Energy Survey

Household Questionnaire

Medium Version

Final version for Rwanda

English

HOUSEHOLD IDENTIFICATION			
1.	Province	CODE: |__|__|	NAME:
2.	District	CODE: |__|__|	NAME:
3.	Sector	CODE: |__|__|	NAME:
4.	Cell	CODE: |__|__|	NAME:
5.	Village	CODE: |__|__|	NAME:
6.	Locality	CODE: |__|	**CODE:** Urban……1 Rural……..2
7.	Household ID		
8.	Language of interview	CODE: |__|	Ikinyarwanda….. 1 English…… 2
9.	GPS Coordinates of the Dwelling	a. Latitude (S) |__|__|°|__|__| . |__|__|__|‘ S	b. Longitude (E) |__|__|°|__|__| . |__|__|__|‘ E
INTERVIEW DETAILS			
10.	Enumerator	ID: |__|__|	NAME:
11.	Supervisor	ID: |__|__|	NAME:
12.	Date of Interview DD/MM/YY	|__|__| / |__|__| / |__|__| D D M M Y Y	
13.	Start Time	|__|__| : |__|__| ***Use 24 hour clock***	
14.	End Time	|__|__| : |__|__| ***Use 24 hour clock***	
15.	Date of Second Interview DD/MM/YY	|__|__| / |__|__| / |__|__|	
16.	Second Interview Start Time	|__|__| : |__|__| ***Use 24 hour clock***	
17.	Second Interview End Time	|__|__| : |__|__| ***Use 24 hour clock***	

Comments:

A. HOUSEHOLD ROSTER

IN ORDER TO MAKE A COMPREHENSIVE LIST OF INDIVIDUALS CONNECTED TO THE HOUSEHOLD, USE THE FOLLOWING PROBE QUESTIONS:
First, give me the names of all the members of your immediate family who normally live and eat their meals together here **for the last 6 months.**
WRITE DOWN NAMES, SEX, AND RELATIONSHIP TO HH HEAD (Q2 – Q4). LIST HOUSEHOLD HEAD ON LINE 1.
Then, give me the names of any other persons related to you or other household members who normally live and eat their meals together here.
FILL IN Q2 – Q4.
Are there any other persons not here now who normally live and eat their meals here? For example, household members studying elsewhere or traveling.
FILL IN Q2 – Q4.
Then, give me the names of any other persons not related to you or other household members, but who normally live and eat their meals together here, such as servants, lodgers, or other who are not relatives.
FILL IN Q2 – Q4.
DO NOT LIST SERVANTS WHO HAVE A HOUSEHOLD ELSEWHERE, AND GUESTS WHO ARE VISITING TEMPORARILY AND HAVE A HOUSEHOLD ELSEWHERE.
IF MORE THAN 20 INDIVIDUALS, USE SECOND QUESTIONNAIRE.

A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8	A.9	A.10	A.11
Individual ID	Name ***First then Last Name*** ***Make a complete list of all individuals who normally live and eat their meals together in this household, starting with the head of household.***	Is [NAME] male or female? Male…..1 Female..2	What is the relationship of [NAME] to household head? Head……..…1 Wife/Spouse……..2 Child/adopted child……...3 Grandchild……..……..…4 Niece/Nephew….....5 Father/Mother……..…..6 Sister/Brother……..…..7 Son/Daughter-in-law.....8 Brother/Sister-in-law……..9 Father/Mother-in-law…….10 Grandfather/mother……11 Other relative……12 Servant/servant's relative...13 Other non-relative…….....14	How old is [NAME]? ***Record "0" if infant below 1 year old.*** YEARS	***ENUM:*** Is [NAME] 5 years old or older? Yes….1 No…..2→NEXT PERSON	Has [NAME] ever attended school? Yes……1 No…….2→A.10	Is [NAME] currently attending school? Yes……1 No…….2	What is the highest educational qualification acquired by [NAME]? Primary……..1 Secondary O level…...2 Secondary A level...…3 TVET……..……4 Bachelor Degree…….5 Masters…..……6 PhD……..……..7	***Enum:*** Is [NAME] 12 years or older? Yes..1 No....2→NEXT PERSON	What is [NAME]'s marital status? Married, Monogamous…1 Married, Polygamous…..2 Cohabitating, Single Partner...3 Cohabitating, Multiple Partners……....4 Never Married…...5 Divorced……...6 Separated……...7 Widowed……...8
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Comments:

	A.12	A.13	A.14	A.15	A.16	A.17	A.18	A.19	A.20	A.21	A.22
Individual ID	What was [NAME]'s main occupation for the last 12 months? Wage Employee, Non-Farm……1 Wage Employee, Farm…….....2 Self-Employed Non-Farm-Business enterprise.....3 Self-Employed Non-Farm-Independent contractor, technician, professional, etc. ……..4 Self-Employed Agriculture/Livestock ……...5 Assistance in family enterprise…….....6→**A.16** Casual/Day Laborer……..……..7→**A.16** Intern/free labor/voluntary work……..8→**A.16** Contributing family worker……...9→**A.22** Student…….....10→**A.22** Retired/pensioner……11→**A.22** Too old to work……12→**A.22** Disabled……13→**A.22** Job Seeker……14→**A.22** Unemployed……15→**A.22** Other (specify)……555	Is [NAME] the owner of the business/ enterprise that is operated in this household? Yes…….1 No……..2	Is [NAME] involved in the daily operations? Yes…….1 No……..2	How many employees does this business/ enterprise have? Number of employees	Please describe the kind of trade or business [NAME]'s main occupation over the last 12 months is connected with. ~~INDUSTRY CODE~~ BRANCH OF ACTIVITIES	Where did [NAME] primarily engage in this activity? In the household (Indoors)……...1 In the household (Outdoors)……2 Market/Commercial Area……..3 Industrial Site……4 Farm Land (Household)……..5 Farm Land (**Not** Household)..6 Office……7 Other fixed place…..8 Mobile location……9	For how long has [NAME] been engaged in this activity? MONTHS	How many days per week does [NAME] work in this activity? DAYS	Please indicate the monthly income for this activity Local currency	Out of the last 12 months, how many months were you engaged in this activity? ***Max 12*** MONTHS	How frequently does [NAME] cook food for the household? Everyday……1 A few times in a week…...2 Once a week……3 A few times in a month……4 Once a month….5 Never……..6 →**NEXT PERSON**
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Comments:

B. HOUSEHOLD CHARACTERISTICS

Interviewer Instructions: The Respondent should be the head of household.

#	Question	Response	Response Code
B.1	***Enumerator:*** Record Respondent ID for this section		Individual ID from Household Roster
B.2	Does your household live in this dwelling for the entire year?		Yes……1→**B.4** No…….....2
B.3	Is this your main dwelling? ***The dwelling that you live in for most of the year.***		Yes……1 No…….2
B.4	How many years have you been living in this community? ***Record 1 if less than 1.***		Number of years
B.5	What is the type of habitat? ***Check with observation***		Umudugudu (new recommended rural resettlement)…...1 Unplanned clustered rural housing……...2 Isolated rural housing……...3 Urban informal/unplanned housing area…….4 Old resettlement……...5 Modern planned urban area……..6 Other, specify……555
B.6	How many households share the dwelling with you?		Number of households
B.7			
B.8	Do you own this dwelling?		Yes……..…..1 No……..…2→**B10**
B.9	If you sold this dwelling today, how much would you receive for it?		Rwf……..001 Didn't disclosure…….555 Don't know……..888→**B.12**
B.10	Do you use it for free or rent it?		Free……...……....1→**B.12** Rented……...2
B.11	How much do you pay monthly to rent this dwelling?		Rwf →**B.13**
B.12	What is the monthly rent you could receive if you rent this dwelling?		Rwf
B.13	What is the area of the land that this dwelling occupies?		Area in ~~Hectares~~ Sqm
B.14	Do you own the land/ have a long-term lease ?		Yes……..…..1 No……2 →**B.16**
B.15	Do you have a freehold title ~~or a formal administrative documentation~~ of the land on which the property is built?		Yes……..1 No……..…2 Don't Know……888
B.16	How many rooms (excluding the kitchen, toilet, and bathroom) does the household occupy?		Record number of rooms
B.17	The walls of the dwelling are mainly made of what material? ***Check with observation***		Mud bricks……1 Mud bricks with cement (stucco)…….2 Oven fired bricks……..3 Cement blocks……..4 Wooden planks……....5 Stones……..6 Tree trunks with mud……...7 Tree trunks with mud and cement……...8 Plastic sheeting……9 Other, specify…… 555 Don't know……888
B.18	The roof of the dwelling is mainly made of what material? ***Check with observation***		Thatch/leaves/grass……1 Metal sheets/corrugated iron……...2 Tiles clay……3 Concrete……..4 Plastic/plywood/impermanent materials……5 Other, specify…….....555
B.19	The floor of the dwelling is mainly made of what material? ***Check with observation***		Beaten earth……1 Dung hardened……...2 Wooden floor……3 Clay tiles……4 Cement……..5 Bricks……6 Other, specify…….....555
B.20	What type of toilet facility does your household use?		Toilet on water……1 Flush to sewage……..2 Flush to septic tank……....3

Comments:

			Pail/Bucket……..4 Covered pit latrine……5 Uncovered pit latrine……6 Community latrine……...7 None (open field)……8 Other, specify……...555
B.21	What is your household's main source of drinking water?		Pipe borne water treated……1 Pipe borne water untreated……2 Bore hole/ hand pump……3 Electric water pump……..4 Well/spring protected……5 Well/spring unprotected……6 River/spring……..7 Lake/reservoir……..8 Rain water……..9 Tanker/truck/vendor……10 Irrigation channel……11 Bottle water……12 Other, specify……555
B.22	Does anyone in the household have a bank account at a formal financial institution?		Yes……1 No……..2→**B.24**
B.23	At which institution is this account or savings?		Commercial bank……1 Cooperative bank……2 Microfinance institution……..3 Savings & credit cooperatives……4 Other, specify……..555
B.24	Does anyone in the household have an account at an informal institution?		Yes……1 No……..2→**B.26**
B.25	At which informal institution is this account? ***Multiple responses possible***		Savings groups/Ikimina……..…001 Other, specify……555
B.26	Do you have access to credit/loans?		Yes……1 No……..2→**B.30**
B.27	What are the sources of credit/loans? ***Multiple responses possible***		Employer loan……1 Commercial bank……2 Borrowed from relative……...3 Credit Cooperative……..4 Tontine (community)……..5 Informal lenders……6 Microfinance/Non Umurenge SACCO……..7 VUP financial services loan……...8 Ubudehe loan……9 Umurenge SACCO……...10 Other, specify……..555
B.28	Are you currently repaying any loans?		Yes……1 No……..2
B.29	In what Ubudehe category is this household?		Category 1……...001 Category 2……...002 Category 3……...003 Category 4……...004 Appealed ……005 Don't know……..888
B.30	Do you use mobile money to send or receive money over the mobile phone?		To receive……..001 To send……...002 Both……...003 None……..2→ **C**
B.31	How do you use mobile money services? (**mark all that apply**)		Transfer credit to family/relatives……..…1 Pay for Electricity……...2 Pay for Water……...3 Mobile phone top-up/credit……4 Internet top-up/credit……5 Commercial purchases……...6 Insurance……...7 Loan payments……...8 Savings……..9 Get small loans from mobile provider ……..10 Other, specify……555

Comments:

C. SUPPLY OF ELECTRICITY

Instructions: This module should be completed by the most knowledgeable member on household electricity. Concerted answers should be allowed.

