.608	15.212	10.206	13.506	17.549	22.569
3. Services	1,776.056	2,260.064	2,495.536	3,064.237	3,532.774	3,099.312	3,424.947	3,859.733	4,087.263	4,338.378	2,480.812	3,530.948	4,752.795	5,453.132
Diesel	1,738.935	2,216.825	2,452.474	3,014.329	3,481.094	3,042.077	3,353.691	3,791.898	4,019.828	4,264.701	2,428.418	3,465.603	4,667.894	5,343.941
Petrol	37.121	43.239	43.062	49.908	51.681	57.235	71.256	67.836	67.435	73.677	52.394	65.345	84.901	109.191
3. HH consumption	1,007.120	1,335.844	1,548.131	1,639.858	1,788.512	1,734.396	2,132.149	2,224.400	2,190.806	2,309.486	1,498.640	2,129.033	2,784.346	3,508.485
Diesel	110.670	139.118	169.880	201.259	237.058	231.594	347.414	409.544	433.775	489.245	293.609	380.809	512.920	587.206
Petrol	896.450	1,196.725	1,378.251	1,438.599	1,551.454	1,502.802	1,784.735	1,814.857	1,757.031	1,820.242	1,205.031	1,748.224	2,271.426	2,921.279
Re-Export	1094.597	708.898	1,414.606	1,526.053	1,249.543	995.242	739.092	640.611	1,924.653	1,266.169	666.887	671.718	883.063	1,116.209
1. Diesel	925.882	428.499	1,040.165	1,074.714	769.319	595.696	296.833	168.047	975.920	166.560	68.670	216.504	291.614	355.547
2. Petrol	168.716	280.399	374.441	451.339	480.224	399.546	442.259	472.564	948.733	1,099.610	598.217	455.214	591.449	760.662
Total use of Diesel	3,730.695	4,089.004	5,172.987	6,108.992	6,671.974	5,991.025	6,662.637	7,777.424	9,263.210	8,919.348	5,217.232	7,231.745	9,740.590	11,173.011
Total use of Petrol	1,107.767	1,528.862	1,804.846	1,950.424	2,094.343	1,972.867	2,314.386	2,370.264	2,787.761	3,009.670	1,866.435	2,283.239	2,966.559	3,815.289
Total use	4,838.462	5,617.866	6,977.833	8,059.416	8,766.318	7,963.892	8,977.023	10,147.688	12,050.971	11,929.018	7,083.667	9,514.984	12,707.149	14,988.300

Table 11: Supply & Use of Kerosene

<i>(in KL)</i>												
Supply												
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic Production	-	-	-	-	-	-	-	-	-	-	-	-
Import	5,567.00	4,990.00	5,694.00	4,611.00	4,791.00	4,238.00	3,597.00	2,886.00	1,794.00	1,730.37	1,144.10	601.54
Total Supply	5,567.00	4,990.00	5,694.00	4,611.00	4,791.00	4,238.00	3,597.00	2,886.00	1,794.00	1,730.37	1,144.10	601.54
Use												
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Household	5,547.00	4,978.00	5,673.00	4,599.00	4,755.00	4,226.00	3,597.00	2,886.00	1,782.00	1,730.37	1,144.10	601.54
Industries	20.00	12.00	21.00	12.00	36.00	12.00	-	-	12.00	-	-	-
Total Use	5,567.00	4,990.00	5,694.00	4,611.00	4,791.00	4,238.00	3,597.00	2,886.00	1,794.00	1,730.37	1,144.10	601.54

Table 12: Growth in Supply & Use of Kerosene

<i>(in percent)</i>												
Supply	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic Production	-	-	-	-	-	-	-	-	-	-	-	1.00
Import	(2.79)	(10.36)	14.11	(19.02)	3.90	(11.54)	(15.13)	(19.77)	(37.84)	(3.55)	(33.88)	(47.42)
Total Supply	(2.79)	(10.36)	14.11	(19.02)	3.90	(11.54)	(15.13)	(19.77)	(37.84)	(3.55)	(33.88)	(47.42)
Use												
Household	(1.07)	(10.26)	13.96	(18.93)	3.39	(11.13)	(14.88)	(19.77)	(38.25)	(2.90)	(33.88)	(47.42)
Industries	(83.33)	(40.00)	75.00	(42.86)	200.00	(66.67)	(100.00)	-	-	-	-	-
Total Use	(2.79)	(10.36)	14.11	(19.02)	3.90	(11.54)	(15.13)	(19.77)	(37.84)	(3.55)	(33.88)	(47.42)

Table 13: Supply & Use of Kerosene

<i>(Million Nu.)</i>												
Supply	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic Production	-	-	-	-	-	-	-	-	0	-	-	-
Import	72.71	65.56	75.83	60.69	66.06	98.41	79.34	79.93	43.76	60.78	73.63	37.83
Total Supply	72.71	65.56	75.83	60.69	66.06	98.41		79.93	43.76	60.78	73.63	37.83
Losses	-	-	-	-	-	-	-	-	0	-	-	-
Trade and Transport margin (TTM)	33.06	30.98	11.18	11.77	11.61	4.65	34.00	29.42	12.18	16.91	20.49	-
Total Supply (at market price)	105.77	96.54	87.01	72.46	77.67	103.06	34.00	109.35	55.94	77.69	94.12	10.59
Use												
Household	105.39	96.30	86.69	72.27	77.09	102.77	113.34	109.35	55.56	77.69	94.12	10.59
Industries	0.38	0.23	0.32	0.19	0.58	0.29	-	-	0.37	-	-	1.00
Total use (3+4)	105.77	96.54	87.01	72.46	77.67	103.06	113.34	109.35	55.94	77.69	94.12	10.59

