

policies and action plans with greater effectiveness and economic benefits. ERIA would like to support the MEEI continuously and technically in terms of promoting EEC in Mongolia.

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Appendix – Questionnaire

Appendix 1. Residential Sector

											General
Urban / Rural	How many persons are there in your household (including you)? (person)	Type of Dwelling	What is your monthly household income? (Tugrik [₮])	Do you have a household - based income-generating activity?	What is the floor area of your house/dwelling ? (m ²)	Number of Rooms	How much approximately do you spend for electricity at your house/dwelling per year? (₮/year)	How much approximately do you spend for space heating? (for apartment users) ₮/year)	How much approximately do you spend for other energy sources at your house/dwelling per year? (₮/year)	How frequently do you experience outages in a month?	How long on average do the outages last in a month ?
Urban											

														Other Fuels
Do you use any other fuel type ?	Coal		LPG		Wood		Dry Dung Fuel		Pellets		Khurzun		Others	
	Use of Fuel	How much is your consumption (tons/year)	Use of Fuel	How much is your consumption ? (litre/year)	Use of Fuel	How much is your consumption ? (m ³ /year)	Use of Fuel	How much is your consumption ? m ³ /year	Use of Fuel	How much is your consumption ? kg/year	Use of Fuel	How much is your consumption m ³ /year	Use of Fuel	How much is your consumption ? litre/year
Yes														

												Lighting
Type of Lamp				Average Hours of Daily Usage hour/day				Average Power Rating watts/lamp				Annual Consumption kWh/year
LED	CFL	Fluorescent lamp	Incandescent bulb	LED	CFL	Fluorescent lamp	Incandescent bulb	LED	CFL	Fluorescent lamp	Incandescent bulb	

Refrigerator

Type of Equipment	No. of Years in Use	Manufacturer or Brand	Power Rating (watts)	Load Factor	Annual Consumption kWh
Refrigerator					
Freezer					

Washing machine

Kind of Equipment	No. of Years In Use	Capacity (kg)	Manufacturer or Brand	Power Rating (watts)	Frequency of Washing/day	Number of Days/week	Hours of Usage Per Week	Load Factor	Annual Consumption (kWh)

TV

Type of Equipment	No. of Years In Use	Manufacturer or Brand	Model	Size (inch)	Power Rating (watts)	Hours of Daily Usage	Days of Weekly Usage	Annual Consumption (kWh)

Rice cooker

Manufacturer or Brand	No. of Years in Use	Power Rating (watts)	Frequency of Cooking/day	Days of Daily Usage/week	Annual Consumption (kWh)

Computer

Type of Equipment	No. of Years in Use	Manufacturer or Brand	Model	Power Rating (watts)	Hours of Daily Usage	Days of Daily Usage	Annual Consumption (kWh)
Personal computer							
Laptop							

Electric stove

Type	No. of Years in Use	Manufacturer pr Brand	Power Rating (watts)	Hours of Daily Usage	Days of Daily Usage	Annual Consumption (kWh)
Electric stove						

Iron

Manufacturer or Brand	No. of Years in Use	Power Rating (watts)	Hours of Daily Usage	Days of Daily Usage	Annual Consumption (kWh)
Russian					

Electric kettle

Manufacturer or Brand	No. of Years in Use	Model	Power Rating (watts)	Hours of Daily Usage	Days of Daily Usage	Annual Consumption (kWh)
Akira						

Electric heater

Type	No. of Years in Use	Manufacturer or Brand	Power Rating (watts)	Hours of Daily Usage	Days of Daily Usage	Load Factor	Annual Consumption (kWh)

Fan

Manufacturer or Brand	No. of Years in Use	Model	Power Rating (watts)	Hours of Daily Usage	Days of Daily Usage	Load Factor	Annual Consumption (kWh)

Appendix 2. Transport Sector

Road vehicles (sedan, taxi, bus, and truck)

Classification	Driver	Gender	How many years ago did you obtain a driver's license?	Name, Type, and Purpose of Vehicles	Engine	How many years have you driven your current vehicle?	What is the vehicle age? (in years)	Property Type	Fuel Consumption (l/100 km)				The distance of trip (km)		
									Norm	Consumption		Per day	Per month		
										Loaded				Not Loaded	
										Winter	Summer			Winter	Summer

Railway

Classification	Age	Gender	How many years ago did you become a locomotive driver?	Name, Type, and Purpose of Locomotive	Engine	How many years have you driven your current locomotive?	What is the locomotive age? (in years)	Property Type	Fuel Consumption (l/100 km)				The distance of trip (km)		
									Norm	Consumption				Per day	Per month
										Loaded		Not Loaded			
										Winter	Summer	Winter	Summer		

Airplanes

Classification	Age	Gender	How many years ago did you become a pilot?	Name, Type, and Purpose of Airplane	Engine	How many years have you piloted your current airplane?	What is the airplane age? (in years)	Property Type	Fuel Consumption (kg/h)				The distance of trip /km/		
									Norm	Consumption				Per day	Per month
										loaded		Not loaded			
										Winter	summer	Winter	summer		