C.1	***Enumerator:*** Record Respondent ID for this section	☐	Individual ID from Household Roster
Electricity from National Grid			
C.2	Is the household connected to the national grid?		Yes……..……..1→**C.6** No……..3
C.3	What is the MAIN reason why your household is not connected to the grid? ***Record the MAIN reason.***		Grid is too far from household/not available…….....1 Cost of initial connection is too expensive…..…….2 Monthly fee is too expensive……3 Satisfied with current energy solution……4 Renting, Landlord decision……5 Service Unreliable……..6 Administrative procedure is too complicated……..…7 Submitted application and waiting for connection..…8 Company refused to connect the household……9 Other, specify……555
C.4	Do you expect to get grid connection in the future?		Yes……..…..1 No……..…..2→**C.42**
C.5	When do you expect to get grid connection?	a. MM |__|__| b. YYYY |__|__|__|__|	Month and Year Don't know……888 ***ALL RESPONSES*→C.42**
C.6	How many years have you had this grid connection? ***Record in years, if less than 1 year record 1***		Number of Years……..1 Don't know……..888→**C.42**
C.7	How much did your household pay for the grid connection fee? ***Refer to connection fee ONLY.***		Local currency Don't know……888 Household was already connected……..111→**C.11**
C.8	How much did your household pay for the wiring and any other costs for the grid connection? ***Do not include the connection fee from C.7 here***		Local currency Don't know……888
C.9	How many weeks after you applied for the grid connection did your household get connected?		Number of weeks
C.10	How many weeks after you were connected were you able to use electricity in your home?		Number of weeks
C.11	Who do you currently pay for your electricity service?		Pre-paid meter card seller……...1 Community/village/municipality……..…2 Relative……..3 Neighbor……4 Landlord……5 No one (for free)……6→~~**C.25**~~ Electricity company (EUCL)……7 Other, specify……..555
C.12			
C.13			~~Yes……1~~ ~~No……2→**C.17**~~
C.14	Does your household have an electric meter or a pre-paid meter?		Yes……1 No……2→**C.17**
C.15	Does your household share the electric meter/cash power?		Yes……1 No……2→**C.18**
C.16	How many households are sharing the meter?		Number of Households
C.17	How are you billed for electricity?		Cash power (pre-paid)……1 Monthly bil (post paid)……..2 Fixed monthly fee……..……3 Pay based on lights and appliances used……....4 Utility estimates consumption……..……5 At the time of connection……6→**C.18** Other, specify……555 No bill for electricity……111
C.18	How do you make your electricity bill payment?		Cash……1 Vouchers from local store……2 Credits using mobile money……3 Pay at the utility office……4

Comments:

	Multiple responses possible		Pay at the bank/post office……..5 Other, specify……555
C.19	How often can you pay for your electricity bill?		Monthly……1 Every two weeks……2 Weekly……...3 As often as I want……..4
C.20	***Enumerator: If the respondent pays the energy company or has a record of the electricity payment, ask to see the electricity bill/invoice and use it for C.21 and C.22 .***	☐	Respondent has energy bill and shows it……...1 Respondent has energy bill but refuses to show it or could not locate it……..2 Respondent does not have an energy bill……3
C.21	In the last month, how much did you spend on the electric bill? ***Calculate amount paid from the last bill.***	☐	Local Currency Don't Know……888→**C.18**
C.22	[***CAPI: Calculate the electricity consumption based household spending on electricity***] In the last month how much electricity did your household use? **[*Electricity consumption=C.21/215]***	|__|__|__| kWh	Quantity in Kilowatt Hour (kWh) Don't Know……888
C.23	Is the quality of electricity service the same all year?		Yes……1→**C.25** No……..2
C.24	What are the worst months for service from the grid? ***Multiple responses are possible.*** ***Record all months when household has the lowest number of hours of electricity supply.***	a. |__|__| b. |__|__| c. |__|__| d. |__|__| e. |__|__| f. |__|__| g. |__|__| h. |__|__| i. |__|__| j. |__|__| k. |__|__|	January……1 February……..2 March……...3 April……4 May……5 June……..6 July……...7 August……..8 September……9 October……10 November……11 December……...12
C.25	Do you receive information about a "load-shedding" schedule (set hours of electricity available from the grid)?	|__|	Yes……..1 No……2

		A. WORST MONTHS	**B. TYPICAL MONTH**	
Ask respondent first about the worst months and then about a typical month for C.25-C.31 ***If no seasonal changes, ask only about a typical month. Ask questions by ROW.***				
C.26	How many hours of electricity are available **each day and night** from the grid? (max 24 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.27	How many hours of electricity are available **each evening, from 6:00 pm to 10:00 pm from** the grid**?**(max 4 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.28	How many hours of electricity do you **use** each day and night from the grid? ***Cannot exceed number of available hours in C.26***	☐ hours	☐ hours	Hours of supply Don't know……888
C.29	In a typical day, how **many** outages/blackouts of the grid happen?	☐ # of interruptions	☐ # of interruptions	Number of interruptions Don't know……888
C.30	In a typical day and night (24 hours), what was the **total duration** of all the outages/blackouts?	a. Hours |__|__|__| b. Minutes |__|__|__|	a. Hours |__|__|__| b. Minutes |__|__|__|	Don't know……..888
C.31	In a typical day and night (24 hours), how many hours is electricity **not** available?			Number of hours Don't know……888

C.32	Are the majority of outages in your community announced ahead of time or not?		Mostly announced……..1 Mostly unannounced……..2

Comments:

			Don't know……888
C.33	What is your main back-up source of lighting during outages/blackouts of the grid?		Generator……1 Battery and Storage Devices (e.g.: car battery)……..2 Solar Home System……3 Solar Lantern/Lighting system……4 Kerosene lamp……5 Candle……6 Torch/flashlight……7 Open wick lamp……8 Other, specify……555 No back-up source……111
C.34	What is your main back-up source of electricity for appliances during outages/blackouts of the grid?		Generator……1 Battery and Storage Devices (e.g.: car battery)……..2 Solar Home System……3 Solar Lantern/Lighting system……4 Other, specify……555 No back-up source……111
C.35	During the last electricity power outage, what was the main way in which you and other household members were affected? ***Multiple responses possible (up to 3)***		Used alternate energy sources ……1 Wasted perishable products/discarded damaged goods…2 Machines/appliances were damaged……3 Could not operate a household business……4 Children could not study……5 Could not cook……6 Could not do household chores……7 Could not watch TV/listen to Radio……8 Could not charge a phone……9 Other, specify……555 Not affected……111
C.36	How do you request for repairs in electricity service or file a complaint?		Call utility company……1 Call a local technician……2 Send a letter……3 Talk to community representative……4 No system to request repairs/file complaint……5 Other, specify……555
C.37	When there is a blackout in your community, who do you usually approach for assistance?		The power company……1 Someone not from power company……2 No-one: we wait until power returns……3→**C.39**
C.38	The last time you asked for assistance, how many days after you contacted [C.37 response] did they come to fix the problem?		Number of days
C.39	In the last 12 months, did any of your appliances get damaged because the voltage was going up and down from the grid?	☐	Yes……1 No……2 Don't know……888
C.40	What are the most serious problems you experience with your grid electricity? ***Record up to 2 responses.***	a. First |__|__|__| b. Second |__|__|__|	Supply shortage/not enough hours of electricity……1 Low/high voltage problems or voltage fluctuations……2 Unpredictable interruptions……3 Unexpectedly high bills……4 Too expensive……5 Do not trust the supplier……6 Cannot power large appliances……7 Maintenance/service problems……8 Unpredictable bills……9 Other, specify……555 No problems……111
C.41	In the last 12 months, did any household members die or have permanent limb (bodily injury) damage because of the grid electricity?		Yes……1 No……2
Electricity from Mini Grid			
C.42	Is the household connected to a mini-grid?		Yes……1 No……2→**C.84**
C.43	Is there a limit for the load and/or appliances you are allowed to power from this mini-grid?		Yes……1 No……2 Don't Know……888
C.44	What is the name of the local mini-grid company?		Name of company
C.45	How many years have you had this mini-grid connection? ***Record in years, if less than 1 year record 1***		Number of Years
C.46	How much did your household pay for the mini-grid connection fee? ***Refer to connection cost ONLY.***		Local currency Don't know……888 Household was already connected……..111→**C.50**Error! Reference source not found.

Comments:

C.47	How much did your household pay for the wiring and any other costs for the mini-grid connection? ***Do not include the connection fee from C.46 here***		Local currency Don't know……888
C.48	How many weeks after you applied for the mini-grid connection did your household get connected?		Number of weeks
C.49	How many weeks after you were connected were you able to use electricity in your home?		Number of weeks
C.50	What service do you have from the mini-grid?		Lights……...1 Ironing……..2 Cooking……3 Radio/TV……..4 Charging telephone……..5 Other (specify)…….555
C.51	Have you applied for an upgrade of service since you connected to the mini-grid?		Yes……..1 No……2
C.52	Who do you currently pay for your electricity service?		Energy company……..…1 Pre-paid meter card seller……...2 Community/village/municipality……..…3 Landlord……4 No one/For free……7→**C.64** Other, specify……..555
C.53	Does your household have an electric meter?		Yes……1 No……2→**C.57**
C.54	Is this a pre-paid meter?		Yes……1 No……2
C.55	Does your household share the electric meter?		Yes……1 No……2→**C.58**
C.56	How many households are sharing the meter?		Number of Households ***ALL***→**C.58**
C.57	How are you billed for electricity?		Fixed monthly fee……..……1 Pay based on lights and appliances used……...2 Utility estimates consumption……..……3 Other, specify……555 No bill for electricity……111
C.58	How do you make your electricity bill payment?		Cash……1 Vouchers from local store……2 Credits using mobile money……3
C.59	How often can you pay for your electricity bill?		Monthly……..1 Weekly……...2 As often as I want……...3
C.60	Were you involved in setting the rate for the mini-grid?		Yes……1 No……2→**C.62**
C.61	How were you involved in the tariff setting?		Community meeting……..1 Contacted by mini-grid company…..2 Member of electricity committee…..3 Member of cooperative……4 Other, specify……555
C.62	***Enumerator: If the respondent pays the energy company or has a record of the electricity payment, ask to see the electricity bill/invoice and use it for C.63 and C.64.***	☐	Respondent has energy bill and shows it……...1 Respondent has energy bill but refuses to show it or could not locate it……..2 Respondent does not have an energy bill……3
C.63	In the last month, how much did you spend on the electric bill? ***Calculate amount paid from the last bill.***	☐	Local Currency Don't Know……888
C.64	In the last month how much electricity did your household use?	|__|__|__| kWh	Quantity in Kilowatt Hour (kWh) Don't Know……888
C.65	Is the quality of electricity service the same all year?	|__|	Yes……1→**C.67** No……..2
C.66	What are the worst months for service from the mini-grid? ***Multiple responses are possible.*** ***Record all months when household has the lowest number of hours of electricity supply.***	a. |__|__| b. |__|__| c. |__|__| d. |__|__| e. |__|__| f. |__|__| g. |__|__| h. |__|__|	January……1 February……..2 March……...3 April……4 May……..5 June……..6 July……...7 August……..8 September……9 October……10