Table14: Supply & Use of LPG

(in MT)												
Supply												
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic Production	-	-	-	-	-	-	-	-	-	-	-	-
Import	7,470.22	7,335.82	7,546.54	8,113.14	8,711.57	9,298.54	10,002.22	10,341.24	9,685.51	8,889.64	8,331.65	8,193.10
Total Supply	7,470.22	7,335.82	7,546.54	8,113.14	8,711.57	9,298.54	10,002.22	10,341.24	9,685.51	8,889.64	8,331.65	8,193.10
Use												
Household	7,470.22	6,777.98	7,029.93	7,302.60	7,593.23	8,046.82	8,728.14	8,932.34	9,009.20	8,411.72	7,783.34	7,621.00
Industries*	-	557.84	516.61	810.54	1,118.34	1,251.72	1,274.08	1,408.96	676.31	477.92	548.31	572.10
Total Use	7,470.22	7,335.82	7,546.54	8,113.14	8,711.57	9,298.54	10,002.22	10,341.30	9,685.51	8,889.64	8,331.65	8,193.10

Note: Information on imports are sourced from Department of Trade, MoEA

*Industrial LPG usage couldn't be estimated between 2010/12 as there are no proper records of information

Table 15: Supply & Use of LPG

(in percent)												
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic Production	-	-	-	-	-	-	-	-	-	-	-	-
Import	0.80	(1.80)	2.87	7.51	7.38	6.74	7.57	3.39	(6.34)	(8.22)	(6.28)	(1.66)
Total Supply	0.80	(1.80)	2.87	7.51	7.38	6.74	7.57	3.39	(6.34)	(8.22)	(6.28)	(1.66)
Use												
Household	0.80	(9.27)	3.72	3.88	3.98	5.97	8.47	2.34	0.86	(6.63)	(7.47)	(2.09)
Industries			(7.39)	56.90	37.97	11.93	1.79	10.59	(52.00)	(29.33)	14.73	4.34
Total Use	0.80	(1.80)	2.87	7.51	7.38	6.74	7.57	3.39	(6.34)	(8.22)	(6.28)	(1.66)

Table 16: Supply & Use of LPG

(In Million Nu.)														
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Supply														
Domestic Production	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Import	138.15	190.05	193.33	223.35	223.74	236.10	254.94	292.22	322.68	349.73	353.06	472.16	537.04	505.97
Total Supply	138.15	190.05	193.33	223.35	223.74	236.10	254.94	292.22	322.68	349.73	353.06	472.16	537.04	505.97
Losses														
Trade and Transport margin (TTM)	102.49	70.90	69.71	81.55	45.65	49.19	46.48	47.67	46.78	59.07	78.33	104.75	119.14	91.87
Total Supply (at market price)	240.64	260.95	263.04	304.90	269.39	285.29	301.42	339.89	369.46	408.80	431.39	576.91	656.19	597.84
Use	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Household	138.15	190.05	193.33	177.10	182.95	190.00	198.26	222.50	245.13	331.52	350.78	435.46	528.85	530.31
Industries	-	-	-	46.25	40.79	46.10	56.68	69.72	77.55	77.28	78.28	104.23	127.34	67.53
Total use (3+4)	138.15	190.05	193.33	223.35	223.74	236.10	254.94	292.22	322.68	408.80	429.06	539.68	656.19	597.84

Table 17: Supply and Consumption of Fuelwood

(m3)										
SUPPLY	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1. Supply by NRDCCL	35,988.34	40,491.32	38,184.81	34,451.54	32,949.91	37,537.54	32,124.38	44,477.19	43,850.96	44,102.01
2. Supply by DoFPS, MoAF	67,415.00	85,002.99	102,109.87	97,744.08	47,367.00	58,055.00	56,884.48	41,199.61	55,456.27	78,464.89
Total Supply (1+2)	103,403.34	125,494.31	140,294.68	132,195.62	80,316.91	95,592.54	89,008.86	85,676.80	99,307.23	122,566.90
USE										
3. NRDCCL Disposal (3.1+3.2)	35,988.34	40,491.32	38,184.81	34,451.54	32,949.91	37,537.54	32,124.38	44,477.19	43,850.96	44,102.01
3.1 Household	4,930.79	5,547.75	5,231.73	4,720.23	4,283.49	4,879.88	4,176.17	5,782.03	5,700.62	21,609.98
3.2 Industries	31,057.55	34,943.57	32,953.08	29,731.31	28,666.42	32,657.66	27,948.21	38,695.16	38,150.34	22,492.03
4. DoFPS, MoAF Disposal (4.1+4.2)	68,301.44	85,002.99	102,109.87	97,744.08	47,367.00	58,055.00	56,884.48	41,199.61	55,456.27	78,464.89
4.1 Household (4.1.1+4.1.2)	36,995.10	48,367.55	60,662.19	57,395.31	35,473.00	40,444.00	43,198.92	18,801.66	18,801.66	43,940.34
4.2 Industries	31,306.34	36,635.43	41,447.68	40,348.76	11,894.00	17,611.00	13,685.56	22,397.95	22,397.95	34,524.55
Total Household	41,925.89	53,915.30	65,893.92	62,115.54	39,756.49	45,323.88	47,375.09	24,583.69	24,502.28	65,550.32
Total Industries	62,363.89	71,579.01	74,400.76	70,080.07	40,560.42	50,268.66	41,633.77	61,093.11	60,548.29	57,016.58
Total Use	104,289.78	125,494.31	140,294.68	132,195.62	80,316.91	95,592.54	89,008.86	85,676.80	85,050.57	122,566.90

