

# Introduction of Energy Consumption Survey for Selected Provinces

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# Chapter 3

## Introduction of Energy Consumption Survey for Selected Provinces

## 1. Introduction

The Economic Research Institute for ASEAN and East Asia (ERIA), in collaboration with the General Department of Petroleum, Ministry of Mines and Energy of Cambodia, estimated the petroleum product consumption by sector and prepared the Cambodia Petroleum Supply Master Plan. The master plan aimed to draw an appropriate map of Cambodia's petroleum supply chain and system for 2040. From supply sites to final demand sites, the petroleum supply chain was based on the forecast of provincial demand for each petroleum product.

The existing data on petroleum demand was at the national level. The data was annual and covered demand by product and by sector. However, demand data by province and product were not available. It was necessary, therefore, to conduct an energy consumption survey at the provincial level to estimate the consumption of petroleum products in the province.

The survey aimed to collect the necessary petroleum consumption data at the provincial level to estimate consumption by sector and type of petroleum product. A local consultant conducted the survey based on the questionnaires prepared for the industry, road transport, residential, and commercial sectors.

This chapter provides an overview of the petroleum demand survey in provinces and presents the major results of the survey.

## 2. Methodology

## 2.1. Selection of provinces to be surveyed

The Kingdom of Cambodia has 25 provinces. Due to the survey limitations, the survey team selected six provinces as samples, using the following approach:

- All provinces were classified into small, medium, and large groups in terms of petroleum demand. Since no data on the petroleum demand of the provinces was available, the classification was based on the provinces' population:
  - > Large: total population of more than 900,000
  - Medium: total population from 800,000 to 900,000
  - Small: total population less than 800,000
- Two provinces were chosen to represent the groups: Phnom Penh and Siem Reap (a total of six provinces were chosen)
- The six provinces selected were Kampong Cham, Kampong Speu, Preah Sihanouk, Battambang, Siem Reap, and Phnom Penh City.

## 2.2 Selection of samples

The energy consumption surveys were conducted in four sectors (residential, commercial, industry, and transport) for each province selected, using questionnaires provided by ERIA.

The proposed sample size in each province was 3,600, broken down by sector as follows:

- Factories : 100 x 6 = 600
- Transport : 200 x 6 = 1,200
- Commercial buildings : 100 x 6 = 600
- Households : 200 x 6 = 1,200

The number of samples for each type of end user was modified slightly to reflect the real condition of the area. The total final samples for the selected provinces numbered 2,015 for the four sectors surveyed. The breakdown was as follows:

1) Phnom Penh (total 440 samples)

- Industry and/or factory: Total 30 samples (15 factories, 15 handicrafts)
- Commercial buildings: Total 10 samples (5 hotels, 5 offices and/or supermarkets)
- Transportation or vehicle: Total 200 samples (10 buses, 10 trucks, 20 pick-ups, 30 SUVs, 30 sedans, 50 motorcycles, 20 motor taxis, 20 tuk-tuks)
- Residential or households: Total 200 samples (30 thatched/zinc/tile roof wooden houses, 140 flats)
- 2) Provinces. In each of the five provinces = 315 samples (total 315 X 5=1,575 samples) Some are in provincial towns, some in district centres
  - Industry: Total 15 samples (5 factories, 10 handicrafts).
  - Commercial building: total 10 samples (5 hotels, 5 offices or *+*supermarkets)
  - Transportation or vehicle: total 145 samples (5 buses, 5 trucks, 10 pick-ups, 20 SUVs, 20 sedans, 60 motorcycles, 25 motor taxis)
  - Residential and household: total 145 samples (50 thatched/zinc/tile roof wooden houses, 85 flats, 10 mansions)

## 2.3 Design of the questionnaire

The questionnaires were prepared in close consultation with the study team members, consisting of the local consultant team, the General Department of Petroleum, and the ERIA expert team. The questionnaire consisted of two parts: general information and consumption data. The content of the questionnaire for each sector was:

- Factories: ISIC, petroleum consumption (name, litre/month), purpose, main product (name, production [/month])
- Transport: vehicle type, engine capacity, petroleum consumption (name, litre or kg/month), driving distance (km/month)
- Buildings: building type, floor area (m<sup>2</sup>), petroleum consumption (name, litre/month), purpose

• Households: type, family size, petroleum consumption (name, litre or kg/month), purpose The questionnaires are shown in section 3.5.