Comments:

		i. |__|__| j. |__|__| k. |__|__|	November……..11 December……...12
Ask respondent first about the worst months and then about a typical month for C.67- C.73 If no seasonal changes, ask only about a typical month. Ask questions by ROW.		**A. WORST MONTHS**	**B. TYPICAL MONTH**
C.67	Do you receive information about a "load-shedding" schedule (announces hours of electricity available from the mini-grid)?		Yes……..1 No……2
C.68	How many hours of electricity are available **each day and night** from the mini-grid? (max 24 hours)	☐ hours	☐ hours Hours of supply Don't know……888
C.69	How many hours of electricity are available **each evening, from 6:00 pm to 10:00 pm from** the mini-grid**?**(max 4 hours)	☐ hours	☐ hours Hours of supply Don't know……888
C.70	How many hours of electricity do you **use** each day from the mini-grid? ***Cannot exceed number of available hours in C.68***	☐ hours	☐ hours Hours of supply Don't know……888
C.71	In a typical day, how **many** outages/blackouts of the mini-grid happen?	☐	☐ Number of interruptions Don't know……888
C.72	In a typical day and night (24 hours), what was the **total duration** of all the outages/blackouts?	c. Hours |__|__|__| d. Minutes |__|__|__|	c. Hours |__|__|__| d. Minutes |__|__|__| Don't know……..888
C.73	In a typical day and night (24 hours), how many hours is electricity not available?		Number of hours Don't know……888

C.74	Are the majority of outages in your community announced ahead of time or not?		Mostly announced……..1 Mostly unannounced……..2 Don't know……888
C.75	What is your main back-up source of lighting during outages/blackouts of the grid?		Generator……..…..1 Battery and Storage Devices (e.g.: car battery)…….....2 Solar Home System……3 Solar Lantern/Lighting system……..…4 Kerosene lamp……..…..5 Candle……...6 Torch/flashlight……7 Open wick lamp……...8 Other, specify……..…555 No back-up source……111
C.76	What is your main back-up source of electricity for appliances during outages/blackouts of the mini-grid?		Generator……..…..1 Battery and Storage Devices (e.g.: car battery)…….....2 Solar Home System……3 Solar Lantern/Lighting system…..……..…4 Other, specify……..…555 No back-up source……111
C.77	During the last electricity power outage, what was the main way in which you and other household members were affected? ***Multiple responses possible (up to 3)***		Used alternate energy sources ……..……1 Wasted perishable products/discarded damaged goods……2 Machines/appliances were damaged……..……..3 Could not operate a household business……4 Children could not study……...5 Could not cook……..6 Could not do household chores……7 Could not watch TV……..8 Could not charge a phone……9 Other, specify……555 Not affected……..……111
C.78	How do you request for repairs in electricity service or file a complaint?		Call mini-grid operator……1 Call a local technician……2 Send a letter……....3 Talk to community representative……...4

Comments:

			No system to request repairs/file complaint……5 Other, specify……555
C.79	When there is a blackout in your community, who do you usually approach for assistance?		The power company……1 Someone not from power company……2 No-one: we wait until power returns……..…..3
C.80	The last time you asked for assistance, how many days after you contacted [C.79 response] did they come to fix the problem?		Number of days
C.81	In the last 12 months, did any of your appliances get damaged because the voltage was going up and down from the grid?	☐	Yes……1 No……..2 Don't know……888
C.82	What are the most serious problems you experience with your grid electricity? ***Record up to 2 responses.***	c. First |__|__|__| d. Second |__|__|__|	Supply shortage/not enough hours of electricity...……1 Low/high voltage problems or voltage fluctuations……..…2 Unpredictable interruptions……3 Unexpectedly high bills……..4 Too expensive……5 Do not trust the supplier……6 Cannot power large appliances……..7 Maintenance/service problems……...8 Unpredictable bills……9 Other, specify……555 No problems……111
C.83	In the last 12 months, did any household members die or have permanent limb (bodily injury) damage because of the grid electricity?		Yes……..…..1 No……..….2

Electric Generator set			
C.84	In the last 12 months, did the household use a generator to supply electricity?		Yes……..…..1 No……..….2→**C.143**
C.85	How many generators does your household use to supply electricity? ***If multiple generators, ask following questions about main generator.***		Number of generators
C.86	Do you share this generator with other households?		Yes……..…..1 No……..….2→**C.88**
C.87	How many households are sharing electricity from this generator?		Number of households Don't know……..888
C.88	***Enumerator Observation:*** What is the capacity of the generator? ***Read name plate of the generator.***		kW
C.89	In the last 12 months, in which months did you use this generator or did you use it all year? ***Multiple responses possible***	a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__| e. |__|__|__| f. |__|__|__| g. |__|__|__| h. |__|__|__| i. |__|__|__| j. |__|__|__| k. |__|__|__|	January……1 February……..2 March……..3 April……4 May……..5 June……..6 July……..7 August……..8 September……9 October……10 November……11 December……...12 Used all year……...111
C.90	How many days per month did you typically use this generator?		Number of days
C.91	In the last 12 months, what did your household use this generator for? ***Multiple responses possible***	a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__|	Lighting……1 Appliances……..2 Home-based income activity……3 Other, specify……555
C.92	How many years have you used this generator? ***Record in years, if less than 1 year record 1***		Number of Years
C.93	Does your household own the generator?		Yes……1→**C.98** No……2
C.94	Who owns the generator?		Other Household……...……..…...1 Community organization……2

Comments:

			Private person/entity……..3 Other, specify……..555
C.95	Do you rent the generator or use it for free?		Rent……1 Use for free……2→**C.100**
C.96	How do you pay for electricity services from the generator?		Fixed payment (per month or week) ……1 Charge by number of lights/appliances……2 Charge per kWh……..3 Pay for fuel only……..4→**C.100** Other, specify……..555
C.97	In the months that you use it, how much did you pay to use the generator each month? ***Do not include any cost of fuel, only fee for using the GENERATOR.***		Local currency Don't know……888 **ALL→C.99**
C.98	How much did you pay to purchase the generator?		Local currency Don't know……888
C.99	In the last 12 months, how much did you pay for repairs/parts/maintenance of the generator?		Local currency Don't know……888
C.100	What fuel is used to power the generator?		Diesel……1 Gasoline……2 Other, specify……555 Don't know……888
C.101	In the last 30 days, what was the total quantity of fuel used to power the generator?		Liters Don't know……..888
C.102	Do you pay for the fuel used to power the generator?		Yes……..1 No……2→**C.105**
C.103	What is the price per liter?		Local currency Don't know……888
C.104	In the last 30 days, how much did your household spend on fuel for this generator?		Local currency Don't know……888

C.105	Are there certain months/seasons **every year** when less fuel is available to power the generator?		Yes……1 No……..2→**C.107B**
C.106	What are the worst months of fuel availability for the generator? ***Multiple responses are possible.*** ***Record all months for the worst fuel availability.***	a. |__|__| b. |__|__| c. |__|__| d. |__|__| e. |__|__| f. |__|__| g. |__|__| h. |__|__| i. |__|__| j. |__|__| k. |__|__|	January……1 February……..2 March……..3 April……4 May……..5 June……..6 July……..7 August……..8 September……9 October……10 November……11 December……...12

Ask respondent first about the worst months and then about a typical month for C.107-C.109 If no seasonal changes, ask only about a typical month. Ask questions by ROW.		**A. WORST MONTHS**	**B. TYPICAL MONTH**	
C.107	How many hours could you use this generator **each day and night** if you wanted to? (max 24 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.108	How many hours could you use this generator **each evening, from 6:00 pm to 10:00 pm** if you wanted to**?**(max 4 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.109	How many hours do you actually use this generator **each day**? (max 24 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.110	In the last 12 months, did any of your appliances get damaged because the voltage was going up and down from the generator?			Yes……1 No……..2 Don't know……888

Comments:

C.111	What are the most serious problems you experience with the generator? ***Record up to 2 responses.***	a. First |__|__|__| b. Second |__|__|__|	Supply shortage/not enough hours of electricity……1 Low/high voltage problems or voltage fluctuations……2 Unpredictable interruptions……3 Unexpectedly high bills……4 Too expensive to use generator……5 Do not trust the supplier……6 Cannot power large appliances……7 Availability of fuel……8 Fuel is too expensive……9 Maintenance/service problems……10 Other, specify……555 No problems……111
C.112	In the last 12 months, did any household members die or have permanent limb (bodily injury) damage because of the generator?		Yes……1 No……2

Rechargeable Battery (Car Battery, etc)			
C.113	In the last 12 months, did the household use any rechargeable batteries, such as car batteries, for electricity?		Yes……1 No……2→**C.131**
C.114	In the last 12 months, in which months did you use rechargeable batteries or did you use it all year? ***Multiple responses possible***	a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__| e. |__|__|__| f. |__|__|__| g. |__|__|__| h. |__|__|__| i. |__|__|__| j. |__|__|__| k. |__|__|__|	January……1 February……2 March……3 April……4 May……5 June……6 July……7 August……8 September……9 October……10 November……11 December……12 Used all year……111
C.115	In the last 12 months, what did your household use rechargeable batteries for? ***Multiple responses possible***	a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__|	Lighting……1 Appliances……2 Home-based income activity……3 Other, specify……555
C.116	Does your household have an inverter that allows you to use AC appliances?		Yes……1 No……2→**C.118**
C.117	What is the capacity of the inverter?		kW
C.118	How many rechargeable batteries total are you using in a typical month? ***Total=number of batteries*number of charges for each battery***		Number of Batteries
C.119	What is the capacity of the rechargeable batteries? ***If multiple batteries, record capacity for each.***	Capacity a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__|	Ampere-hour
C.120	What is the voltage of the rechargeable batteries? ***If multiple batteries, record voltage for each.***	Voltage a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__|	Volts
C.121	What is the cost to purchase the rechargeable battery? ***If multiple batteries, record costs for each***	a. |__|__|__|__| b. |__|__|__|__| c. |__|__|__|__| d. |__|__|__|__|	Local currency Don't Know……888
C.122	How many recharges for all batteries does your household have in a typical month?	a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__|	Number of Recharges
C.123	Do you pay to recharge the battery?		Yes……1 No……2→**C.125**

Comments:

C.124	How much does your household spend in a typical month to recharge the batteries (in total)?		Local currency Don't Know……888
C.125	What is the electricity source used to recharge the battery?		National grid……..1 Local mini-grid……..2 Electric generator……..3 Solar……4 Other, specify……..555
C.126	Is battery recharging limited by availability of electricity from [SOURCE FROM C.125]?		Yes……1 No……2
C.127	How many hours could you use rechargeable batteries for electricity supply **each day when fully charged** if you wanted to? (max 24 hours)		Hours Don't Know……888
C.128	How many hours do you actually use rechargeable batteries for electricity supply **each day**? ***Cannot exceed number of hours in C.127***		Hours Don't Know……888
C.129	What are the most serious problems you experience with the rechargeable batteries? ***Record up to 2 responses.***	a. First |__|__|__| b. Second |__|__|__|	Supply shortage/not enough hours of electricity…..1 Too expensive.....2 Cannot power large appliances……..3 Recharging is not convenient……...4 Maintenance & repair is difficult……..5 Cannot recharge battery to full capacity……..6 Other, specify……555 No problems……111
C.130	In the last 12 months, did any household members die or have permanent limb (bodily injury) damage because of the rechargeable batteries?		Yes……1 No……..2
Pico-Hydro			
C.131	In the last 12 months, did the household use a pico-hydro system for electricity?		Yes……1 No……..2→**C.143**
C.132	In the last 12 months, in which months did you use the pico-hydro system or did you use it all year? ***Multiple responses possible***	a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__| e. |__|__|__| f. |__|__|__| g. |__|__|__| h. |__|__|__| i. |__|__|__| j. |__|__|__| k. |__|__|__|	January……1 February……..2 March……...3 April……4 May……..5 June……..6 July……...7 August……..8 September……9 October……10 November……11 December……...12 Used all year……...111
C.133	In the last 12 months, what did your household use the pico-hydro system for? ***Multiple responses possible***	a. |__|__|__| b. |__|__|__| c. |__|__|__| d. |__|__|__|	Lighting……1 Appliances……..2 Home-based income activity……3 Other, specify……555
C.134	In the last 12 months, how much did you pay for repairs/parts/maintenance of the pico-hydro system?		Local currency Don't know……888
C.135	Are there certain months/seasons **every year** when less water is available for the pico-hydro system?		Yes……1 No……..2→**C.137**
C.136	What are the worst months (dry season) for the pico-hydro system? ***Multiple responses are possible.*** ***Record all months for the worst fuel availability.***	a. |__|__| b. |__|__| c. |__|__| d. |__|__| e. |__|__| f. |__|__| g. |__|__| h. |__|__| i. |__|__| j. |__|__| k. |__|__|	January……..1 February……..2 March……3 April……...4 May……5 June……6 July……....7 August……8 September……..…9 October……10 November……11 December……....12 Whole year……111

Comments:

Ask respondent first about the worst months and then about a typical month for C.137-C.139. If no seasonal changes, ask only about a typical month. Ask questions by ROW.		**A. WORST MONTHS**	**B. TYPICAL MONTH**	
C.137	How many hours could you use this pico-hydro system **each day and night** if you wanted to? (max 24 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.138	How many hours could you use this pico-hydro system **each evening, from 6:00 pm to 10:00 pm** if you wanted to**?**(max 4 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.139	How many hours do you actually use this pico-hydro system **each day**? (max 24 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.140	In the last 12 months, did any of your appliances get damaged because the voltage was going up and down from the generator?		Yes……1 No……2 Don't know……888	
C.141	What are the most serious problems you experience with the pico-hydro system? ***Record up to 2 responses.***	c. First |__|__|__| d. Second |__|__|__|	Supply shortage/not enough hours of electricity……1 Low/high voltage problems or voltage fluctuations……2 Unpredictable interruptions……3 Unexpectedly high bills……4 Too expensive to use generator……5 Do not trust the supplier……6 Cannot power large appliances……7 Availability of fuel……8 Fuel is too expensive……9 Maintenance/service problems……10 Other, specify……555 No problems……111	
C.142	In the last 12 months, did any household members die or have permanent limb (bodily injury) damage because of the pico-hydro system?		Yes……1 No……2	

Comments:

SOLAR BASED DEVICES

Ask about all devices in order of importance (Example: Main Solar System is Device 1)

C.143	***Interviewer/CAPI check:*** In the last 12 months, did the household use a Solar Home System and/or any Solar Lanterns/Lighting Systems?		Yes…….1 No……..2→**C.182**
C.144	How many solar home systems (SHS) do you have?		Number of solar home systems
C.145	How many solar lighting systems do you have?		Number of solar lighting system
C.146	How many solar lanterns do you have?		Number of solar lanterns

C.147	C.148	C.149	C.150	C.151	C.152	C.153	C.154	C.155	C.156	C.157	C.158	C.159	C.160	C.161	C.162	C.163
SOLAR DEVICE	Please show me the [DEVICE] ***Use photo aid and record the code for the photo that best matches the solar device***	What is the manufacturer and model of the [DEVICE]?	How many light bulbs are there (that can be separated from each other)?	What is the power rating of the solar panel? ***If unknown, enter "888"*** ***Read the name plate of the solar panel***	***ENUM:*** What is the size of the solar panel? ***If not accessible, enter "999"*** ***See instruction manual for how to measure.*** ***Record in CM.***		What is the capacity of the battery?	Do you have an inverter?	How many years have you had this [DEVICE]? ***Record in years, if less than 1, record 1***	Who decided to purchase/ acquire this device?	Did you buy this [DEVICE] paying upfront or under installment, do you rent it/pay a fee to use it, or did you receive it for free?	Who gave you this [DEVICE]?	How much did you pay for this device upfront? ***Full amount→ C.163*** ~~***Partial amount→ C.162***~~	What payment system do you use?	What is the monthly payment for this device (installment / fee to rent/use)?	Did/do you borrow money to make your payment for [DEVICE]?
	PHOTO CODE		NUMBER OF LIGHT BULBS	QUANT. in Watt-Peak (Wp)	WIDTH (CM)	LENGTH (CM)	Amp-hours (Ah)	Yes...1 No…2	NUMBER OF YEARS	MEMBER ID	Received for free….1 Bought, fully paid…..……2→**C.160** Bought, under installment..3→**C.160** Rent/pay fee to use……..4→**C.161**	Local private organizations (NGO)…….1 Chief of village…….2 Local government …3 Other, specify…….555 ***ALL →C.164***	LOCAL CURRENCY	Mobile Pay-as-you-go…….1 Other Pay-as-you go (scratch card, etc.)……2 Fixed fee……..3	LOCAL CURRENCY	Yes….1 No…..2
1																
2																
3																
4																
5																

Comments:

SOLAR DEVICE	C.164	C.165	C.166	C.167	C.168	C.169
	Did you receive information and training on this device?	In the last 12 months, in which months is service available from [DEVICE] if you wanted to use it? ***Multiple responses possible***	How many hours **of service is available from** [DEVICE]each day?	How many hours **of service is available from** [DEVICE] in the evening from 6:00 PM to 10:00 PM?	How many hours **do you use** [DEVICE] for lighting and other applications each day?	What is the most serious problem you experience with [DEVICE]?
	Yes…1 No….2	MONTH CODE Used all year.....111	HOURS	HOURS	HOURS	Duration of service too short……..1 Too expensive.....2 Cannot power large appliances…….....3 Breaks too often…..4 Maintenance and availability of spare parts……..5 Quality of light…..6 Battery problems…7 Other, specify…….555 No problems……..111
1		a. |__|__|__| b. |__|__|__|				
2		a. |__|__|__| b. |__|__|__|				
3		a. |__|__|__| b. |__|__|__|				
4		a. |__|__|__| b. |__|__|__				
5		a. |__|__|__| b. |__|__|__|				

Comments:

MAIN SOLAR-BASED DEVICE

Record information for the MAIN solar-based device, the device listed as "1" in the previous table.

C.170	Are there certain months/seasons **every year** when the service is worse from [DEVICE]?		Yes……1 No……2→**C.172**
C.171	What are the worst months for service from [DEVICE]? ***Multiple responses are possible.*** ***Record all months for the lowest hours of service.***	a. |__|__| b. |__|__| c. |__|__| d. |__|__| e. |__|__| f. |__|__| g. |__|__| h. |__|__| i. |__|__| j. |__|__| k. |__|__|	January……1 February……2 March……3 April……4 May……5 June……6 July……7 August……8 September……9 October……10 November……11 December……12

Ask respondent first about the worst months and then about a typical month for C.172-C.174 If no seasonal changes, ask only about a typical month. Ask questions by ROW.		**A. WORST MONTHS**	**B. TYPICAL MONTH**	
C.172	How many hours do you receive service from this [DEVICE] **each day and night**? (max 24 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.173	How many hours is service available from this[DEVICE] **each evening, from 6:00 pm to 10:00 pm?**(max 4 hours)	☐ hours	☐ hours	Hours of supply Don't know……888
C.174	How many hours do you actually use the [DEVICE] **each day** for lighting and other applications? (max 24 hours) ***Cannot exceed hours in C.172***	☐ hours	☐ hours	Hours of supply Don't know……888
C.175	In the last 12 months, did any household members die or have permanent limb (bodily injury) damage because of the [DEVICE]?			Yes……1 No……2
C.176	Overall, how satisfied with the service provided by the main solar device?			Very satisfied……1 Somewhat satisfied……2 Neutral……3 Unsatisfied……4 Very unsatisfied……5
C.177	In what year did you get your first solar device?			Year Don't know……888
C.178	Has solar been your main source of lighting/electricity since **[YEAR in C.177]**?			Yes……1→ **C.180** No……2 Don't know……888
C.179	What was your main source of lighting/electricity when it was not a solar device?			National grid connection……1 Local mini grid connection……2 Electric generator……3 Rechargeable battery and storage devices (e.g.: car battery)……4 Dry-cell battery (Torch/ flashlight)……5 Fuel-based lighting/Candle ……6 Non-rechargeable lanterns……7 Pico-hydro……8 Other, specify……555
C.180	Compared to the first time you used solar lighting, do you currently… ***Read aloud options***			Use more solar lighting……1 Use about the same solar lighting……2 Use less solar lighting……3 Don't know……888
C.181	What appliances do you use today that you did not use with your first solar lighting device?			Mobile phone charger……1 Radio……2 TV……3 Fan……4 Refrigerator……5 No change……6 Other, specify……555

Comments:

Main Source of Electricity			
C.182	Of all the sources that you mentioned above, which is the source that you use most of the time in your household? ***This will be the MAIN electricity source that is referred to later.***		National Grid Connection……..……1 Local Mini Grid……..…….....2 Generator (Connecting one or more households)…….3 Solar Home System……..4 Solar Lantern/Lighting System..……..5 Rechargeable Battery……...6 Pico-Hydro……...7 No electricity……....8→ **D** Other (specify)……..555
C.183	***Interviewer/CAPI:*** Calculate the hours of electricity supply from each of the sources above and record the most used electricity source here. ***If it does not match, consider the source reported in C.182 as the main source.***		National Grid Connection…….……..1 Local Mini Grid…….....2 Generator (Connecting one or more households)…....3 Solar Home System……4 Solar Lantern/Lighting System..……..5 Rechargeable Battery……...6 Pico-Hydro……..7 Other, specify……...555
CHARGING MOBILE PHONE			
C.184	Are members of your household able to charge a mobile phone inside your dwelling?		Yes……..1 No……..2 → **C.188** No mobile phones……...111→ **D**
C.185	Are members of your household able to charge all their mobile phones as often as they need inside your dwelling?		Yes……1→ **D** No…….2
C.186	Can you charge at least one mobile phone to full charge everyday inside your dwelling?		Yes……1→ **D** No……..2
C.187	Can you charge at least one mobile phone to full charge in 3 days inside your dwelling?		Yes……1 No…….2
C.188	Do members of your household have to go more than 500 meters (walk more than 5 minutes) to charge your mobile phones outside your dwelling?	☐	Yes……..1 No……..….2
C.189	How many mobile phones do members of your household charge outside your dwelling?		Number of mobile phones ***If 0*** → **D**
C.190	How much does your household spend each month (in total) on mobile phone charging outside your dwelling?		Local currency

Comments:

D. WILLINGNESS TO PAY FOR A GRID CONNECTION

Respondent should be most knowledgeable member on household electricity.