Table 18: Supply and Consumption of Fuelwood

(percentage)										
SUPPLY	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1. Supply by NRDCCL	34.80	32.27	27.22	26.06	41.02	39.27	36.09	51.91	44.16	35.98
2. Supply by DoFPS, MoAF	65.20	67.73	72.78	73.94	58.98	60.73	63.91	48.09	55.84	64.02
Total Supply (1+2)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
USE										
3. NRDCCL Disposal (3.1+3.2)	34.51	32.27	27.22	26.06	41.02	39.27	36.09	51.91	51.56	35.98
3.1 Household	4.73	4.42	3.73	3.57	5.33	5.10	4.69	6.75	6.70	17.63
3.2 Industries	29.78	27.84	23.49	22.49	35.69	34.16	31.40	45.16	44.86	18.35
4. DoFPS, MoAF Disposal (4.1+4.2)	65.49	67.73	72.78	73.94	58.98	60.73	63.91	48.09	65.20	64.02
4.1 Household	35.47	38.54	43.24	43.42	44.17	42.31	48.53	21.94	22.11	35.85
4.2 Industries	30.02	29.19	29.54	30.52	14.81	18.42	15.38	26.14	26.33	28.17
Total Household	40.20	42.96	46.97	46.99	49.50	47.41	53.23	28.69	28.81	53.48
Total Industries	59.80	57.04	53.03	53.01	50.50	52.59	46.77	71.31	71.19	46.52
Total Use (3+4)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 19: Physical account for Briquette production

(KG)												
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Stock (1+2)	347,610.00	407,610.00	374,390.00	307,240.00	270,210.00	266,340.00	327,420.00	373,440.00	356,850.00	175,230.00	139,800.00	47,601.27
1. Opening Stock	10,140.00	3,270.00	6,930.00	58,240.00	36,330.00	3,180.00	81,000.00	112,380.00	177,150.00	22,290.00	7,410.00	47,601.27
2. Additions to stock (via production)	337,470.00	404,340.00	367,460.00	249,000.00	233,880.00	263,160.00	246,420.00	261,060.00	179,700.00	152,940.00	132,390.00	0.00
Total Reductions in stock (3)	344,250.00	400,410.00	316,150.00	270,910.00	266,580.00	185,340.00	215,040.00	196,290.00	334,560.00	167,820.00	92,198.73	47,601.27
3. Disposal	344,250.00	400,410.00	316,150.00	270,910.00	266,580.00	185,340.00	215,040.00	196,290.00	334,560.00	167,820.00	92,198.73	47,601.27
Closing stock (1+2-3)	3,360.00	7,200.00	58,240.00	36,330.00	3,630.00	81,000.00	112,380.00	177,150.00	22,290.00	7,410.00	47,601.27	0.00

Table 20: Physical account for Timber production

(Cft.)												
SUPPLY	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		
1. Supply by NRDCCL	1,871,928.76	1,954,917.00	1,770,200.20	1,567,282.39	1,849,307.60	2,154,096.96	2,664,408.52	1,866,326.13	2,057,038.83	2,444,646.57		
2. Supply by DoFPS, MoAF	2,794,325.07	14,233,257.87	6,529,630.09	5,172,512.81	3,099,780.99	7,146,269.25	5,288,118.53	2,699,310.52	2,513,907.29	5,160,963.71		
Total Supply (1+2)	4,666,253.83	16,188,174.87	8,299,830.29	6,739,795.20	4,949,088.59	9,300,366.21	7,952,527.05	4,565,636.65	4,570,946.12	7,605,610.28		
USE												
3. NRDCCL	1,871,928.76	1,954,917.00	1,770,200.20	1,567,282.39	1,849,307.60	2,154,096.96	2,664,408.52	1,866,326.13	2,057,038.83	2,444,646.57		
3.1. Commercial	1,871,928.76	1,954,917.00	1,770,200.20	1,567,282.39	1,849,307.60	2,154,096.96	2,664,408.52	1,866,326.13	2,057,038.83	2,444,646.57		
4. DoFPS, MoAF	2,794,325.07	14,233,257.87	6,529,630.09	5,172,512.81	3,099,781.03	7,146,269.25	5,288,118.53	2,699,310.52	2,513,907.29	5,160,963.71		
4.1. Commercial	1,068,819.59	1,506,804.07	2,472,601.66	1,408,914.38	537,066.00	2014128.226	1479774.923	1323792.365	1,301,247.81	2,536,719.15		
4.2. Concessional	1,719,928.12	12,706,721.83	4,015,903.40	3,588,205.42	2,553,111.55	5132141.022	3808343.605	1375518.159	1,212,659.48	2,624,244.57		
4.3. Free	5,577.36	19,731.97	41,125.03	175,393.01	9,603.48	-	-	-	-	-		
Total Use (3+4)	4,666,253.83	16,188,174.87	8,299,830.29	6,739,795.20	4,949,088.63	9,300,366.21	7,952,527.05	4,565,636.65	4,570,946.12	7,605,610.28		

Table 21: Physical account for Sand production

	(Million Cft.)										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Stock (1+2)	16.81	15.24	15.54	17.94	21.21	19.31	21.21	25.05	24.31	35.41	20.11
1. Opening Stock	2.31	3.02	4.29	3.46	2.62	1.59	2.94	3.91	4.74	1.71	2.84
2. Additions to stock (via production)	14.50	12.22	11.25	14.48	18.59	17.71	18.27	21.13	19.56	33.70	17.28
Total Reductions in stock (3)	13.26	10.71	11.66	15.32	17.69	15.96	16.93	20.30	22.59	32.58	16.85
3. Disposal	13.26	10.71	11.66	15.32	17.69	15.96	16.93	20.30	22.59	32.58	16.85
Closing stock (1+2-3)	3.02	4.29	3.46	2.62	1.59	2.94	3.91	4.74	1.71	2.84	3.27