#### 3.2.4 Distribution and collection of survey questionnaires

The consultant team conducting the survey comprised of one team leader, one field supervisor, and four surveyors.

## 3. Major Results from the Survey

#### 3.1 Commercial sector

The samples for the commercial sector in the selected provinces covered hotels, office buildings (banks), restaurants, malls, and supermarkets. Fuel consumed includes liquefied petroleum gas (LPG) for cooking in hotels and restaurants, electricity, diesel backup generators, and in some hotels for heating boilers. The survey collected the floor area of each building category and the monthly consumption of LPG, diesel, and electricity. The average floor area for each category in each province is shown in Figure 3.1.



Figure 3.1. Average Floor Space of Selected Samples of the Commercial Sector

Source: Consultant's report.

LPG is used in hotels and restaurants in all provinces. It is also consumed in malls in Phnom Penh. Usually, LPG is not provided by the mall but by the tenant of the food court or restaurant in the mall. In this regard, LPG was deleted from the estimation. The average monthly consumption of LPG ranges from 322 kg/month in Battambang to 3,300 kg/month in Phnom Penh.

Diesel is mainly used for backup electricity for most buildings. Also, hotels consumed diesel for boilers to provide hot water to guest rooms. Most of the samples in the commercial sector have their generator due to Cambodia's occasional blackouts. These respondents have one or two generators. They have fuel storage tanks of various sizes, depending on the capacity of the generators. The monthly consumption of LPG, diesel, and electricity is shown in Figure 3.2.

Figure 3.2. Monthly Consumption of LPG, Diesel, and Electricity in the Commercial Sector



Source: Consultant's report.

Based on the survey's monthly consumption and floor area, the unit consumption of LPG, diesel, and electricity (energy intensity) for each category was estimated by dividing the fuel consumption by floor area. The monthly intensity of the fuel consumed by the commercial category is shown in Table 3.1.

Table 3.1. Monthly LPG, Diesel, and Electricity Intensity

Province	Type of Building	LPG (kg/m2)	Diesel (litre/m2)	Electricity (MWh/m2)
	Restaurant	0.20	0.20	21
	Supermarket	0.33	0.33	45
Preah Sihanouk	Mall			
	Office	0.16	0.16	10
	Hotel	0.42	0.42	41
	Restaurant	1.14	0.01	7
	Supermarket			
Kampong Cham	Mall			
	Office	0.00	0.12	21
	Hotel	0.10	0.06	17

	Restaurant	2.72	0.19	46
	Supermarket			
Kampong Speu	Mall			
	Office	0.00	0.23	14
	Hotel	0.00	0.08	11
	Restaurant	0.57	0.06	5
	Supermarket			
Battambang	Mall	0.00	0.01	3
	Office	0.00	0.16	13
	Hotel	0.10	0.05	16
	Restaurant	9.15	0.00	26
	Supermarket			
Phnom Penh City	Mall	0.19	0.02	50
	Office	0.00	0.04	11
	Hotel	0.55	0.50	29
	Restaurant	1.00	0.08	13
	Supermarket	0.00	0.20	37
Siem Reap	Mall	0.00	0.09	17
	Office	0.00	0.16	10
	Hotel	0.04	0.29	18

Source: Consultant's report.

#### 3.2. Industry sector

The industries surveyed were grouped into three: food and beverages, garments, and others. Figure 3.3 shows the sample size and annual revenue for each group.



Figure 3.3. Sample Size and Annual Revenue of the Industry Sub-sectors

Source: Consultant's report.

None of the industries surveyed consumed LPG. Usually, industries consumed LPG for the nonmanufacturing process, such as heating water for drinking; thus, LPG is usually excluded from the consumption of industry. On the other hand, diesel was mainly consumed for backup generators as the Electricite du Cambodge (EDC) cut off supply during certain hours due to electricity supply shortage. The average annual consumption of diesel was 1,217 litres in Siem Reap to 30,000 litres in Battambang. For electricity, the average yearly consumption was 206 MWh to around 10,220 MWh, the highest in Battambang where one of the samples is the cement factory. Figure 3.4 shows the average annual diesel and electricity consumption by sub-sector.



Figure 3.4. Average Annual Diesel and Electricity Consumption

Source: Consultant's report.

