

# Chapter 2

## Energy Balance Table

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## Chapter 2

### Energy Balance Table

The energy balance table provides data on the supply and demand flow of all energy products as well as on the production, import, export, transformation, and consumption within the national territory. It is also widely used in the estimation of total energy supply, forecasting, and the study of substitution and conservation.

This chapter will (i) introduce the concept of the Cambodia energy balance table, (ii) explain the estimation method for missing data, and (iii) present the Cambodia energy balance table from 2010 to 2015.

#### 2.1 Basic Concept of the Energy Balance Table

The energy balance table is an accounting framework for the compilation and reconciliation of data on all energy products' supply and demand within the national territory of a given country during a reference period (usually a year). It expresses all forms of energy in a common accounting unit and shows the relationship between the inputs to and the outputs from the energy transformation processes. It should be as complete as possible so that all of the energy flows are accounted for (UNDESA, 2015).

The energy balance table is a matrix showing the relationship between energy products (represented in columns) and energy flows (represented in rows). A column refers to a group of energy products in its primary or secondary form. Each cell in this column shows a flow of energy involving this group of products, as defined by the row name.

One of the main purposes of an energy balance table is to reflect the relationships between the primary production of energy (and other energy flows such as imports/exports in the national territory), its transformation, and final consumption. Therefore, the energy balance table contains three main blocks of rows as follows:

- **Upper sector (primary energy supply)** is intended to show flows representing energy imports and exports in the national territory, as well as stock changes to provide information on the amount of energy available in the national territory during the reference period. The supply flows consist of production of primary energy products and imports of both primary and secondary energy products. The flows removing energy from the national territory are exports of primary and secondary energy

products and international bunkers. The aggregate of the balance, which is the total energy supply, is computed as:<sup>1</sup>

*Total Primary Energy Supply*

$$= \text{Indigenous Production (row 1)} + \text{Imports (row 2)} + \\ \text{Exports (row 3)} + \text{International Marine Bunkers (row 4)} + \\ \text{International Aviation Bunkers} \\ \text{(row 5)} + \text{Stock Changes (row 6)}$$

- **Middle sector (energy transfer and transformation)** is intended to show the flows of how energy is transformed, transferred, used by energy industries for own use, and lost in distribution and transmission. The power generation and petroleum refinery processes are a major activity in this sector.
- **Lower sector (final energy consumption)** is intended to show the flows of how energy is being consumed by the final sectors. The flows reflect the final energy consumption and non-energy use of energy products. Thus, it excludes deliveries of fuel and other energy products for use in transformation processes (covered in the middle block) and the use of energy products for energy needs of the energy industries (also covered in the middle block). Final energy consumers are grouped into three main categories:
  - (i) Manufacturing, construction, and non-fuel mining industries
  - (ii) Transport
  - (iii) Other (agriculture, forestry and fishing, commerce and public services, households, and other consumers).

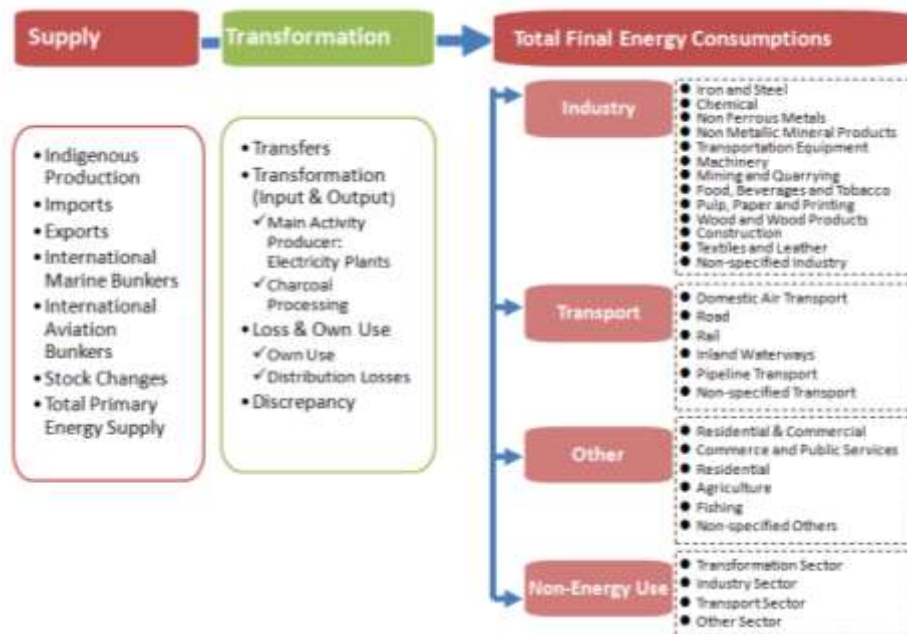
A simplified diagram of the energy flow in an energy balance table is shown in Figure 2.1.