Table 22: Physical Asset Account for Coal

	(Million MT)											
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opening Stock	0.84	0.74	0.66	0.54	0.45	0.33	0.17	(0.02)	(0.21)	(0.28)	-	-
Additions to Stock (+)												
Discoveries	-	-	-	-	-	-	-	-	-	-	-	-
Upward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total additions to stock	-	-	-	-	-	-	-	-	-	-	-	-
Reductions in Stock (-)												
Extractions	0.10	0.08	0.12	0.09	0.12	0.16	0.19	0.19	0.07	0.11	0.16	0.11
Catastrophic losses	-	-	-	-	-	-	-	-	-	-	-	-
Downward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total reductions in stock	0.10	0.08	0.12	0.09	0.12	0.16	0.19	0.19	0.07	0.11	0.16	0.11
Revaluations	-	-	-	-	-	-	-	-	-	-	-	-
Closing Stock	0.74	0.66	0.54	0.45	0.33	0.17	(0.02)	(0.21)	(0.28)	(0.40)	-	-

Table 23: Physical Asset Account for Dolomite

	(Million MT)											
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opening Stock	14,540.18	14,538.68	14,536.94	14,534.90	14,532.24	14,529.87	14,527.33	14,524.51	14,521.49	14,520.25	14,518.21	14,515.45
Additions to Stock												
Discoveries	-	-	-	-	-	-	-	-	-	-	-	-
Upward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total additions to stock	-	-	-	-	-	-	-	-	-	-	-	-
Reductions in Stock												
Extractions	1.50	1.74	2.04	2.66	2.37	2.54	2.82	3.03	1.23	2.04	2.77	2.94
Catastrophic losses	-	-	-	-	-	-	-	-	-	-	-	-
Downward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total reductions in stock	1.50	1.74	2.04	2.66	2.37	2.54	2.82	3.03	1.23	2.04	2.77	2.94
Revaluations	-	-	-	-	-	-	-	-	-	-	-	-
Closing Stock	14,538.68	14,536.94	14,534.90	14,532.24	14,529.87	14,527.33	14,524.51	14,521.49	14,520.25	14,518.21	14,515.45	14,512.51

Table 24: Physical Asset Account for Limestone

	(Million MT)											
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Opening Stock	162.62	161.61	160.49	159.64	158.38	157.14	155.80	154.26	153.44	152.15	151.18	
Additions to Stock												
Discoveries	-	-	-	-	-	-	-	-	-	-	-	
Upward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	
Total additions to stock	-	-	-	-	-	-	-	-	-	-	-	
Reductions in Stock												
Extractions	1.01	1.12	0.85	1.26	1.24	1.34	1.55	0.82	1.30	0.96	1.23	
Catastrophic losses	-	-	-	-	-	-	-	-	-	-	-	
Downward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	
Total reductions in stock	1.01	1.12	0.85	1.26	1.24	1.34	1.55	0.82	1.30	0.96	1.23	
Revaluations	-	-	-	-	-	-	-	-	-	-	-	
Closing Stock	161.61	160.49	159.64	158.38	157.14	155.80	154.26	153.44	152.15	151.18	149.95	

Table 25: Physical Asset Account for Gypsum

<i>(Million MT)</i>											
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opening Stock	133.22	132.87	132.46	132.07	131.75	131.42	130.96	130.47	130.14	129.74	129.34
Additions to Stock											
Discoveries	-	-	-	-	-	-	-	-	-	-	-
Upward re-appraisals	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-
Total additions to stock	-	-	-	-	-	-	-	-	-	-	-
Reductions in Stock											
Extractions	0.35	0.41	0.39	0.32	0.33	0.46	0.49	0.33	0.40	0.40	1.10
Catastrophic losses	-	-	-	-	-	-	-	-	-	-	-
Downward re-appraisals	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-
Total reductions in stock	0.35	0.41	0.39	0.32	0.33	0.46	0.49	0.33	0.40	0.40	1.10
Revaluations	-	-	-	-	-	-	-	-	-	-	-
Closing Stock	132.87	132.46	132.07	131.75	131.42	130.96	130.47	130.14	129.74	129.34	128.24

Table 26: Physical Asset Account for Quartzite

<i>(Million MT)</i>												
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opening Stock	4.97	4.88	4.79	4.71	4.63	4.54	4.36	4.21	4.07	3.92	3.80	3.65
Additions to Stock												
Discoveries	-	-	-	-	-	-	-	-	-	-	-	-
Upward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total additions to stock	-	-	-	-	-	-	-	-	-	-	-	-
Reductions in Stock												
Extractions	0.09	0.09	0.08	0.08	0.09	0.18	0.15	0.14	0.15	0.12	0.15	0.24
Catastrophic losses	-	-	-	-	-	-	-	-	-	-	-	-
Downward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total reductions in stock	0.09	0.09	0.08	0.08	0.09	0.18	0.15	0.14	0.15	0.12	0.15	0.24
Revaluations	-	-	-	-	-	-	-	-	-	-	-	-
Closing Stock	4.88	4.79	4.71	4.63	4.54	4.36	4.21	4.07	3.92	3.80	3.65	3.41