The average unit consumption of diesel and electricity (intensity) is the average consumption divided by the revenue (Figure 3.5). The average diesel intensity for the selected provinces ranged from 1.2 litres/'000 US\$ in Kampong Speu to 5.2 litres/'000 US\$ in Siem Reap. The average electricity intensity ranged from 227 to 727 kWh/'000US\$ for Seam Reap and Battambang. One of the respondents in Battambang is the cement factory.



Figure 3.5. Average Fuel Intensity of Surveyed Industries

Source: Consultant's report.

#### 3.3 Residential sector

The type of dwellings surveyed were broken down into houses and/or villas and flats. Flats are dwellings that occupy only a part of a building. Houses and/or villas (including wooden houses), are dwellings of relatively affluent households. The total samples for the six provinces were 464 for houses and/or villas and 488 for flats. Some of the sampled houses have business activities. Figure 3.6 shows the breakdown of the sampled houses, by type of business.



Figure 3.6. Household Profile for Houses and/or Villas and Flats

Source: Consultant's report.

The respondents use LPG for cooking, gasoline for their vehicles, and diesel for backup generators or pumped-up water. However, the use of fuel for transportation and backup generator was not considered household fuel consumption. Thus, the result here is only for LPG and electricity.

The average monthly LPG consumption of houses and/or villas is 6–10 kg., while flats, 8–10 kg (Table 3.2). The monthly electricity consumption is between 151–289 kWh for houses and/or villas and 183–367 kWh for flats. The high consumption of flats compared to houses and/or villas is due to the higher sample of flats with retail shops compared to no business.

		LPG         Electricity           (kg/m2)         (MWh/m2)           Houses/ Villas         Flats         Houses/ Villas         Flats           4         7         79         14           14         9         461         11           17         24         140         11           5         7         94         9           9         28         400         103           5         7         103         8         8         177								
Province	Type of Building	(kg/	m2)	(MWI	n/m2)					
	. The of Damania	Houses/ Villas	Flats	Houses/ Villas	Flats					
	No business area	4	7	79	114					
Droch Sibonouk	Retail shop	14	9	461	261					
Flean Smanouk	Restaurant	17	24	140	120					
	Others	11	7	300	245					
	No business area	5	7	94	147					
Kampong Cham	Retail shop	9	9	221	193					
Kampong Cham	Restaurant	9	28	400	178					
	Others	6	7	87	176					
	No business area	5	7	103	181					
Kampong Speu	Retail shop	8	8	177	252					
Kampong Speu	Restaurant	21	18	275	230					
	Others	12	6	221	320					
	No business area	6	9	140	268					
Battambang	Retail shop	8	11	196	404					
Dattambang	Restaurant									
	Others	6		80						
	No business area	9	7	218	207					
Phnom Penh City	Retail shop	9	9	337	338					
r finion r enn eity	Restaurant	20	21	857	324					
	Others	9	9	345	440					
	No business area	8	8	231	320					
Siem Rean	Retail shop	13	11	315	293					
Siemineap	Restaurant	27		367						
	Others	12		1400						

## Table 3.2. Average Monthly LPG and Electricity Consumption, by House Type

Source: Consultant's report.

The energy intensity of LPG for the household sector is the LPG consumption divided by the persons in the specific household. Figure 3.7 shows the LPG intensity for the two types of households based on the surveyed data.



Figure 3.7. Average Monthly LPG Intensity, by House Type

Source: Consultant's report.

Similarly, the average monthly electricity intensity is consumption divided by the persons in the specific household types (Figure 3.8)



Figure 3.8. Average Monthly Electricity Intensity, by House Type

Source: Consultant's report.

#### 3.4 Transport sector

Sampled were sedans, SUVs and/or minibuses, vans, pick-ups, trucks, buses, motorcycles, motor taxis, and three-wheeled tuk-tuks. The total sample vehicles for the six selected provinces numbered 920. Figure 3.9 shows the breakdown.



Figure 3.9. Sampled Vehicles, by Province and Vehicle Type

Source: Consultant's final paper.

Motorcycles and motor taxis combined have the largest share of the vehicles sampled, the highest in Kampong Speu (55%) and the lowest in Phnom Penh (38%). The share of sedans and SUVs on average are 15% and 14%, respectively. Since these vehicles mainly consume gasoline, those surveyed were gasoline vehicles ranging from 71% to 82% of the total vehicles sampled. The parking lot survey result provided the data on the monthly consumption by fuel, and the distance travelled for each type of vehicle sampled. Table 3.3 shows the average fuel economy for every kind of vehicle in the selected province.