A separate row is reserved for the statistical difference, which is defined as the difference between the total supply of energy products and its total use. The statistical difference occurs because of the discrepancy arising from various practical limitations and problems related to the collection of the data which make up supply and demand, such as sampling or other collection errors, and/or data taken from different data sources which use different time periods, different spatial coverage, different fuel specifications, or different conversions from volume to mass or from mass to energy content on the supply side and demand side of the balance.

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<sup>1</sup> Because of the sign convention in energy balances, where quantities that contribute to the supply receive positive signs whereas those that are removed receive negative signs, these parts can be added up.

Figure 2.1. Energy Flow in the Energy Balance



Source: As constructed by this study’s Working Group.

In general, the statistical difference is calculated by subtracting the demand from the net supply as follows:

$$\text{Statistical Difference} = \text{Total primary Energy Supply} + \text{Transfers} + \text{Transformation} + \text{Energy Industries Own Use} + \text{Losses} - \text{Final Consumption}$$

The energy balance table can be presented in both detailed and aggregated formats. The degree of detail depends on the policy concern, data and resource availability, and the underlying classifications used. Usually, a simplified format is used for countries of small size and/or for which the types of energy flows are few and far between, and as a result can be summarised without much information loss. The detailed definition of energy products and energy flows in the development of the Cambodia Energy Balance Table 2010–2015 is provided in Annex 6. The structuring of an energy balance table depends on the country’s energy production and consumption patterns and the level of detail that the country requires.

## 2.2 Methodology

The methodology for creating energy balances, defining and grouping energy products, as well as the statistical terminology are harmonised with internationally established standards. The data for the energy balances are based on the individual

data collected for commodity (products) balances for coal, petroleum, gas, electricity, and renewables. The data are usually expressed in physical units of the products so that, for each product, the completeness of the data can be observed from the commodity balance. The data in the commodity balance are combined to produce the energy balance.

### **2.2.1 Data collection format**

The primary energy data required for the development of the Cambodia Energy Balance Table 2010–2015 has already been discussed in Chapter 1. These data are then entered in the reporting format for each energy product, which in the case of Cambodia consists of coal; petroleum products; biomass (firewood, charcoal, biogas, and others); hydro; and electricity (including imported electricity). The format used is the questionnaire jointly developed by the Asia-Pacific Economic Cooperation (APEC) forum and the Association of Southeast Asian Nations (ASEAN) to assemble the main statistics of each product and provides a check on the completeness of the data because the questionnaire will balance the supply and use of the respective products. The APEC–ASEAN joint questionnaire consists of five questionnaires, one each for the energy products (coal, oil, gas, oil, electricity, and renewables). The questionnaire basically contains the supply data, transformation, energy industry own use, and final consumption (including non-energy use).

After completely entering the data in the APEC–ASEAN joint format, which for Cambodia excludes the natural gas questionnaire, the data are then used to generate the energy balance table through an interface programme developed by ERIA for the Cambodia Energy Statistics project.

### **2.2.2 Unit and conversion**

All entries in the energy balance table are expressed in one energy unit: kilocalorie (kcal), gigajoule (GJ), kiloton of oil equivalent (ktoe), and so on. Net calorific values are generally used in building energy balances since most current technologies are still not able to recover the latent heat, which would thus not be treated as part of a fuel's energy-providing capability. However, providing both gross and net calorific values while making clear which one is used in the energy balance is considered good practice. This allows the monitoring of technological advances with respect to recovering latent heat (DECC, n.d.).

The unit in the APEC–ASEAN joint questionnaire is the physical unit and differs between the products. The unit in the oil questionnaire is in thousand metric tons (kt), whereas the primary data are mainly in kilolitres (kl) and barrels.