Table 27: Physical Asset Account for Talc

<i>(Million MT)</i>												
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opening Stock	0.08	0.06	0.05	0.04	0.03	0.03	0.02	(0.05)	(0.05)	-	-	-
Additions to Stock												
Discoveries	-	-	-	-	-	-	-	-	-	-	-	-
Upward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total additions to stock	-	-	-	-	-	-	-	-	-	-	-	-
Reductions in Stock												
Extractions	0.0200	0.0100	0.0100	0.0100	0.0000	0.0100	0.0700	0.0014	0.0010	0.0007	0.0007	0.0004
Catastrophic losses	-	-	-	-	-	-	-	-	-	-	-	-
Downward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total reductions in stock	0.02	0.01	0.01	0.01	-	0.01	0.07	0.00	0.001	0.001	0.001	0.000
Revaluations	-	-	-	-	-	-	-	-	-	-	-	-
Closing Stock	0.06	0.05	0.04	0.03	0.03	0.02	(0.05)	(0.05)	(0.05)	-	-	1.00

Table 28: Physical Asset Account for Iron-ore

<i>(Million MT)</i>												
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opening Stock	2.69	2.69	2.67	2.65	2.61	2.58	2.55	2.51	2.47	2.46	2.43	2.43
Additions to Stock												
Discoveries	-	-	-	-	-	-	-	-	-	-	-	-
Upward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total additions to stock	-	-	-	-	-	-	-	-	-	-	-	-
Reductions in Stock												
Extractions	-	0.02	0.02	0.04	0.03	0.03	0.04	0.04	0.01	0.03	0.00	0.01
Catastrophic losses	-	-	-	-	-	-	-	-	-	-	-	-
Downward re-appraisals	-	-	-	-	-	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-	-	-	-	-	-
Total reductions in stock	-	0.02	0.02	0.04	0.03	0.03	0.04	0.04	0.01	0.03	0.00	0.01
Revaluations	-	-	-	-	-	-	-	-	-	-	-	-
Closing Stock	2.69	2.67	2.65	2.61	2.58	2.55	2.51	2.47	2.46	2.43	2.43	2.41

Table 29: Monetary Asset Account for Coal

<i>(Million Nu.)</i>							
	Extraction year	Quantity	Resource rent per unit	Total resource rent from extraction	Discount rate, 12 per cent	Discount factor	Net present value (NPV) of extraction
0	2020	0.12	2,247.83	277.81	0.12	1.00	277.81
1	2021	0.12	2,247.83	277.81	0.12	0.89	248.05
2	2022	0.12	2,247.83	277.81	0.12	0.80	221.47
3	2023	0.12	2,247.83	277.81	0.12	0.71	197.74
4	2024	0.12	2,247.83	277.81	0.12	0.64	176.56
5	2025	0.12	2,247.83	277.81	0.12	0.57	157.64
6	2026	0.12	2,247.83	277.81	0.12	0.51	140.75

Table 30: Monetary Asset Account for Dolomite

<i>(Million Nu.)</i>							
	Extraction year	Quantity	Resource rent per unit	Total resource rent from extraction	Discount rate, 12 per cent	Discount factor	Net present value (NPV) of extraction
0	2021	967.88	293.99	284,543.81	0.12	1.00	284,543.81
1	2022	967.88	293.99	284,543.81	0.12	0.89	254,056.97
2	2022	967.88	293.99	284,543.81	0.12	0.80	226,836.58
3	2023	967.88	293.99	284,543.81	0.12	0.71	202,532.66
4	2023	967.88	293.99	284,543.81	0.12	0.64	180,832.73
5	2024	967.88	293.99	284,543.81	0.12	0.57	161,457.80
6	2024	967.88	293.99	284,543.81	0.12	0.51	144,158.75
7	2025	967.88	293.99	284,543.81	0.12	0.45	128,713.17
8	2025	967.88	293.99	284,543.81	0.12	0.40	114,922.47
9	2026	967.88	293.99	284,543.81	0.12	0.36	102,609.35

Table 31: Monetary Asset Account for Limestone

<i>(Million Nu.)</i>							
	Extraction year	Quantity	Resource rent per unit	Total resource rent from extraction	Discount rate, 12 per cent	Discount factor	Net present value (NPV) of extraction
0	2021	10.14	5,019.86	50,916.63	0.12	1.00	50,916.63
1	2022	10.14	5,019.86	50,916.63	0.12	0.89	45,461.27
2	2023	10.14	5,019.86	50,916.63	0.12	0.80	40,590.42
3	2024	10.14	5,019.86	50,916.63	0.12	0.71	36,241.45
4	2025	10.14	5,019.86	50,916.63	0.12	0.64	32,358.44
5	2026	10.14	5,019.86	50,916.63	0.12	0.57	28,891.46
6	2027	10.14	5,019.86	50,916.63	0.12	0.51	25,795.95
7	2028	10.14	5,019.86	50,916.63	0.12	0.45	23,032.10
8	2029	10.14	5,019.86	50,916.63	0.12	0.40	20,564.37
9	2030	10.14	5,019.86	50,916.63	0.12	0.36	18,361.05

Table 32 Monetary Asset Account for Gypsum

<i>(Million Nu.)</i>							
	Extraction year	Quantity	Resource rent per unit	Total resource rent from extraction	Discount rate, 12 per cent	Discount factor	Net present value (NPV) of extraction
0	2021	8.65	813.46	7,035.69	0.12	1.00	7,035.69
1	2022	8.65	813.46	7,035.69	0.12	0.89	6,281.86
2	2023	8.65	813.46	7,035.69	0.12	0.80	5,608.81
3	2024	8.65	813.46	7,035.69	0.12	0.71	5,007.86
4	2025	8.65	813.46	7,035.69	0.12	0.64	4,471.31
5	2026	8.65	813.46	7,035.69	0.12	0.57	3,992.24
6	2027	8.65	813.46	7,035.69	0.12	0.51	3,564.50
7	2028	8.65	813.46	7,035.69	0.12	0.45	3,182.59
8	2029	8.65	813.46	7,035.69	0.12	0.40	2,841.60
9	2030	8.65	813.46	7,035.69	0.12	0.36	2,537.14