D.1	***Interviewer/CAPI check:*** Is the household connected to the national grid?		Yes……1→**E** No……2
D.2	***Enumerator:*** Record Respondent ID for this section	☐	Individual ID from Household Roster
As you know, electricity requires several types of payments: There are three parts to the cost of electricity: connection, wiring, and monthly use. In other words, to use electricity you need to have a wire from a meter in your house to the pole first. That is the connection. You also need to have wires to connect appliances within your house to the meter. This is the wiring. Finally, to keep using electricity you must pay for what is used and measured by the meter, or it will be turned off, this is the cost of monthly use. I would like to ask you questions only about the cost of connecting – getting a wire from the electricity poles to a meter on your house.			
I would now like you to think about a situation that is not real. Let's say you could pay a "lump sum" price for an electricity connection. In other words, you are offered a price and a period of time to decide whether to take this price. If you decide to take the price, you have to pay all at once, after which you are immediately connected. As you answer the next few questions, assume that all other wiring fees and monthly service fees for using electricity, once you have the connection, remain the same as they are now.			
D.3	Would you be willing to pay 56,000 RWF for an electricity connection upfront?		Yes……1→ **E** No……2
D.4	Would you be willing to pay 56,000 RWF for an electricity connection if you have to pay 15,000 RWF upfront and you were given 24 months to complete the rest of payment?		Yes……1→ **E** No……2
D.5	Would you be willing to pay 28,000 RWF for an electricity connection upfront?		Yes……1→ **E** No……2
D.6	Why would you not accept the offer?		Cannot afford the payment……1 Do not need electricity……..2 Electricity service is unreliable….3 Monthly fee is too expensive……4 Other, specify……555
D.7	How much would you be willing to pay if you have to pay upfront?		Local currency Don't know……...888
D.8	How much would you be willing to pay if you were given 24 months to complete the payment?		Local currency Don't know……...888

Comments:

E. WILLINGNESS TO PAY FOR SOLAR DEVICE

Respondent should be most knowledgeable member on household electricity. This module will be addressed only to households that do not have a grid or mini-grid connection or an equivalent or larger solar system. So, the question will be asked to households whose only source of electricity is a diesel genset, rechargeable battery (dry-cell batt), solar lantern, and/or those without any electricity.

For each household, please randomly assign one of the two following solar devices: D20 (d. light)-76,000 RWF and Mobisol Dassy Enterprise-520,000 RWF with three different percentages: 33%, 66%, and 100%. Consequently, we will assign randomly one of four prices as follow: 25000, 50000, and 76000; 170000, 350000, and 520000 to a respondent. CAPI will apply this number [CF] randomly/automatically to the following questions.

Please, show the picture of solar device and explain the benefit of having this product.

- ***D20- multiple lightbulbs and mobile charging***
- ***Mobisol solar home system- multiple light bulbs (5), mobile charging, and Television.***

E.1	***Enumerator:*** Record Respondent ID for this section	☐	Individual ID from Household Roster
E.2	Would you be willing to pay RWF {CF} for this solar device?		Yes……1 No……2
E.3	Imagine that you were offered this solar device at this price today, and you were given 6 months to complete the payment. Would you accept the offer?		Yes……1→**E** No……2 Don't Know……888
E.4	Why would you not accept the offer?		Cannot afford the payment……1 Do not need electricity……..2 Electricity service is unreliable….3 Monthly fee is too expensive……4 Other, specify……555
E.5	Instead of 6 months, imagine you were offered this solar device at this price today, and you were given 12 months to complete the payment. Would you accept the offer?		Yes……1→**E** No……2 Don't Know……888
E.6	Why would you not accept the offer?		Cannot afford the payment……1 Do not need electricity……..2 Electricity service is unreliable….3 Monthly fee is too expensive……4 Other, specify……555
E.7	Instead of 12 months, imagine you were offered this solar device at this price today, and you were given 24 months to complete the payment. Would you accept the offer?		Yes……1→**E** No……2 Don't Know……888
E.8	Why would you not accept the offer?		Cannot afford the payment……1 Do not need electricity……..2 Electricity service is unreliable….3 Monthly fee is too expensive……4 Other, specify……555

Comments:

F. KEROSENE/FUEL-BASED /CANDLE LIGHTING

The respondent should be most knowledgeable household member on household use of kerosene and candles.

F.1	***Enumerator:*** Record Respondent ID for this section		Individual ID from Household Roster

F.2	F.3	F.4	F.5	F.6	F.7	F.8	F.9	F.10	F.11	F.12	F.13	F.14
FUEL LAMP/ CANDLE/ TASK LIGHT	In the last 12 months, did you use [NAME FROM THE LIST] ***Use photo aid to identify lamp type*** Candle……1→**F.7** Open wick lamp……..2 Hurricane lamp with glass cover……..3 Pressurized mantle lamp……4 None……5→**G** Other, specify…555 ***Use a separate row for each TYPE of lamp/candle***	What is the main fuel source for [LAMP]? Kerosene/ paraffin…….1 Diesel……..2 Gasoline…..3 Biogas……..4 Other, specify.....555	How many of these lamps does your household have? NUMBER OF LAMPS	How much did you pay for each [LAMP]? ***If paying in installment, enter total value of payments*** LOCAL CURRENCY	In the last 12 months, how many months did you use [LAMP/ CANDLE]? NUMBER OF MONTHS	In the last 12 months, in which months do you use [LAMP/ CANDLE] **the most**? ***Multiple responses possible*** MONTH CODE Used the same every month.....111	In the last 12 months, in which months was the fuel for [LAMP/ CANDLE] not available? ***Multiple responses possible*** MONTH CODE Available all year.....111	What is the total quantity of [FUEL/ CANDLE] you use in a typical week? LITRES/ NUMBER OF CANDLES	How much do you spend on [FUEL/ CANDLE] in a typical week? LOCAL CURRENCY	How many hours do you use [LAMP/ CANDLE]ea ch day? HOURS	What are the most serious problems you experience with [LAMP/ CANDLE]? ***Record up to 2 responses*** Lantern too expensive…….1 Fuel too expensive.....2 Fuel not available……3 Accidents can happen.....4 Bad for health……..5 Subsidies needed……6 Time spent to collect fuel…7 Other, specify……555 No problems……111	In the last 12 months, what type of harm/injury did any household members have from [LAMP/ CANDLE]? ***Multiple responses possible*** Death or permanent limb damage……..1 Burns/fire……..2 Poisoning……3 Eye problems……..4 Respiratory problem……..5 Other major injury……6 Minor injury……..7 Fire with no injury……8 None……111
1											a. |__|__|__| b. |__|__|__|	
2											a. |__|__|__| b. |__|__|__|	
3											a. |__|__|__| b. |__|__|__|	
4											a. |__|__|__| b. |__|__|__|	
5											a. |__|__|__| b. |__|__|__|	

Comments:

G. DRY-CELL BATTERIES

G.1	***Enumerator:*** Record Respondent ID for this section		Individual ID from Household Roster

G.2	G.3	G.4	G.5	G.6	G.7	G.8	G.9	G.10	G.11	G.12
LIGHT SOURCE	In the last 12 months, did you use dry cell batteries to power [NAME FROM THE LIST] ***Use photo aid to identify lamp type*** Lanterns……1 Flashlights....2 Task lights....3 Radio….4 None……5→**H** Other, specify…555 ***Use a separate row for each TYPE of lighting***	How many of [ITEM] does your household charge with dry cell batteries? NUMBER OF LIGHT SOURCE	How much did you pay for each [ITEM]? ***If paying in installment, enter total value of payments*** LOCAL CURRENCY	In the last 12 months, how many months did you use [ITEM]? NUMBER OF MONTHS	In the last 12 months, in which months do ITEM] **the most used**? ***Multiple responses possible*** MONTH CODE Used the same every month.....111	How many of [ITEM] do you purchase **each year**? NUMBER OF LIGHT SOURCE	How much do you spend each month on dry cell batteries for [ITEM]? LOCAL CURRENCY	Do you use [ITEM] inside or outside the house? Inside house…1 Outside house..2	Do you use [ITEM] as a regular source of lighting or only as a back-up source when the main source is not available? Regular source of lighting….1 Back-up source of lighting…2	How many hours do you use [LIGHT] each day on a typical day? HOURS Please, record 1 if less than 1 hour
1										
2										
3										
4										
5										

G.13	***Interviewer/CAPI Check:*** Does the household have any children currently enrolled in school (primary through secondary school)? ***Check A.8***		Yes…….1 No……..2→**G.15**
G.14	What is the main source of lighting the children who are currently enrolled in school usually use for studying/doing homework?		Electric lighting/lamp (EUCL/Minigrid/Pico/Electric generator).1 Solar powered light source……2 Battery-operated light source……3 Street lighting……4 Kerosene lamp……5 Candles……..6 Biogas lamps……...7 Other, specify……..555 Studying and homework only during daylight hours……..111 Other, specify……..555
G.15	At night, what do you mainly use to light your household? ***Single response***		No lighting……...1 Electricity from grid or mini-grid……2 Electricity from solar home system…….3 Electricity from generator……4 Light from cookstove……...5 Solar Lantern/Lighting system…….6 Rechargeable flashlight, torch or lantern….7 Non-rechargeable battery, flashlight, torch, Lantern or task light……8 Gas lamp……..9 Biogas lamp……..10 Kerosene Lamp……..11 Charcoal……12 Wood……13 Crop residues/grass/straw/shrubs……..14 Oil lamp……15 Candle……...16 Other, specify……..555

Comments:

H. HOUSEHOLD FUEL CONSUMPTION

Respondent should be household member who most frequently cooks food for the household.

First ask H.3 for all fuel types and then record the information in the following questions only for the fuel that is used.