Data requirements for a specific gravity are included in the oil questionnaire as well as the net calorific value to convert into an energy unit (kcal). If there is a refinery in the country, refinery intake data (in kilotons) are also requested in the questionnaire.

The unit of the coal questionnaire is also kilotons except for the gases produced from coal (coke oven gas, etc.), which are measured in gross kilocalories. For other coal products, the calorific value data is also requested in the coal questionnaire. The unit of the new and renewable questionnaire is kilotons for solid biomass (fuelwood, woodwaste, bagasse, charcoal, other biomass, industrial waste, municipal solid waste, and liquid biofuels). Other new and renewable energy is given either in kilocalories or gigawatt-hours (GWh). Additional calorific values of the products are also requested in the questionnaire.

The electricity questionnaire is in gigawatt-hours for production and consumption. For the fossil fuel input data, the unit is that of the products. A conversion of the data to kilocalories is also requested in the questionnaire. The existing installed capacity (in megawatts, MW) is also included in the questionnaire.

The Cambodia Energy Balance Table 2010–2015 adopted the energy unit of tons of oil equivalent (toe), where 1 toe is defined as  $10^7$  kcal (41.868 GJ). There are two heat values: one is net calorific value and other is gross calorific value. The difference between the two is:

- **Coal and oil:** Net calorific value is less than about 5 percent of gross calorific value.
- **Gas:** Net calorific value is less than about 10 percent of gross calorific value

The calorific content of the different energy products in Cambodia is shown in Table 2.1.

Also, the thermal efficiency of primary electricity such as hydropower generation is assumed as follows:

- Hydro: 100 percent
- Nuclear: 33 percent
- Geothermal: 10 percent
- Solar/Wind/Tide: 100 percent

**Table 2.1. Calorific Content of Energy Products in Cambodia**

Energy Products	Original Unit	Calorific Content (ton of oil equivalent)
Sub-bituminous coal	metric ton	0.4958
Additives/Oxygenates	metric ton	1.2064
Motor gasoline	metric ton	1.0442
Naphtha	metric ton	1.0539
Kerosene type jet fuel	metric ton	1.0038
Kerosene	metric ton	1.0599
Gas/Diesel oil	metric ton	1.0116
Fuel oil	metric ton	1.0073
LPG	metric ton	0.6635
Lubricants	metric ton	0.9600
Bitumen	metric ton	1.0000
Fuelwood & woodwaste	metric ton	0.3702
Charcoal	metric ton	0.7000
Electricity	MWh	0.0860

LPG = liquid petroleum gas, MWh = megawatt-hour.

Source: ERIA.

## 2.3 Treatment of Missing Data

### 2.3.1 Principles for missing data source selection

The priority data sources for the Cambodia energy balance table are identified as follows:

- **Priority 1:** Direct owner of the data
- **Priority 2:** Official statistics
- **Priority 3:** Expert estimation

Considering the time constraint in publishing the Cambodia energy statistics, the energy statistics compilation should adopt the best available data source received before March 2016.

### 2.3.2 Estimation method for missing data

Due to limited energy statistics, some of the information needed for the compilation of the energy balance table is estimated. Furthermore, the 2015 version of above-mentioned existing energy statistics had not been fully released at the time of production of the energy balance table. Therefore, the estimation method is applied to the preliminary numbers of the existing energy statistics in 2015. This section will explain the estimation method for the above-mentioned missing data.

### **2.3.2.1 Coal**

#### **Imports**

The data for coal imports are generally available from the Customs Office. In the case of Cambodia, Customs Office data prior to 2014 are not available. However, data on the consumption of coal for power generation and the cement industry are available. Since the type of coal consumed is not clarified, it is simply classified as coal in the energy balance table. Given the lack of data sources, the coal imports for 2010–2013 are estimated as the sum of coal consumption in both the power plants and the cement industry.

For 2014, the reported import data of power plants and the cement industry to the General Department of Energy (GDE) are adopted. As for 2015, as import data have not yet been reported, the coal imports are again estimated as the total consumption of the power plants and the cement industry.

#### **Stock change**

As defined, stock change reflects the difference between the opening levels on the first day of the year and closing levels on the last day of the year of stocks in the national territory held by producers, importers, energy transformation industries, and large consumers. Since data sources are lacking, the stock change is estimated by deducting consumption from the imports.