Table 33: Monetary Asset Account for Quartzite

<i>(Million Nu.)</i>							
	Extraction year	Quantity	Resource rent per unit	Total resource rent from extraction	Discount rate, 12 per cent	Discount factor	Net present value (NPV) of extraction
0	2021	0.25	3,220.00	815.73	0.12	1.00	815.73
1	2022	0.25	3,220.00	815.73	0.12	0.89	728.33
2	2023	0.25	3,220.00	815.73	0.12	0.80	650.29
3	2024	0.25	3,220.00	815.73	0.12	0.71	580.62
4	2025	0.25	3,220.00	815.73	0.12	0.64	518.41
5	2026	0.25	3,220.00	815.73	0.12	0.57	462.87
6	2027	0.25	3,220.00	815.73	0.12	0.51	413.27
7	2028	0.25	3,220.00	815.73	0.12	0.45	368.99
8	2029	0.25	3,220.00	815.73	0.12	0.40	329.46
9	2030	0.25	3,220.00	815.73	0.12	0.36	294.16

Table 34: Monetary Asset Account for Talc

(Million Nu.)							
	Extraction year	Quantity	Resource rent per unit	Total resource rent from extraction	Discount rate, 12 per cent	Discount factor	Net present value (NPV) of extraction
0	2021	0.02	468.50	7.87	0.12	1.00	7.87
1	2022	0.02	468.50	7.87	0.12	0.89	7.03
2	2023	0.02	468.50	7.87	0.12	0.80	6.28
3	2024	0.02	468.50	7.87	0.12	0.71	5.60
4	2025	0.02	468.50	7.87	0.12	0.64	5.00
5	2026	0.02	468.50	7.87	0.12	0.57	4.47

Table 35: Monetary Asset Account for Iron-ore

(Million Nu.)							
	Extraction year	Quantity	Resource rent per unit	Total resource rent from extraction	Discount rate, 12 per cent	Discount factor	Net present value (NPV) of extraction
0	2021	0.16	468.50	75.88	0.12	1.00	75.88
1	2022	0.16	468.50	75.88	0.12	0.89	67.75
2	2023	0.16	468.50	75.88	0.12	0.80	60.49
3	2024	0.16	468.50	75.88	0.12	0.71	54.01
4	2025	0.16	468.50	75.88	0.12	0.64	48.22
5	2026	0.16	468.50	75.88	0.12	0.57	43.06
6	2027	0.16	468.50	75.88	0.12	0.51	38.44
7	2028	0.16	468.50	75.88	0.12	0.45	34.33
8	2029	0.16	468.50	75.88	0.12	0.40	30.65
9	2030	0.16	468.50	75.88	0.12	0.36	27.36

Table 36: Energy supply, consumption and trade

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Supply, Consumption & Trade												
Production	665.44	717.87	713.62	742.18	612.73	792.51	707.30	871.51	1,088.77	1,005.75	1,100.92	1,015.00
Hydro-electricity	586.97	649.17	615.97	666.03	512.35	663.83	598.19	762.35	979.30	930.55	979.30	905.90
Wind	-	-	-	-	0.06	0.10	0.17	0.22	0.10	-	-	0.02
Solar	-	-	-	-	-	-	-	-	-	-	-	0.05
Coal	66.50	52.36	82.09	57.36	79.33	108.79	108.79	108.79	96.04	75.13	106.82	76.75
Firewood	11.84	16.19	15.41	18.70	20.91	19.70	0.05	0.05	13.27	0.06	14.80	32.29
Briquette	0.13	0.15	0.14	0.09	0.09	0.10	0.10	0.10	0.07	0.02	-	-
Consumption	340.95	388.57	414.16	412.57	443.81	491.19	521.70	531.69	461.33	534.95	682.61	834.53
Hydro-electricity	149.53	177.25	190.92	190.91	187.21	200.33	200.33	200.33	218.40	244.71	314.19	506.96
Wind	-	-	-	-	0.06	0.10	0.17	0.22	0.10	-	-	0.02
Solar	-	-	-	-	-	-	-	-	-	-	-	0.05
Diesel	108.90	109.42	104.82	109.12	113.96	125.66	140.12	133.94	90.10	98.60	94.80	137.40
Petrol	23.70	24.60	25.49	27.60	29.30	31.74	38.24	41.45	27.94	26.74	29.90	45.47
Kerosene	4.96	4.46	5.09	4.12	4.28	3.64	3.09	2.48	1.54	1.42	0.98	0.52
ATF	1.76	2.69	3.02	2.83	2.81	3.39	4.15	4.04	3.39	0.99	1.96	2.89
LPG	5.03	4.94	5.08	5.46	5.87	10.50	9.66	10.09	10.50	10.37	9.41	9.26
Coal	35.11	48.86	64.20	53.72	79.33	96.04	125.83	124.45	96.04	152.02	216.56	99.67
Firewood	11.84	16.19	15.41	18.70	20.91	19.70	0.03	14.60	13.27	0.06	14.80	32.29
Briquette	0.13	0.15	0.14	0.09	0.09	0.10	0.09	0.07	0.07	0.06	-	0.02
Export	471.53	507.90	466.52	496.64	511.28	453.33	376.06	608.04	797.19	710.70	631.40	455.62
Electricity	420.95	477.87	433.73	476.51	496.93	435.81	348.55	528.47	788.98	694.37	622.55	442.29
Diesel	21.98	19.54	12.89	11.60	6.08	3.76	5.64	7.68	0.52	11.91	2.88	4.26
Petrol	4.92	5.69	5.85	5.59	5.60	6.33	7.63	11.43	7.44	3.88	5.96	9.06
Coal	23.68	4.80	14.05	2.94	2.67	7.43	14.23	60.45	0.25	0.55	0.01	-
Import	211.42	220.44	219.63	236.81	236.44	261.12	350.49	337.13	213.34	224.44	253.47	332.91
Electricity	5.10	9.65	16.49	14.03	9.73	17.89	25.85	22.85	7.03	8.43	21.27	53.48
Diesel	108.90	109.42	104.82	109.12	113.96	125.66	140.12	133.94	90.10	98.60	94.80	137.40
Petrol	23.70	24.60	25.49	27.60	29.30	31.74	38.24	41.45	27.94	26.74	29.90	45.47
Kerosene	4.78	4.28	4.88	3.96	4.11	3.64	-	-	1.53	1.42	0.98	0.52
ATF	1.76	2.69	3.02	2.83	2.81	3.39	38.24	41.45	1.44	0.99	1.96	2.89
LPG	8.44	8.29	8.53	9.17	9.84	10.50	3.09	2.48	10.94	9.83	9.41	9.26
Coal	58.74	61.51	56.40	70.11	66.70	68.29	3.09	2.48	74.37	78.45	95.15	83.91
Total Supply	876.86	938.32	933.24	978.99	849.17	1,053.63	1,057.79	1,208.65	1,302.11	1,230.19	1,354.39	1,347.92