Province	Fuel Type	Sedan	suv	Van	Pick-up	Truck	Bus	Motor- cycle	Motor taxi	Tuk-tuk	Rickshaw
	Gasoline	12	8		8			46	44		
Preah Sihanouk	Diesel			10	9	5	4				
	LPG	10	12								11
	Gasoline	11	8					45	44		
Kampong Speu	Diesel			8	10	5					
	LPG										10
	Gasoline	13	8					44	40		
Kampong Cham	Diesel			7	10	8	8				
	LPG		8								14
	Gasoline	12	8		8			48	44	42	
Phnom Penh City	Diesel		13	8	9	4	3				
	LPG										9
	Gasoline	11	8		9			46	44	35	
Battambang	Diesel		11	9	10	3	4				
	LPG		9								9
	Gasoline	14	8					46	44	41	
Siem Reap	Diesel			8	9	3	3				
	LPG		11								11

Table 3.3. Fuel Economy of Sampled Vehicles, by Province (km/litre)

Source: Consultant's final paper.

Based on fuel economy and the monthly distance travelled, the fuel consumption of each vehicle per year was estimated (Table 3.4).

Vehiele Turne	Pre	ah Sihano	uk	Kai	mpong Sp	eu	Kar	npong Ch	am	Phn	om Penh	City	В	attamban	g		Siem Reap	)
venicie Type	Gasoline	Diesel	LPG	Gasoline	Diesel	LPG	Gasoline	Diesel	LPG	Gasoline	Diesel	LPG	Gasoline	Diesel	LPG	Gasoline	Diesel	LPG
Sedan	811		13,200	964			667			862			937			697		
SUV	1,476		10,776	1,304			1,098		10,080	1,402	1,200		1,256	1,227	15,976	1,345		11,275
Van		6,150			6,447			8,308			9,383			7,260			11,585	1
Pick-up	1,312	1,570			1,601			1,378		1,250	1,297		1,249	1,215			1,303	
Truck		31,413			15,273			6,634			6,305			36,000			13,624	1
Bus		50,400						22,979			25,506			19,201			64,500	
Motorcycle	120			114			110			107			108			102		1
Motor taxi	996			887			745			743			912			827		
Tuk-tuk										841			1,200			859		1
Rickshaw			2,589			2,380			1,778			2,455			2,258			2,363

Table 3.4. Unit Consumption (Fuel Intensity) of Vehicles, by Selected Province (litre/vehicle)

Source: Consultant's final paper.

## 4 Methodology to Estimate Provincial Oil Consumption

The consumption survey conducted for the industry, road transport, residential, and commercial sectors estimated the unit consumption of the different types of oil consumed by the sectors in the selected provinces. This fuel intensity serves to estimate the oil consumption of the province. Inflating the survey result to the provincial total was done by multiplying the specific energy consumption (intensity) with the respective sector's activity.

The methodology for estimating the provincial total oil consumption of the different sectors and the result is described in the following sections.

#### 4.1 Commercial sector

The fuel intensity (LPG, diesel, and electricity) for each category (shopping mall and restaurant, office, and hotel) was estimated utilising the commercial sampling survey above. The fuel consumption for each category was then calculated by multiplying those intensities by floor area using the following formula.

$$OIL_{j} = \sum_{i=category}^{n} (FOIL_{ij} * FLOOR_{ij})$$

Where,

*OIL*<sub>j</sub> is the total LPG or diesel consumption for province j.

*FOIL*<sub>ij</sub> is the LPG or diesel consumption per m<sup>2</sup> for category *I and province j* 

*FLOOR*<sub>ij</sub> is the total floor area in m<sup>2</sup> for category *I* and province j

The floor areas by category can be obtained from the NIS, Ministry of Planning Cambodia. The data should be by province to estimate the provincial level of the commercial sector's oil and electricity consumption.