#### **Industry sector consumption**

As described in Chapter 1, GDE maintains the coal consumption data of the industry sector. However, there is no breakdown of coal consumption by the different industries. For the purpose of the energy balance table, the coal consumption of the industry sector is all allocated to the cement industries (non-metallic mineral product subsector). However, the unit coal consumption of one cement company is abnormally higher than its peers. Therefore, its coal consumption is adjusted with the peer average unit coal consumption.

#### **Calorific content**

Further clarification is needed to classify the type of coal imported. Based on the information available from Electricité du Cambodge (EDC) and GDE, the calorific content for coal in the energy balance table is measured as the weighted average calorific value of coal imports from electricity plants and cement factories in 2014; and this value is adopted for all years (2010–2015).



### **2.3.2.2 Petroleum products**

#### **Disaggregation of aggregated data**

Some petroleum companies only provided aggregated data of total sales or sector subtotals. The total sales are recorded in company-owned stations, while the sector subtotals do not specify the respective sectors.

#### **Imports**

Imports of motor gasoline, kerosene-type jet fuel, kerosene, diesel oil, fuel oil, liquid petroleum gas (LPG), and lubricants adopt the General Department of Customs and Excise of Cambodia (GDCE) data. Due to the unavailability of GDCE data, for the imports of additives (MTBE) and bitumen, the reported data of petroleum companies are adopted.

#### **International aviation bunkers/stock/final consumption**

The sales structure of reported data from petroleum companies is applied to estimate the international aviation bunkers, stock, and final consumption of motor gasoline, kerosene type jet fuel, kerosene, diesel oil, fuel oil, LPG, and lubricants. As for additives and bitumen, the reported data from petroleum companies are adopted.

### **2.3.2.3 Hydro**

#### **Indigenous production**

Gross electricity generation data are available only for the years 2010–2014. In the case of 2015, only net electricity generation data are available. Therefore, gross electricity generation is estimated using the 99.4 percent net power generation rate of a typical hydropower plant.

#### **Own use and transformation input of main activity producer**

The own use and transformation output to grid of hydropower plants are estimated using the net power generation rate of EDC from 2010 to 2014.

### **2.3.2.4 Biomass**

#### **Consumption of fuelwood**

Data for fuelwood consumption are available for 2010–2014. The lack of 2015 data is overcome by estimating the consumption of fuelwood in the residential sector,

industry, electricity generation, and charcoal production with the 2015 data for population, gross domestic product (GDP), and electricity generation from biomass. The unit consumption for the above sectors in 2014 is adopted to estimate their consumption in 2015.

### **Indigenous production and consumption of biogas**

The biogas supply and consumption data provided by GDE is estimated using the biodigester installation number each year. However, they should be estimated with the accumulated installation of biodigesters in Cambodia. The data are revised and updated with the data from the National Biodigester Programme in Cambodia.

#### **2.3.2.5 Electricity**

The missing data for electricity are the own use, transformation output, and distribution loss. In this case, the following approach is used.

#### **Own use and transformation output**

The own use and transformation output to grid of independent power producers (IPPs) and off-grid factories are estimated using the net power generation rate of EDC. As for 2015, only the net electricity generation data are available and gross electricity generation of coal-fired and oil-fired units is estimated using the 93 percent net power generation rate. In the case of hydro, as explained previously, the estimation used the 99.4 percent net power generation rate of a typical hydropower plant.

#### **Distribution loss**

The distribution loss is estimated using total electricity supply minus electricity sales and estimated own use.

### **2.4 Cambodia Energy Balance Table 2010–2015**

The energy balance tables for each of the years 2010–2015 are shown in Tables 2.2–2.7.