Table 37: Physical supply table for energy

Unit: As specified.	PRODUCTION		Accumulation	Flows from RoW Imports	Flows from the Environment	Total Supply
	Industries	Households				
I. Energy from natural inputs						
Inputs of energy from renewable sources					10,536.45	10,536.45
(1) Hydro (GWh)					10,535.60	10,535.60
(2) Diesel(GWh)					0.0100	0.01
(3) Wind (GWh)					0.23	0.23
(4) Solar (GWh)					0.61	0.61
Natural resource inputs					200,605.28	200,605.28
(1) Coal (MT)					113,950.48	113,950.48
1.1) Bituminous / Sub-Bituminous					-	-
1.2) Anthracite					-	-
1.3) Coke/Semi-coke of coal					113,950.48	113,950.48
1.4) Other coal					-	-
(2) Fuelwood (MT)					86,654.80	86,654.80
(3) Briquette (MT)					-	-
Total energy from natural inputs					211,141.73	173,494.05
II. Energy products						
Production of energy products by SIEC* class						
(1) Coal (MT)	113,950.48			147,983.38		261,933.86
1.1) Bituminous / Sub-Bituminous				70,869		70,868.59
1.2) Anthracite	-			77.7		77.70
1.3) Coke/Semi-coke of coal	113,950.48			77,002		190,952.64
1.4) Other coal				34.93		34.93
(2) Diesel (KL)	-			159,432.29		159,432.29
2.1) Diesel (HSD)	-			153,774.50		153,774.50
2.2) Light Diesel Oil (LDO)	-			5,657.79		5,657.79
(3) Petrol (KL)				55,806.92		55,806.92
(4) Aviation Turbine Fuel (ATF) (KL)	-			3,394.00		3,394.00
(5) Kerosene (KL)	-					601.54
5.1) Kerosene (SK Oil)	-			601.54		601.54
5.2) Kerosene (SK Oil-Industrial)	-					-
(6) Furnace Oil (FO) (KL)	-			2,705.19		2,705.19
(7) LPG (MT)	-			8,193.10		8,193.10
(8) Electricity (GWh)	10,417.82			622.00		11,039.82
(9) Biogas for cooking (MT)	-			-		-
(10) Fuelwood (MT)	86,654.80			-		86,654.80
(11) Briquette (MT)**	47.60			-		47.60
Total use of energy products						589,809.12
III. Energy residuals***						
Losses during extraction (GWh)	-	-				-
Losses during distribution (GWh)		-				-
Losses during transformation (GWh)	117.78	-				117.78
Other energy residuals (GWh)	-	-				-
Total energy from residuals						

Note: *Standard International Energy Classification, ***Energy losses relate to only hydro-electricity

Table 38: Physical use table for energy

Unit: As specified.	USE		Accumulation	Flows to RoW Exports	Flows to the Environment	Total Use
	Industries	Households				
I. Energy from natural inputs						
Inputs of energy from renewable sources	10,535.84					11,390.37
(1) Hydro (GWh)	10,535.60					10,535.60
(2) Solar (GWh)	0.01					0.01
(3) Wind (GWh)	0.23					0.23
(4) Solar (GWh)	0.61					0.61
Natural resource inputs	200,605.28					200,605.28
(1) Coal (MT)	113,950.48					113,950.48
1.1) Bituminous / Sub-Bituminous	-					-
1.2) Anthracite	-					-
1.3) Coke/Semi-coke of coal	113,950.48					113,950.48
1.4) Other coal	-					-
(2) Fuelwood (MT)	86,654.80					86,654.80
(3) Briquette (MT)	-					-
Total energy from natural inputs						
II. Energy products						
Production of energy products by ISIC* class						
(1) Coal (MT)	261,933.86	-		-		261,933.86
1.1) Bituminous / Sub-Bituminous	70,868.59					70,868.59
1.2) Anthracite	77.70			-		77.70
1.3) Coke/Semi-coke of coal	190,952.64		-			190,952.64
1.4) Other coal	34.93		-			34.93
(2) Diesel (KL)**	146,263.81	8,395.39		4,773.09		159,432.29
2.1) Diesel	141,073.33	8,097.46		4,603.71		153,774.50
2.2) Light Diesel Oil (LDO)	5,190.48	297.93		169.38		5,657.79
(3) Petrol (KL)***	16,582.74	28,097.84		11,126.34		55,806.92
(4) Aviation Turbine Fuel (ATF)	3,394.00					3,394.00
(5) Kerosene (KL)	-					601.54
5.1) Kerosene (SK Oil)	-	601.54				601.54
5.2) Kerosene (SK Oil-Industrial)	-					-
(6) Furnace Oil (FO) (KL)	2,705.19					2,705.19
(7) LPG (MT)	658.36	7,534.75				8,193.10
(8) Electricity (GWh)	5,531.98	364.00		5,143.84		11,039.82
(9) Biogas for cooking (MT)						-
(10) Fuelwood (MT)	70,018.86	16,635.94				86,654.80
(10) Briquette (MT)		47.60				47.60
Total use of energy products						589,809.12
III. Energy residuals						
Losses during extraction (GWh)					-	-
Losses during distribution (GWh)						-
Losses during transformation (GWh)					117.78	117.78
Other energy residuals (GWh)					-	-
Total energy from residuals						