H.1	***Enumerator:*** Record Respondent ID for this section								Individual ID from Household Roster		
H.2	H.3	H.4	H.5	H.6	H.7	H.8	H.9	H.10	H.11	H.12	H.13
Fuel Type ***Read Aloud***	In the last 12 months, did your household use this energy? **CODE:** Yes...1 No...2→ **NEXT ROW**	In the last 12 months, what did your household use [FUEL] for? ***READ ALOUD the options below and Mark "X" for each item the household uses it for.*** **LIGHTING**	**COOKING**	**HEATING**	**HOME-BASED INCOME ACTIVITY**	**OTHER, SPECIFY**	In the last 12 months, in which months did you use this fuel? ***Multiple responses possible*** ***See Month Codes*** Used all year……111	In the last 12 months, in which months was this fuel **NOT** available? ***Multiple responses possible*** ***See Month Codes*** Available all year……111	In the last 7 days, how much of [fuel type] did your household use? **QUANTITY** 0→**NEXT ROW**	In the last 30 days, how much of this [fuel type] did you purchase? **QUANTITY** 0→ **NEXT ROW**	In the last 30 days, how much did you pay for the amount of [fuel type] that you purchased? **COST (LOCAL CURRENCY)**
a. LPG	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
b. Wood	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
c. Charcoal	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
d. Kerosene	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| litres	|__|__|__| litres	|__|__|__|
e. Piped Natural Gas	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__|litres	|__|__|__| litres	|__|__|__|
f. Coal/ Lignite	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
g. Peat	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
h. Animal waste/ Dung	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
i. Crop Residue/ Plant Biomass/ Sawdust	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
j. Briquette/ Pellet	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
k. Biogas	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__| kg	|__|__|__| kg	|__|__|__|
l. Ethanol	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|__|__|litres	|__|__|__| litres	|__|__|__|
m. Other, specify	|__|	|__|	|__|	|__|	|__|	|__|	|__||__||__||__|	|__||__||__||__|	|__|	|__|	|__||__||__|

Comments:

I. USE OF COOKING SOLUTIONS

Instructions: The respondent should be the household member who most frequently cooks food for the household, as identified in A.22

I.1	***Enumerator:*** Record Respondent ID for this section		Individual ID from Household Roster

Record information for each stove that the household uses. List each stove in a separate row of the table. Ask I.3 first and record all types of stoves in household.

I.2	I.3	I.4	I.5	I.6	I.7	I.8	I.9	I.10	I.11	I.12	I.13	I.14	I.15	I.16	I.17
CookstoveID	In the last 12 months, which cookstove did your household use for preparing meals? ***List up to 5*** **CODE:** Stone/fire stove...1→**I.10** Other Self-Built Stove..2→**I.8** Manufactured stove……3 Other, Specify..555 Here are listed all the most frequently used cookstoves and their codes	How did you obtain this cookstove? **CODE:** Purchased …1 →**I.6** Receive for free….2 Made it myself….3 →**I.6**	Who gave it to you? **CODE:** Local private organizations (NGO)…...1 Chief of village……2 Local govt……...3 Friend/ relative….4 Other, specify..555	Did you receive training or information on this cook-stove? **CODE:** Yes……1 No…….2	What is the manufacturer and model of this cook-stove? ***See codes in codebook***	Is this a solid fuel cook-stove? **CODE:** Yes…1 No….2	Is this a metal stove? **CODE:** Yes…1 No….2	How many working burners does this stove have? **NUMBER OF BURNERS**	What is the value of this cookstove in your community today? Don't know…888 **AMOUNT IN LOCAL CURRENCY**	In the last 12 months, during which of the following months did you use this cookstove? ***Multiple response*** **CODE:** January……1 February…..2 March……..3 April……4 May…….5 June…….6 July…….7 August…….8 September…9 October……10 November…11 December….12 Used all year.....111	Is the stove fixed in one place or moveable? **CODE:** Fixed…….1 Moveable..2	In the last 12 months, where did you normally cook with the cookstove? **CODE:** In dwelling, **NOT** in sleeping area……1 In dwelling, in a sleeping area……..2 In a separate dwelling……..3 In a veranda (roofed platform with at least two open sides)…4→**I.18** Outdoors..5→ **I.18** Other, specify…….555	What is the size of your **main** cooking space? ***Area size in square meter.***	How many doors and windows (opening to the outside) does the **main** cooking space have? **NUMBER OF OPENINGS**	Do you usually use a chimney, hood or other exhaust system while using this stove? **CODE:** Yes…...1 No…….2
1															
2															
3															
4															

Comments:

5															

Comments:

	I.18		I.19		I.20	I.21	I.22	I.23	I.24	I.25	I.26	I.27
Cookstove ID	In the last 12 months, what are the fuels you used on this cookstove? **CODE:** Kerosene……1 Coal/lignite……2 Peat……..3 Charcoal……..4 Wood……...5 Solar……6 Animal Waste/Dung……7 Crop Residue/Plant Biomass…..8 Saw Dust……9 Coal Briquette……..10 Biomass Briquette……..11 Processed biomass (pellets)/ woodchips……..12 Ethanol……...13 Biogas……14 LPG/cooking gas……...15 Piped Natural Gas…..……16 Electric……...17 Garbage/plastic……..18 Other, specify……..555		In the last 12 months, how often was the [FUEL TYPE] available? ***Read aloud options*** **CODE:** Always available……1 Mostly available…….2 Sometimes available…….3 Rarely available…...4		In the last 12 months, have there been times when the cooking time is longer than usual due to a weak flame? **CODE:** Yes……...1 No……2	How much time do household members spend **preparing the cookstove and fuel for each meal** on average [including setting up the fuel and turning on the stove but not including gathering fuel or cooking time]?	In the last 7 days, how many days did you use this cookstove?	In the last 7 days, on average, how many times did you light this cookstove **per day?**	In the last 7 days, on average, how much time did your household use this cookstove **per day** to cook or reheat meals (do not include boiling water) in the…			In the last 7 days, on average, how much time did your household use this cookstove **per day** to boil water (for cooking, washing, and drinking)?
	A. Most Used ***Single response***	**B. Second Most Used** ***Single response***	**A. Most Used**	**B. Second Most Used**		**MINUTES**	**DAYS**	**NUMBER OF TIMES**	**MORNING**	**AFTERNOON**	**EVENING**	**MINUTES**
1												
2												
3												
4												
5												

Comments:

	I.28	I.29	I.30	I.31	I.32	I.33	I.34
Cookstove ID	Do you also use this stove for space heating? **CODE:** Yes…….1 No……..2→**I.31**	In the last 12 months, during which of the following months did you use this cookstove for space **heating**? ***Multiple response*** **CODE:** January……1 February…..2 March……..3 April……4 May…….5 June…….6 July…….7 August…….8 September…9 October……10 November…11 December….12 Used all year.....111	In a typical month, how many hours do you use this cookstove for space heating **each day**? **NUMBER OF HOURS** **PLEASE, RECORD 1 IF LESS THAN 1 HOUR.**	In the last 12 months, what type of harm/injury did your household face from this cookstove? ***Multiple responses possible.*** **CODE:** Death or permanent damage…..……1 Burns/fire/poisoning……..2 Severe cough/respiratory problem..3 Other major injury……..4 Minor injury……...5 Fire with no injury…….6 Itchy/watery eyes……..7 None……..……...8	Who decided to build/purchase this cookstove? **MEMBER ID**	***Interviewer/CAPI check:*** Does this household have more than one cookstove? **CODE:** Yes……1 No……..2→**I.35**	Why do you not use this cookstove all the time? ***List up to 2 reasons*** **CODE:** Electricity/fuel for this stove unavailable……..1 Electricity/fuel for this stove too expensive……..2 Certain type of cooking is not possible with this stove…….3 Cookstove does not have enough burners…….4 Cookstove flame is too weak…….5 Stove takes a long time to cook food……..……...6 Electricity/fuel takes a long time to prepare……..7 Stove is difficult/inconvenient to use……8 I prefer another energy source but the electricity/fuel is too expensive or often not available……9 Certain type of meals taste better with another stove……10 Other, specify……..555
1							a. |__|__|__| b. |__|__|__|
2							a. |__|__|__| b. |__|__|__|
3							a. |__|__|__| b. |__|__|__|
4							a. |__|__|__| b. |__|__|__|
5							a. |__|__|__| b. |__|__|__|

Comments:

MAIN COOKSTOVE

I.35	Can you show me the cookstove you spend the most time cooking on? ***This is the MAIN cookstove, take a picture of the stove and ask the following questions about only this cookstove.***		Record Cookstove ID from previous table

Ask each question for the most used and second most used fuel for this cookstove as identified in I.18 If no second fuel, only ask about the most used fuel.		**a.Most used**	**b. Second most used**	
I.36	How much do you spend on the [FUEL TYPE] for this stove in the last month/in a typical month when you use the stove? ***Enter the actual amount spent, not the market value of the fuel.***			Amount in Local Currency

J. SPACE AND WATER HEATING

J.1	Do you heat water?		Yes……1 No……2→**J.4**
J.2	What is the main source you use to heat water?		Electric heater……1→**J.4** Gas heater……2→**J.4** ~~District heating……3→J.4~~ Solar thermal system……3→**J.4** Same solid fuel stove used for cooking…..4→**J.4** Separate solid fuel stove……5
J.3	What is the MAIN fuel you use in this stove?		Wood ……1 Charcoal……2 Saw Dust……3 Crop Residue/Plant Biomass…….....4 Peat……5 Coal Briquette……6 Biomass Briquette……7 Animal Waste/Dung……8 Processed biomass (pellets)/ woodchips…..9 Garbage/plastic……10 Other, specify……555
J.4	Do you heat your house?		Yes……1 No……2→**K**
J.5	What is the main source you use to heat your house?		Electric heater……1→**K** Gas heater……2→**K** ~~District heating……3→K~~ Solar thermal system……3→**K** Same solid fuel stove used for cooking…..4→**K** Separate solid fuel stove……5
J.6	What is the MAIN fuel you use in this stove?		Wood ……1 Charcoal……2 Saw Dust……3 Crop Residue/Plant Biomass…….....4 Peat……5 Coal Briquette……6 Biomass Briquette……7 Animal Waste/Dung……8 Processed biomass (pellets)/ woodchips…..9 Garbage/plastic……10 Other, specify……555

Comments:

K. WILLINGNESS TO PAY FOR AN IMPROVED COOKSTOVE

Respondent: This module only applies to households who are using either firewood or charcoal as a fuel source. The respondent should be the household member who most frequently cooks food for the household, as identified in A.17 OR the household member who decides to purchase the cookstove in I.28.

If households are using charcoal, not firewood, then the reference model will be Canamake Ivuguruye (4,000 RWF) and randomly assign three different percentages of the price: 33%, 66%, and 100%, which is1400, 2800, and 4000 RWF, respectively.

If households are using firewood, not charcoal, then the reference model is Canarumwe (3,000 RWF) and randomly assign one of three different percentages to the price: 33%, 66%, and 100%, which is 1000, 2000, and 3000 RWF, respectively.

If households are using both, please assign the cookstove based on most frequently used fuel source.