Table 2.2. Cambodia Energy Balance Table, 2010

Unit: ktoe

	1.	3.	4.	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.10	6.	9.	10.	12.
	Coal	Crude Oil & NGL	Petroleum Products	Motor Gasoline	Naphtha	Jet Fuel	Kerosene	Gas/Diesel Oil	Fuel Oil	LPG	Other Petroleum Products	Hydro	Others	Electricity	Total
1. Indigenous Production												3	1,723		1,726
2. Imports	22		1,558	401		47	32	771	246	43	18			133	1,713
3. Exports															
4. International Marine Bunkers															
13.1 International Aviation Bunkers			-41			-41									-41
5. Stock Changes			-48	-9		-5	0	-20	-13	0	-1				-48
6. Total Primary Energy Supply	22		1,469	392		1	32	751	233	43	17	3	1,723	133	3,350
7. Transfers															
8. Total Transformation Sector	-17		-178					-6	-172			-3	-722	83	-837
8.1 Main Activity Producer	-17		-178					-6	-172			-3	-3	83	-118
8.8 Charcoal Processing													-719		-719
9. Loss & Own Use			-2	0				-2			0	0		-22	-24
10. Discrepancy	0		-39	0		2	-8	-102	73	-1	-3	0	0	0	-39
11. Total Final Energy Consumption	5		1,249	392		3	24	641	133	42	14		1,001	194	2,449
12. Industry Sector	5		192					66	124		3		244	42	483
13. Transport Sector			952	392		3		543		3	11				952
13.2 Domestic Air Transport			3			3									3
13.3 Road			949	392				543		3	11				949
14. Other Sector			105				24	32	10	39			758	152	1,014
14.1 Residential & Commercial			73				24		10	39			758	152	982
14.1.1 Commerce and Public Services			56				14		10	32				77	133
14.1.2 Residential			17				9			7			758	75	849
14.2 Agriculture			32					32							32
14.4 Non-specified Others														0	0
15. Of Which Non-energy Use			14								14				14
16. Electricity Output in GWh	32	899	0									32	6		968

GWh = gigawatt-hour, ktoe = kiloton of oil equivalent, LPG = liquid petroleum gas, NGL = natural gas liquid.

Table 2.3. Cambodia Energy Balance Table, 2011

Unit: ktoe

	1.	3.	4.	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.10	6.	9.	10.	12.
	Coal	Crude Oil & NGL	Petroleum Products	Motor Gasoline	Naphtha	Jet Fuel	Kerosene	Gas / Diesel Oil	Fuel Oil	LPG	Other Petroleum Products	Hydro	Other s	Electricity	Total
1. Indigenous Production												4	1,803		1,807
2. Imports	26		1,608	416		55	13	824	230	48	22			157	1,791
3. Exports															
4. International Marine Bunkers															
13.1 International Aviation Bunkers			-46			-46									-46
5. Stock Changes	0		2	1		0	0	-5	5	0	0				2
6. Total Primary Energy Supply	26		1,563	418		9	13	819	236	48	22	4	1,803	157	3,554
7. Transfers															
8. Total Transformation Sector	-20		-191					-6	-185			-4	-756	88	-884
8.1 Main Activity Producer	-20		-191					-6	-185			-4	-5	88	-133
8.8 Charcoal Processing													-751		-751
9. Loss & Own Use			-2	0				-2			0	0		-24	-26
10. Discrepancy	0		90	-27		-5	54	-34	102	1	-2	0	0	0	90
11. Total Final Energy Consumption	6		1,460	390		4	67	777	153	49	19		1,047	221	2,733
12. Industry Sector	6		204					69	129		6		254	54	518
13. Transport Sector			1,090	390		4		670		11	13				1,090
13.2 Domestic Air Transport			4			4									4
13.3 Road			1,086	390				670		11	13				1,086
14. Other Sector			166				67	38	24	38			792	167	1,126
14.1 Residential & Commercial			128				67		24	38			792	167	1,087
14.1.1 Commerce and Public Services			61				7		24	30				93	154
14.1.2 Residential			67				59			8			792	73	933
14.2 Agriculture			38					38							38
14.4 Non-specified Others														1	1
15. Of Which Non-energy Use			19								19				19
16 Electricity Output in GWh	47	909										52	12		1,019

GWh = gigawatt-hour, ktoe = kiloton of oil equivalent, LPG = liquid petroleum gas, NGL = natural gas liquid.