Appendix 3. Commercial Sector

Office questionnaire

Name of Office & Address (indicate Township)	Description of Building					Total Electricity Consumption (kWh / year)	Total Fuel Consumption of Standby Generator Set			Heat Consumption (kWh/yr)	Weekly Operational Hours	Yearly Operational Hours	Total Gross Floor Area (m ² - excl. car park & data centre)	Total Building Energy Consumption (kWh/yr)	Average BEI (kWh/m ² /yr)
	Specify Other Usage	Occupancy Rate	Storey	Link / Detached	Location (Urban/Rural)		Fuel Type	Litre/year	Energy Consumption/Year (kWh/ ear)						

Hospital questionnaire

Name of Hospital and Address	Description of Hospital			Total Electricity Consumption (kWh/year)	Total Fuel Consumption of Standby Generator Set			Heat Consumption (kWh/yr)	Total Gross Floor Area (m ² - excl. car park and data centre)	Total Energy Consumption (electricity + other fuels) (kWh/yr)	Average BEI (kWh/m ² /yr)
	Location (Township, Urban/Rural)	No. of Hospital Beds	Large/Medium/Sm all		Fuel Type	Litre/year	kWh/year				

Hotel questionnaire

Name of Hotel and Address	Description of Hotel					Total Electricity Consumption/year (kWh/year) [To obtain consumption for 1 whole year]	Total Fuel Consumption of Standby Generator Set			Energy Consumption of Other Fuels Equivalent Consumption (kWh/year)	Heat Consumption (kWh/yr)	Total Gross Floor Area (m ² - excl. car park and data centre)	Total Energy Consumption (electricity + other fuels) (kWh/yr)	Average BEI (kWh/m ² /yr)
	Star rating	Location (Township)	No. of bedrooms	Storey	Link/Detached		Fuel Type	Litre/year	kWh/year					

Restaurant questionnaire

Name of Air-Conditioned Restaurants and Address (Indicate Township)	Description of Building				Total Electricity Consumption (kWh/year)	Energy Consumption of Other Fuels			Heat Consumption (kWh/yr)	Weekly Operational Hours	Total Gross Floor Area (m ² - excl. car park and data centre)	Total Energy Consumption (incl. other fuels and electricity) (kWh/year)	Average BEI (kWh/m ² /yr)
	No. of Storey	Link / detached	Small/Medium/Large	Location (Urban/Rural)		Fuel Type	Quantity/year	Equivalent consumption (kWh/year)					

Shopping mall questionnaire

Name of Mall/Shop and Address (Indicate Township)	Description of Building				Total Electricity Consumption (kWh/year)	Total Fuel Consumption of Standby Generator Set			Heat Consumption (kWh/yr)	Weekly Operational Hours	Yearly Operational Hours	Total Gross Floor Area (m ² - excl. car park and data centre)	Total Building Energy Consumption (kWh/year)	Average BEI (kWh/m ² /yr)
	No. of Storey	Link/Detached	Small/Medium/Large	Location (Urban/Rural)		Fuel Type	Litre/year	kWh/year						

Average monthly consumption or purchasing amount questionnaire

Fuel Type	Fuel Unit	As Fuel				Notes*)
		TOTAL	Production	Non-production*)	Transportation	
Coal	Kg	-				Labour kitchen office, factory, housing
Wood	Kg	-				
Other Biomass	Kg	-				
LPG	Kg					
Electricity	MWh					
Diesel	Litre	-				
Gasoline	Litre					
Fuel Oil	Litre					
Lubricants	Specify					
Other Petroleum Products		-				
Naphtha	Specify	-				
Specify 1		-				
Specify 2	Specify	-				

Non-energy		
Feedstock	Additive	Others

Electricity purchase questionnaire

Source of Power	Amount	Value	
	MWh	Tugrik (₮)	US\$
State company			
Private company			
Total			

Self-generation questionnaire

Generation Unit	Capacity	Generator Operation	Electricity Generation
	(MW)	(hr/year)	(MWh)

Generator 1			
Generator 2			
Generator 3			
Generator 4			
TOTAL			

Sale (MWh)		Fuel Use			NOTE
GRID	OFF GRID	Type	Consumption	Unit	
		Diesel		litre	

Heat purchase questionnaire

Source of Heat	AMOUNT	VALUE	
	Gcal	Tugrik (₮)	USD
State company			
Private company			
TOTAL			

Co-generation questionnaire

Parameters	Electricity	Unit	Thermal Energy	Unit
Capacity/Throughput				
Production				
Fuel Type				
Fuel Consumption				

Heat process questionnaire

Type	Capacity/ Throughput (kg/Hr)	Boiler/furnace Operation (Hr/year)	Heat Production (Kg/Hr)
Boiler 1			
Boiler 2			
Burner/Furnace 1			
Burner/Furnace 1			

Fuel Use			NOTE
Type	Consumption	Unit	