K.1	***Enumerator:*** Record Respondent ID for this section		Individual ID from Household Roster
(Interview: Please, describe and explain the benefit of having ICS) I would now like you to think about a situation that is not real. Imagine that you could pay a "lump sum" price for this cookstove. This cookstove can reduce the smoke and fuel consumption significantly. Possibly, your cooking time per meal will be shortened since firepower of this cookstove is stronger than the traditional cookstove.			
K.2	Would you be willing to pay RWF {CF} for this cookstove?		Yes……1 → **L** No……..2
K.3	Imagine that you were offered this stove at this price today, and you were given 6 months to complete the payment. Would you accept the offer?		Yes……1 → **L** No……2 Don't know……..888
K.4	Why would you not accept the offer?		Cannot afford the payment……1 We already have enough stove…..2→ **L** Other, specify……555 Don't know……888
K.5	Instead of 6 months, imagine you were offered this cookstove at this price today, and you were given 12 months to complete the payment. Would you accept the offer?		Yes……1 No……2 → **L** Don't Know……888
K.6	Why would you not accept the offer?		Cannot afford the payment……1 We already have enough stove…..2→ **L** Other, specify……555 Don't know……888
K.7	Instead of 12 months, imagine you were offered this cookstove at this price today, and you were given 24 months to complete the payment. Would you accept the offer?		Yes……1 No……2 → **L** Don't Know……888
K.8	Why would you not accept the offer?		Cannot afford the payment……1 We already have enough stove…..2 Other, specify……555 Don't know……888

Comments:

L. HOUSEHOLD ASSETS: TRANSPORTATION AND AGRICULTURAL EQUIPMENT OWNERSHIP AND TOTAL

Interviewer Instructions: The Respondent should be the head of household.

Item Number	Item	a. How many [ITEM] in (working condition ~~or are still healthy~~) does your household own? *Write 0 if none* *0→NEXT ROW*	b. Who decided to purchase this device/livestock? **Code:** Head of household……1 Spouse/partner……2 Both……3 No one, but given (inherited, gifted, salvaged, etc) …4 Other, specify…555	c. What is the source of electricity/ energy used to power [ITEM]? **Code:** National grid…….....1 Local mini-grid…….....2 Generator……3 Solar…….....4 Rechargeable battery…..5 Dry cell battery…….6 Diesel……..7 LPG……8 Kerosene…….9 ~~Diesel……10~~ Gasoline…….....10 Biogas……11 Manual…….....12 Other, specify…….555
L.1	Vehicle (Car, pickup truck, etc)			
L.2	Motorcycle			
L.3	Bicycle			
L.4	Motor boat			
L.5	Boat			
L.6	Animal drawn cart			
L.7	Two-wheel tractor			
L.8	Four-wheel tractor			
L.9	Thresher			
L.10	Domestic water pump			
L.11	Transplant rice seeding machine			
L.12	Rice contended machine			
L.13	Water pump for irrigation			
L.14	Miller			
L.15	Hand plough (jembe)			
L.16	Electric power saw			
L.17	Electric power drill			
L.18	Welding machine			
L.19	Electric planer			
L.20	Electric motor			
L.21	Chain saw (gasoline)			
L.22	Ox			
L.23	Cow/bull/calves			
L.24	Water buffalo			
L.25	Horse/donkey			
L.26	Sheep			
L.27	Goat			
L.28	Pig			
L.29	Poultry (Chicken, Duck, Turkey, Goose)			
L.30	Rabbit			
L.31	Fish (Aquaculture)			
L.32	Other, specify			

Comments:

Item Number	Item	a. How many [ITEM] in working condition does your household own? *Write 0 if none 0→NEXT ROW*	b. Who decided to purchase this device? **Code:** Head of household...001 Spouse/partner…….002 Both……..…003 No one, but given (inherited, gifted, salvaged, etc)……...004 Other, specify…..…555	c. How many hours does your household use [ITEM] in a typical day? (Only for fan, radio and TV) **Number of hours**
L.33	Incandescent Light Bulb			
L.34	Fluorescent Tube			
L.35	Compact Fluorescent Light (CFL) Bulb			
L.36	LED Light Bulb			
L.37	Light Bulb, Other/Unknown type			
L.38	Rechargeable torch/flashlight/ lantern			
L.39	Radio/CD Players/sound system			
L.40	VCD/DVD			
L.41	Fan			
L.42	Rice cooker			
L.43	Refrigerator			
L.44	Microwave oven			
L.45	Electric Toaster			
L.46	Electric Iron			
L.47	Charcoal Iron			
L.48	Washing machine			
L.49	Electric sewing machine			
L.50	Manual sewing machine			
L.51	Air cooler (External Unit)			
L.52	Air cooler (Central Air)			
L.53	Space Heater			
L.54	Electric water heater			
L.55	Solar based water heater			
L.56	Dishwasher			
L.57	Computer			
L.58	Printer			
L.59	Freezer			
L.60	Electric hot water pot/kettle			
L.61	Electric stove/range			
L.62	Blender			
L.63	Electric food processor			
L.64	Smartphone (internet phone) charger			
L.65	Regular mobile phone charger			
L.66	Electric battery charger			
L.67	Electronic Tablet			
L.68	Satellite dish			
L.69	Radio Receiver			
L.70	Black & White TV			
L.71	Regular Color TV			

Comments:

L.72	Flat color TV			
L.73	Electric hair dryer			
L.74	Other, specify			

M. HOUSEHOLD LAND OWNERSHIP ~~AND OTHER ASSETS~~

Instruction: Enter the total values of following assets owned by the household. If some assets are owned by members, report aggregate values for all members. The Respondent should be the head of household.

	~~Type of land and other assets~~	a. Do you own [LAND TYPE]? Yes……1 No…….2→**N**	b. What is the total size of the land?		c. ~~If you were to sell, w~~ What is your estimation of the total value? ***Local currency***
M.1	Agricultural land (including cultivated land, resting land, preparation land and others like land for animal food)	|__|	~~Hectare~~ Sqm	|__|__|__|	|__|__|__|__|__|__|__|

N. HOUSEHOLD ECONOMIC SHOCKS

Only record information for events that negatively affected the economic situation of the household

Shocks	N.1 In the **last 5 years**, have you been affected by (…)? **CODE:** 1= Yes 2= No→**next shock**	N.2 Who was affected by the event? **CODE:** 1= Just this household 2= Family members outside HH 3= Several HHs in this village 4= Most or all HHs in this village 5= Several villages in this area
a. Failure/loss of business including agricultural failures (crop disease, livestock death, etc)	|___|	|___|
b. Loss of employment due to imprisonment, illness/injury, or death of economically active household member.	|___|	|___|

O. STREET LIGHTING

The respondent should be the most knowledgeable household member on household electricity, as identified in C.1

O.1	Respondent ID		Record ID from the Household Roster
O.2	Does your community have any form of street lighting? ***"Community" means 0.5 KM from Household***		Yes…….1 No……..2→**O.5**
O.3	How satisfied are you by the brightness of the street lighting service in your neighborhood?		Very unsatisfied……..1 Somewhat unsatisfied……2 Somewhat satisfied……3 Very satisfied……..4
O.4	What do you think are the risks/problems with street lighting in your neighborhood? ***Multiple responses possible***	a. |__|__|__| b. |__|__|__| c. |__|__|__| |__|__|__|	Electrocution……..1 Poor installation……2 Poor maintenance……..3 Outages/blackouts of street lighting……..4 Does not stay on all night……..5 No risks/problems……111
O.5	Do you have a light that you could turn on at night to provide light outside your home?		Yes…….1 No……..2→**P**
O.6	How many hours do you turn it on each night after it becomes dark?		Number of hours

P. TIME USE

#	Question	PEOPLE a. Female (Age 15 yrs and older)	b. Female (Under age 15 yrs)	c. Male (Age 15 yrs and older	d. Male (Under age 15 yrs)
In a typical day, how many total minutes did [PEOPLE] spend…					

Comments:

P.1	Gathering, collecting or purchasing fuels including travel time	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.2	Preparing fuel/energy source (chopping, making pellets)	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.3	Cooking (food, tea, boiling water)	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.4	Other time spent in cooking area(s)	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.5	Using space heaters (including time starting heater and spending time near it for warmth)	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.6	Using stove or space heaters for other purposes (ex: brewing beer, preparing fodder for animals)	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.7	***For income generation:*** Gathering, collecting, purchasing fuels (including travel time)	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.8	Caring, attending, or playing with/for younger children	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.9	Studying or helping with school work	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.10	Working for pay outside of the house	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.11	Doing household chores	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.12	Just for fun or leisure (both in and outside of the house)	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes
P.13	Sleeping or resting (including the normal night time sleep)	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes	|__|__|__| minutes

Q. HEALTH IMPACTS

#	Question	PEOPLE			
		a. Female (Age 15 yrs and older)	**b. Female (Under age 15 yrs)**	**c. Male (Age 15 yrs and older**	**d. Male (Under age 15 yrs)**
Q.1	Number of [PEOPLE] with an illness with a cough at any time in the last 14 days?	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.2	Of [PEOPLE] who had an illness with a cough, how many went to see a doctor/clinic?	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.3	Of [PEOPLE] who had an illness with a cough, how many breathed faster than usual with short, rapid breaths or had difficulty breathing?	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.4	Of those [PEOPLE] with short, rapid breaths or difficult breathing, for how many [PEOPLE] was it due to a problem in the chest?	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.5	Number of [PEOPLE] with eye irritation or eye problems in the last 14 days?	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people

#	Question	PEOPLE			
		a. Female (Age 15 yrs and older)	**b. Female (Under age 15 yrs)**	**c. Female (Age 15 yrs and older**	**d. Female (Under age 15 yrs)**
In the last 12 months, how many [PEOPLE] have experienced…					
Q.6	Poisoning from liquid fuel	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.7	Burns related to cooking or heating or fuel	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.8	Of the burns related to fuel-- Burns that required a visit to the clinic/hospital	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.9	Back or neck problems from carrying fuel for cooking/heating	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.10	Electrical injuries (e.g. shocks) that prevent attendance in school/work	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people
Q.11	Other minor electrical injuries	|__|__|__| people	|__|__|__| people	|__|__|__| people	|__|__|__| people

Comments:

R. ATTITUDES

R.1	***Interviewer/CAPI check:*** Does the household have a connection to the national grid?		Yes……1 No……..2→**R.6**
R.2	Since you first received your electricity connection, how has the price of electricity changed?		It has gotten much higher……..1 Stayed about the same……...2 It has gotten cheaper……..3
R.3	Since you first received your electricity connection, how has the frequency of black out or brown out changed?		It has gotten worse……1 Stayed the same……2 Better……3
R.4	Since you first received your electricity connection, how has the duration of electricity supply at night changed?		It has gotten worse……1 Stayed the same……2 Better……3
R.5	Since you first received your electricity connection, how has the duration of electricity supply during the day changed?		It has gotten worse……1 Stayed the same……2 Better……3
R.6	If you could use your [MAIN SOURCE OF ELECTRICITY C.182] to power an appliance that you do not currently own, what would it be? ***Up to 3 answers possible***	a. |__|__|__| b. |__|__|__| c. |__|__|__|	Fan……1 Radio……2 Television……..3 Refrigerator……...4 Electronic Tablet……...5 Computer……...6 Hair clippers……..7 Power Tools……...8 Phone with internet (Smartphone)……..9 Other, specify……555
R.7	Why do you not yet own one of these appliances? ***Multiple responses possible***		Too expensive……..1 No products available……..2 Products require too much energy, cannot power them wit system…….....3 Don't have electricity……4 Other, specify……555
R.8	How satisfied are you with the service from [MAIN SOURCE OF ELECTRICITY C.182]? ***Read aloud these options.***		Very satisfied……..1 Somewhat satisfied……2 Neutral……3 Unsatisfied……..4 Very unsatisfied……..5