Table 2.4. Cambodia Energy Balance Table, 2012

Unit: ktoe

	1.	3.	4.									6.	9.	10.	12.
	Coal	Crude Oil & NGL	Petroleum Products	4.1 Motor Gasoline	4.2 Naphtha	4.3 Jet Fuel	4.4 Kerosene	4.5 Gas / Diesel Oil	4.6 Fuel Oil	4.7 LPG	4.10 Other Petroleum Products	Hydro	Other s	Electricity	Total
1. Indigenous Production												44	1,878		1,922
2. Imports	35		1,681	405		69	7	908	215	56	20			181	1,897
3. Exports															
4. International Marine Bunkers															
13.1 International Aviation Bunkers			-58			-58									-58
5. Stock Changes	0		-5	-6		-2	0	1	2	-1	0				-5
6. Total Primary Energy Supply	35		1,618	399		10	7	909	218	55	21	44	1,878	181	3,757
7. Transfers			0												
8. Total Transformation Sector	-29		-185					-9	-176			-43	-787	122	-922
8.1 Main Activity Producer	-29		-185					-9	-176			-43	-5	122	-140
8.8 Charcoal Processing													-782		-782
9. Loss & Own Use			-2	0				-2			0	-2		-22	-26
10. Discrepancy	0		109	22		-6	-2	1	98	-1	-3	0	0	0	109
11. Total Final Energy Consumption	6		1,539	421		4	5	899	139	54	17		1,091	281	2,917
12. Industry Sector	6		197					77	116		4		265	77	546
13. Transport Sector			1,250	421		4		778		34	13				1,250
13.2 Domestic Air Transport			4		4										4
13.3 Road			1,247	421				778		34	13				1,247
14. Other Sector			92				5	44	23	20			826	203	1,121
14.1 Residential & Commercial			48				5		23	20			826	203	1,077
14.1.1 Commerce and Public Services			44				3		23	17				110	153
14.1.2 Residential			4				2			3			826	93	923
14.2 Agriculture			44					44							44
14.4 Non-specified Others														1	1
15. Of Which Non-energy Use			17								17				17
16 Electricity Output in GWh	37	857										517	12		1,423

GWh = gigawatt-hour, ktoe = kiloton of oil equivalent, LPG = liquid petroleum gas, NGL = natural gas liquid.

Table 2.5. Cambodia Energy Balance Table, 2013

Unit: ktoe

	1.	3.	4.									6.	9.	10.	12.
	Coal	Crude Oil & NGL	Petroleum Products	4.1 Motor Gasoline	4.2 Naphtha	4.3 Jet Fuel	4.4 Kerosene	4.5 Gas / Diesel Oil	4.6 Fuel Oil	4.7 LPG	4.10 Other Petroleum Products	Hydro	Others	Electricity	Total
1. Indigenous Production			0									87	1,955		2,043
2. Imports	52		1,676	409		80	5	929	167	65	21			196	1,925
3. Exports															
4. International Marine Bunkers															
13.1 International Aviation Bunkers			-68			-68									-68
5. Stock Changes	0		-8	1		0	0	-4	-3	-2	0				-8
6. Total Primary Energy Supply	52		1,601	410		12	4	925	164	64	21	87	1,955	196	3,892
7. Transfers															
8. Total Transformation Sector	-46		-112					-3	-109			-84	-818	152	-907
8.1 Main Activity Producer	-46		-112					-3	-109			-84	-3	152	-92
8.8 Charcoal Processing													-815		-815
9. Loss & Own Use			-17	-2				-15		0	0	-3		-43	-63
10. Discrepancy	0		44	9		-9	-1	-9	58	0	-2	0	0	0	44
11. Total Final Energy Consumptions	7		1,516	417		3	3	897	113	64	19		1,137	306	2,966
12. Industry Sector	7		177					74	98	1	4		276	71	530
13. Transport Sector			1,259	417		3		782		42	15				1,259
13.2 Domestic Air Transport			3			3		0							3
13.3 Road			1,256	417				782		42	15				1,256
14. Other Sector			81				3	42	15	21			861	235	1,177
14.1 Residential & Commercial			39				3		15	21			861	234	1,135
14.1.1 Commerce and Public Services			34				1		15	18				132	167
14.1.2 Residential			5				2			3			861	102	969
14.2 Agriculture			42					42							42
14.4 Non-specified Others														1	1
15. of which Non-Energy Use			19								19				19
16. Electricity Output in GWh	169	579	0									1,016	7		1,770

GWh = gigawatt-hour, ktoe = kiloton of oil equivalent, LPG = liquid petroleum gas, NGL = natural gas liquid.