#### 4.2 Industry sector

In the industrial survey, the unit consumption (intensity) of oil and electricity was calculated by dividing the fuel consumption into each sub-sector surveyed by its sales revenue and adjusted by the value-added ratio. Multiplying the unit consumption with the sector's GDP resulted in total diesel or LPG for the whole country. Thus, the total oil consumption of the province is:

$$EC_{j} = \sum_{i=sector}^{n} IEC_{ij} * (GDP_{ij}/VAR_{i})$$

Where,

*EC<sub>j</sub>* is the total energy consumption for province j

 $IEC_{ij}$  is the energy consumption per revenue for sector *i* and province *j* (intensity)

*GDP*<sub>ij</sub> is the total GDP for sector *I* and province *j* 

VAR<sub>i</sub> is the value-added ratio for sector *i* (assumed to be 0.5 for all sectors)

The manufacturing sector GDP of the province should be available at the NIS, Ministry of Planning, Cambodia. The data should be by province and at the constant price level.

#### 4.3 Residential sector

The sampling survey in the residential sector was differentiated between houses and/or villas and flats. Each household type was further classified into those with business area and without business area. The business area can be a restaurant, a retail shop, and others. The fuel intensity was calculated above by dividing the consumption by the number of persons in the household. Provincial-level consumption was estimated using the following formula:

$$Fuel_{j} = \sum_{i=regions}^{n} (PFuelij * HSIZEij * N_{ij} * UR_{ij})$$

Where,

*Fuel*<sub>i</sub> is the total fuel consumption (LPG and electricity) for province *i* 

*PFuel*<sub>ij</sub> is the fuel consumption per person (fuel intensity) for house type *i* and province *j* 

HSIZE<sub>ij</sub> is the household size for house type *i* and province *j* 

*N<sub>ij</sub>* is the number of households for house type *i* and province *j* 

UR<sub>ij</sub> is the fuel utility rate for house type *i* and province *j* 

Regions are defined as Phnom Penh city and other urban and rural areas. The number of households for each region was obtained from the latest Cambodia Socio-economic Census (CSES) by the NIS of Cambodia. The utilisation rate for LPG of each region was then obtained from the main sources of cooking by geographical domain in the CSES housing survey. Similarly, the CSES also included households' primary sources for lighting.

#### 4.4 Transport sector

The parking lot survey estimated the unit fuel consumption (intensity) for the different types of vehicles surveyed in each province. The total oil consumption for the road transport in each selected province was estimated using the following equation:

$$Fuel_{j} = \sum_{i=vehicle}^{n} \left( FE_{ij} * DIS_{ij} * VEH_{ij} \right)$$

Where,

*Fuelj* is the total gasoline/diesel/LPG consumption for province *j* 

- *FEij* is the fuel economy of vehicle type *i* and province *j*
- *DISij* is the distance travel of vehicle type *i* and province *j*
- *VEHij* is the total number of gasoline/diesel/LPG vehicles for type *i* and province *j*

On request by the Ministry of Energy, the Ministry of Transport can provide the number of vehicles by type and fuel consumed. Vehicle registration usually includes the type and fuel consumed.

#### 5. Survey Questionnaires

The survey questionnaire was developed using an excel spreadsheet. The enumerator then transferred the results into a Word format. Table 3.5 shows the questionnaire for the commercial sector, Table 3.6 for the industry sector, Table 3.7 for the residential sector, and Table 3.8 for the transport sector.

Province	Location :	Urban Rural		LPG (Kg)	Kerosene (Kl)	Fi	iel Oil (Kl)	Di	esel Oil (Kl)	Ga	soline (Kl)	Other Pe	troleum Pro	ducts (Kl)	Production	Electrici	ity (N
Interview Date	Interviewer ID/HP/Email		2019	Total	Total	Total	of which: fuel for electricity generation	Total	of which: fuel for electricity generation	Total	of which: fuel for non- transport	Lubricant (Kl)	Specify 1	Specify 3	Amount of Major Product (Unit: Ton)	Total	of EC
Company Name		] [	Jan Feb Mar														
Contact Person HP/Email		]	Apr May Jun														
Type of Establishment	Office     Retail Building/Shop     Retail Building/Shop     Retail Building/Restaurant (air-conditioned)     Hotel (3-Star rating)     Hotel (4-Star rating)     Hospital		Jul Aug Sep Oct Nov Dec														
Establishment Name and Address		] [	Annual	-	tors in the h	wilding		1.0									
Phone number/ email address		]	Generator	r Size		unung		kW	per generator		Boile	r Fuel consu	s in the build	ing :	kilo	ers liter per boi	iler
Total floor area of which: Floor area of your establishment	m2 m2		Generator	r Operati	on Rate		:	kilo Hou	liter per fuel tank ırs/Year		Boile	r Operating	Hours	:	Hou	rs/Year	
Total number of floors/stories of	Floors	,	Additiona	l informa	ition / mem	10											
6 111 1111 11 11 11 11																	