Note: *Standard International Energy Classification, ***Energy losses relate to only hydro-electricity

Table 39: Physical Supply table for energy

Unit: KToE	PRODUCTION		Accumulation	Flows from RoW Imports	Flows from the environment	Total Supply
	Industries	Households				
I. Energy from natural inputs						
Inputs of energy from renewable sources					905.92	905.92
(1) Hydro					905.90	905.90
(2) Solar					0.00	0.00
(3) Wind					0.02	0.02
Natural resource inputs					109.03	109.03
(1) Coal					76.75	76.75
1.1) Bituminous / Sub-Bituminous					-	-
1.2) Anthracite					-	-
1.3) Coke/Semi-coke of coal					76.75	76.75
1.4) Other coal					-	-
(2) Fuelwood					32.29	32.29
(3) Briquettee					-	-
Total energy from natural inputs					1,014.95	1,014.95
II. Energy products						
Production of energy products by SIEC* class						
(1) Coal	76.75			83.91		160.66
1.1) Bituminous / Sub-Bituminous	-			31.99		31.99
1.2) Anthracite	-			0.05		0.05
1.3) Coke/Semi-coke of coal	76.75			51.86		128.61
1.4) Other coal	-			0.01		0.01
(2) Diesel	-			142.45		142.45
2.1) Diesel	-			137.40		137.40
2.2) Light Diesel Oil (LDO)	-			5.06		5.06
(3) Petrol	-			45.47		45.47
(4) Aviation Turbine Fuel (ATF)	-			2.89		2.89
(5) Kerosene	-			0.52		0.52
5.1) Kerosene (SK Oil)	-			0.52		0.52
5.2) Kerosene (SK Oil-Industrial)	-			-		-
(6) Furnace Oil (FO)	-			2.30		2.30
(7) LPG	-			9.26		9.26
(8) Electricity	895.77			53.48		949.25
(9) Biogas for cooking	-			-		-
(10) Fuelwood	32.29			-		32.29
(11) Briquette**	0.02			-		0.02
Total energy products	1,004.82			340.27		1,345.09
III. Energy residuals***						
Losses during extraction	-	-				-
Losses during distribution	-	-				-
Losses during transformation	10.13	-				10.13
Other energy residuals	-	-				-
Total energy residuals***	10.13	-				10.13
TOTAL SUPPLY	1,014.95	-	-	340.27	-	1,355.22

Table 40: Physical Use table for energy

Unit: KToE			Accumulation	Flows to RoW Exports	Flows to the environment	Total Use
	Industries	Households				
I. Energy from natural inputs						
Inputs of energy from renewable sources	905.92					905.92
(1) Hydro	905.90					905.90
(2) Solar	0.00					0.00
(3) Wind	0.02					0.02
Natural resource inputs	-					109.03
(1) Coal	-					76.75
1.1) Bituminous / Sub-Bituminous	-					-
1.2) Anthracite	-					-
1.3) Coke/Semi-coke of coal	76.75					76.75
1.4) Other coal	-					-
(2) Fuelwood	32.29					32.29
(3) Briquettee	-					-
Total energy from natural inputs	905.92					1,014.95
II. Energy products						
Production of energy products by SIEC* class						
(1) Coal	160.66	-	-	-		160.66
1.1) Bituminous / Sub-Bituminous	31.99	-	-	-		31.99
1.2) Anthracite	0.05	-	-	-		0.05
1.3) Coke/Semi-coke of coal	128.61	-	-	-		128.61
1.4) Other coal	0.01	-	-	-		0.01
(2) Diesel	130.69	7.50	-	4.26		142.45
2.1) Diesel	126.05	7.24	-	4.11		137.40
2.2) Light Diesel Oil (LDO)	4.64	0.27	-	0.15		5.06
(3) Petrol	13.51	22.89	-	9.06		45.47
(4) Aviation Turbine Fuel (ATF)	2.89	-	-	-		2.89
(5) Kerosene	-	0.52	-	-		0.52
5.1) Kerosene (SK Oil)	-	0.52	-	-		0.52
5.2) Kerosene (SK Oil-Industrial)	-	-	-	-		-
(6) Furnace Oil (FO)	2.30	-	-	-		2.30
(7) LPG	0.74	8.51	-	-		9.26
(8) Electricity	475.66	31.30	-	442.29		949.25
(9) Biogas for cooking	-	-	-	-		-
(10) Fuelwood	26.09	6.20	-	-		32.29
(11) Briquette	-	0.02	-	-		0.02
Total use of energy products	786.45	76.94	-	455.62		1,345.09
III. Energy residuals						
Losses during extraction					-	-
Losses during distribution					-	-
Losses during transformation					10.13	10.13
Other energy residuals					-	-
Total energy residuals					-	10.13
TOTAL USE	786.45	76.94	-	455.62	-	1,355.22

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