Table 2.6. Cambodia Energy Balance Table, 2014

Unit: ktOE

	Coal	Crude Oil & NGL	Petroleum Products	4.1 Motor Gasoline	4.2 Naphtha	4.3 Jet Fuel	4.4 Kerosene	4.5 Gas/ Diesel Oil	4.6 Fuel Oil	4.7 LPG	4.10 Other Petroleum Products	Hydro	Others	Electricity	Total
1. Indigenous Production												159	2,051		2,211
2. Imports	303		1,735	446		92		1,017	90	74	16			155	2,193
3. Exports															
4. International Marine Bunkers															
13.1 International Aviation Bunkers			-85			-85									-85
5. Stock Changes	-15		0	0		-3	0	2	-1	1	0				-15
6. Total Primary Energy Supply	289		1,650	446		5	0	1,019	89	75	16	159	2,051	155	4,304
7. Transfers															
8. Total Transformation Sector	-279		-64					-2	-62			-154	-861	263	-1,095
8.1 Main Activity Producer	-279		-64					-2	-62			-154	-7	263	-242
8.8 Charcoal Processing			0										-853		-853
9. Loss & Own Use			-16	-1				-14		0	0	-5		-62	-83
10. Discrepancy	0		14	9		0	0	-40	47	0	-2	0	0		14
11. Total Final Energy Consumption	9		1,583	454		5		962	74	75	14		1,191	356	3,140
12. Industry Sector	9		154	0				82	66	1	5		289	91	543
13. Transport Sector			1,354	454		5		830	0	57	9				1,354
13.2 Domestic Air Transport			5			5		0							5
13.3 Road			1,350	454				830		57	9				1,350
14. Other Sector			75					50	8	16			902	266	1,242
14.1 Residential & Commercial			24						8	16			902	255	1,181
14.1.1 Commerce and Public Services			20						8	12				141	161
14.1.2 Residential			4							4			902	114	1,020
14.2 Agriculture			50					50							50
14.4 Non-specified Others														11	11
15. Of Which Non-energy Use			14								14				14
16. Electricity Output in GWh	863	327	0									1,852	17		3,058

GWh = gigawatt-hour, ktOE = kiloton of oil equivalent, LPG = liquid petroleum gas, NGL = natural gas liquid.

Table 2.7. Cambodia Energy Balance Table, 2015 (Preliminary)

Unit: ktoe

	1.	3.	4.	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.10	6.	9.	10.	12.
	Coal	Crude Oil & NGL	Petroleum Products	Motor Gasoline	Naphtha	Jet Fuel	Kerosene	Gas / Diesel Oil	Fuel Oil	LPG	Other Petroleum Products	Hydro	Others	Electricity	Total
1. Indigenous Production												172	2,112		2,284
2. Imports	510	10	1,896	502	19	97		1,086	36	108	48			133	2,549
3. Exports															
4. International Marine Bunkers															
13.1 International Aviation Bunkers			-79			-79									-79
5. Stock Changes	0		8	-1		2		5	6	-2	-2				8
6. Total Primary Energy Supply	510	10	1,825	502	19	20		1,091	42	105	46	172	2,112	133	4,761
7. Transfers		-10	10	29	-19										0
8. Total Transformation Sector	-497		-45					-1	-43			-171	-884	399	-1,198
8.1 Main Activity Producer	-497		-45					-1	-43			-171	-18	399	-332
8.8 Charcoal Processing													-866		-866
9. Loss & Own Use			-16	-1				-15		0	-1	-1		-85	-102
10. Discrepancy	0		-48	5		-14		-79	34	5	1	0	0		-48
11. Total Final Energy Consumption	13		1,725	534		6		996	32	110	46		1,228	447	3,413
12. Industry Sector	13		112					77	27	2	6		312	98	535
13. Transport Sector			1,549	534		6		882		87	40				1,549
13.2 Domestic Air Transport			6			6		0							6
13.3 Road			1,544	534				882		87	40				1,544
14. Other Sector			64					38	5	21			916	350	1,329
14.1 Residential & Commercial			26						5	21			916	349	1,290
14.1.1 Commerce and Public Services			21						5	16				218	238
14.1.2 Residential			5							5			916	131	1,052
14.2 Agriculture			38					38							38
14.4 Non-specified Others														1	1
15. Of Which Non-energy Use			47								47				47
16 Electricity Output in GWh	2,376	228										2,000	40		4,645

GWh = gigawatt-hour, ktoe = kiloton of oil equivalent, LPG = liquid petroleum gas, NGL = natural gas liquid.