Province	:					LPG (Kg)	Kerosene (Kl)	Fu	el Oil (Kl)	Die	esel Oil (Kl)	Ga	ioline (Kl)	Other Pe	troleum Pro	ducts (KI)	Production	Electrici	ty (MWh)
nterview Date	:	Interviewer ID:		]	2019	Total	Total	Total	of which: fuel for electricity generation	Total	of which: fuel for electricity generation	Total	of which: fuel for non- transport	Lubricant (Kl)	Specify 1	Specify 3	Amount of Major Product (Unit: Ton)	Total	of which EDC/IPP
Address	:				Jan Feb Mar Apr May														
Phone number/ email address	:				Jun Jul Aug Sep Oct														
Major Product *)	:			*) Specify types detail	Nov Dec Annual														
SIC Total Workers	: Person	1			Number Generati Fuel Tan	of genera or Size k Capacit	ators in the b	ouilding	:	Gen kW kilo	erators per generator liter per fuel tank		Num Boile Boile	ber of boiler r Fuel consu r Operating	s in the build mption Hours	ing : :	Boile kilo Hou	ers liter per boi rs/Year	ler
Monthly Production Rate	:	Unit :	Ton		Generati	or Operat	tion Rate ation / mem	10	:	Hou	rs/Year								
Gross Revenue (annual)	: Mil. USD	, _	please specify																

## Table 3.6. Industry Sector Questionnaire

## Table 3.7. Residential Sector Questionnaire

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Sample Petroleum Consun	ption Survey Questionnaire in	Please f	ill the average	month	iy Petroleum (	consumptio	n		
the Residential Sector	, , ,	Fuel Type	HH purposes	Unit	Cylinder/Can	Capacity	Average can/cylinder per month	Average consumption	of which: HH Business
Province	Location : Urban	LPG		Kg					
	Rural	Kerosene		KI					
Interview Date Interviewer ID/HP/Email		Please fil	I the average Ele	ctricity	Consumption (	kW)			
Name of Household Head		Fuel Type	HH purposes			Avi	erage of wh imption HH Bu	ich: iness	
	House	Lighting							
Type of Dwelling/Residence	Flat	Cooling							
	Others (Specify)	Cooking							
		Others							
Phone number/ email address									of which:
Household Size	Person/HH	Fuel Type purposes	Unit	:	Type of Vehicle*	Engince Capacity (cc)	Feuling Weekly	Mileage (km/week)	Motor Taxi, Taxi, etc
	<150 US\$/month 151-350 US\$/month	Gasoline	Liter	r					
Average monthly	251 500 US\$/month	Diesel	Liter	r					
Expenditure**)	532-300 033/110101	LPG	kg						
	U\$\$/month 1001-2000	*) Type o	f Vehicle						
	>2000 US\$/month	1	Sedan						
		2	SUV		_				
Do vou have business area	No business area	3	Small Bus/Mi	nivan	-				
in your house***)	Retail shop	5	Truck		-				
	Restaurant Others (Specify)	6	Bus						
	Coners (Specify)	7	Motorcyc	le					
		8	Tuk-tuk		_				

#### Table 3.8. Transport Sector Questionnaire

				ROAD TRA	NSPORT Q	JESTIONNA	AIRE	
Province	:						Area* :	
Site Num	iber :	Site Nan	ie:					*) Select Area : Rural / Urban
Date :			Inter Inter	viewer Name viewer ID/HP/	EMAIL:			
Please fil	ll the average we	ekly consun	ption or pu	irchasing am	ount			
Seq.	Plate No.	Type of Vehicle	Engine Capacity (cc)	Fueling Gasoline in last month (liter/m)	Fueling Diesel Oil in last Month (liter/m)	Fueling LPG in last month (liter/m)	Mileage in last month (km/m)	
1								
2								
10		_						
11								
30								
*) Type of	fvehicle						1	1
1. Sedan 2. SUV 3. Small B 4. Pick-up	us/Mini Van	6. Bus 7. Motor 8. Motor 9. Tuktuk	Cycle Taxi					
5 Truck		10. Others	(specify)					