#	**Statement** **Read the following statement and ask respondent whether he or she strongly agrees, agrees, disagrees, strongly disagrees, or has no opinion.**	**Response** **CODE:** Strongly Agrees……1 Agrees……2 No Opinion……3 Disagrees……...4 Strongly Disagrees……5
ELECTRICITY		
R.9	Electricity is very important for the children's education	
R.10	With electrical light the children can study more at night.	
R.11	Our household is happy with the lighting system that we have in our home.	
R.12	To use kerosene or diesel for lamp lighting is harmful for the health.	
R.13	A car battery is a good source of electricity.	
R.14	A solar based system is a good source of electricity.	
R.15	Electricity helps with domestic tasks and care of the children.	
R.16	Today, the quality of life of my household is better than it was 5 years ago.	
R.17	The monthly electric bill is or would be a financial burden for my family.	
R.18	The electricity makes it easy to have information and the news.	
R.19	Watching TV provides my household with great entertainment.	
R.20	News and information from radio and television provide good information relevant for conducting business.	
R.21	News and information from radio and television provide good knowledge on family health issues.	
R.22	Electric lighting makes indoor smoke-and pollution-free.	
R.23	Electricity can benefit communities through economic and enterprise development.	

Comments:

COOKING		
R.24	Smoke from stove is good at chasing insects away.	
R.25	Smoke from cooking fuels is a big health problem in my family.	
R.26	Cooking with firewood is not very convenient.	
R.27	Firewood is expensive for cooking.	
R.28	Modern or wealthy families use LPG/cooking gas to cook.	
R.29	Charcoal is convenient to use for cooking.	
R.30	Cooking with charcoal is harmful to a person's health.	
R.31	~~Cooking with firewood is harmful to a person's health.~~ Electricity is expensive for cooking.	
R.32	Firewood is hard to obtain.	
R.33	LPG is expensive for cooking household meals.	
R.34	Certain food tastes better when cooked with biomass compared to gas or electricity.	
R.35	Charcoal is hard to obtain in the market.	
R.36	I prefer to use "Three/five Stone" as the firewood stove at home.	
R.37	Collecting and preparing firewood is a burden for my family.	
R.38		
STREET LIGHTING		
R.39	Street lighting makes it safer for women and girls to be outside at night.	
R.40	Street lighting makes it safer for children to be outside at night.	
R.41	Street lighting leads to fewer crimes.	
R.42	Street lighting lets more people move around at night.	
R.43	Street lighting allows for more community activities to occur at night.	
R.44	Street lighting lets night markets and other businesses stay open.	
PAYMENT/FINANCE		
R.45	I prefer to pay with mobile money than with vouchers/token/pre-paid card.	
R.46	I would trust mobile telephone companies with my money	
R.47	I would rather pay a very small amount to rent a solar system than pay a very large amount once to own it.	
R.48	I would rather pay per unit of electricity (kWh) instead of renting or buying a solar system.	
R.49	I would borrow money to purchase an improved cookstove.	
R.50	I would borrow money to purchase solar lanterns/lighting system.	
R.51	I would borrow money to purchase a TV.	
R.52	I would borrow money to purchase a refrigerator.	
DECISION MAKING		
R.53	Men and women use energy and its devices differently	
R.54	Men usually make decisions on the distribution of family budget	
R.55	Men usually make decisions on purchasing of energy and energy-consuming devices	

Comments:

S. WOMEN'S EMPOWERMENT

Respondents should be a female headed household or female spouse of the household head/member in the household.

MOBILITY		
	STATEMENT Who decides about the activities below?	**RESPONSE CODE:** Can do herself ……...1 Can do with husband ……2 Can do with others ……...3 Other Specify ……..…4
S.1	Visiting parents/relatives/friends within or outside the village	
S.2	Going to markets/banks/commercial centers/places of work.	
S.3	Going outside the village	
ACCESS TO INFORMATION, ORGANIZATION MEMBERSHIP, VILLAGE ELECTRIFICATION COMMITTEE, CAPACITY BUILDING AND ACCESS TO FINANCE		
S.4	Do you receive information about electricity/energy service available in your areas?	Yes… ……1 No……2
S.5	If you are a member of a women's group, which type of group are you a member of/do you belong to?	Not a member…….001 Religious related activities……....002 Health care related activities.....003 Income generating activities…….……004 ~~Other specify……005~~ Self help organization……..……...005 Savings group……..……006 Microfinance organization……..……...007 Cooperative……..……...008 Village administrative committee……009 Village electrification committee……..010 Other specify……..555
S.6	What do you think are the main constraints women face in participating in organizations or activities in the area?	Limited time……001 Lack of support from family…….....002 Limited confidence…..……..……003 Limited education……..….004 Other specify……..555
S.7	If you are a member of the village electrification committee, how often do you meet?	Not a member…….001 Never……..…002 Once a month……..…003 Once every two months ……004 Other (specific)……...555
S.8	Have you had any training on electricity or energy related equipment?	Yes……..1 No…….....2→**S.10**
~~S.9~~	~~If yes, what types of training on electricity or energy did you get?~~	~~Skills development training……..001~~ ~~Management of income generating activities.002~~ ~~Women's and children's related issues……...003~~ ~~Health and hygiene……..……004~~ ~~Peace building and conflict resolution……005~~ ~~Gender ……006~~ ~~Other specify……555~~
S.10	Do you have your own bank account? Or joint bank account with husband?	No account……..1 Own……2 Joint…..3
S.11	What sources of credit/loans do you have access to?	None…….....001 Commercial/government bank…….....002 Cooperative credit union……003 Microfinance institution……004 NGO……...005 Business firm……006 Employer……007 SACCO/Moneylender……008 VLSA/Ikimina……009 Shop……010 Relative/Friend/Neighbor…….....011 Other, specify……555

Comments:

T. HOUSEHOLD BASED BUSINESS/ENTERPRISE

T.1	***Interviewer/CAPI check:*** Check **A.13** and list the HH member IDs who own the business/enterprise. **(A.13=1)**	a. |__|__| b. |__|__| c. |__|__| d. |__|__|	HH Member IDs
T.2	***Interviewer/CAPI check:*** Select the enterprise that has the highest number of employees in **A.15** Is the owner of this enterprise available now or will be while you are at this household? ***CAPI should iterate this question for the second largest business if the first largest business's owner/decision maker is not present. If none of the relevant HH members is present, skip the section.***	|__|	Yes……..1 No……..2 → **END**
T.3	***Enumerator:*** Record Respondent ID for this section		Individual ID from Household Roster
T.4	In the last 12 months, in which months did this enterprise operate? ***Multiple responses possible***	a. |__|__| b. |__|__| c. |__|__| d. |__|__| e. |__|__| f. |__|__| g. |__|__| h. |__|__| i. |__|__| j. |__|__| k. |__|__|	January……01 February……02 March……03 April……04 May……05 June……06 July……07 August……08 September……09 October……10 November……11 December……12
T.5	In a usual month over the last year, how many people work in this enterprise for pay?		Number of paid employees
T.6	What was the total revenue of this business or activity in the last month that it was operating?		Local Currency
T.7	Could you please estimate total revenue for this business or activity in a **regular month**, that is, a month that is neither the busiest nor the slowest of the year?		Regular month's total sales
T.8	In a regular month, how many hours does your enterprise operate **each day and night (max 24 hours)**?		Number of Hours
T.9	In a typical month, how many hours does your enterprise operate each night?		Number of hours
T.10	Are your working hours limited by the supply of energy in your enterprise?		Yes……..1 No……..2
T.11	What are all the different sources of energy that you use in your enterprise?	a. |__|__| b. |__|__| c. |__|__| d. |__|__| e. |__|__|	National Grid connection……001 Local Mini Grid……002 Generator (connecting one or more households/businesses)……003 Solar Home System……004 Solar Lantern/Lighting System……005 Rechargeable Battery……006 Dry cell batteries……007 Pico-Hydro……008 Liquid Fuel (kerosene, diesel, gasoline)……009 Coal……010 Biomass……011 Manual……012 Other, specify……555
T.12	***Interviewer/CAPI check:*** Is the enterprise connected to the national grid or the local mini grid?		Yes……1 No……2→**T.25**
T.13	Does the enterprise have a separate electricity bill from household use?		Yes……1 No……2→ **T.15**

Comments:

T.14	In the last month, how much did your household enterprise spend on the electric bill?		Local currency **Skip to T.16**
T.15	What percentage of electricity consumption of your household is used for the enterprise operation?		Percentage
T.16	Out of the [T.8 HOURS] you operate, how many hours of electricity are available each day from the grid?		Hours of supply Don't Know……888
T.17	Out of [T.9 HOURS], how many hours of electricity are available at night from the grid?		Hours of supply Don't know……888
T.18	In a typical day, how many outages/blackouts does the enterprise experience?		Number of outages
T.19	In a typical day, what was the **total duration** of all the outages/blackouts?		Minutes Please, record 1 if less than 1 minute.
T.20	During the last electricity power outage, what were the three main ways your business was affected? ***Multiple responses***	a. |__|__| b. |__|__| c. |__|__|	Had to turn customers away……..001 Had to send workers home for the day without pay.002 Had to send workers home for the day with pay…...003 Used alternate energy sources to keep perishables cold……004 Wasted perishable products/discarded damaged goods.....005 Machines/appliances were damaged in the process……..006 Meetings/transactions were delayed……007 Other, specify……555
T.21	During the last electricity power outage, approximately how much revenue do you think you could have earned if there had been no outage?		Local currency Don't know……888
T.22	During the last electricity power outage, approximately how many additional charges did you incur as a business (e.g. wasted products, paid workers, etc.)		Local currency Don't know……888
T.23	How much do outages from the grid impact your income (either in cash or in-kind)? ***Read aloud options***		Little or none……1 Moderately……2 Severely……3
T.24	What is your main back-up source for electricity?		Generator……..……001 Battery and Storage Devices (e.g.: car battery)....002 Solar Home System……..003 Solar Lantern/Lighting system…..……004 Kerosene lamp……..005 Candle…….....006 Torch/flashlight……007 Other, specify……...……555 No back-up source……111
T.25	***Interviewer/CAPI check:*** Is a solar device used in the enterprise as the main source?		Yes……1 No……..2→**END**

	Solar devices	a. **Is …….. used in the enterprise as the main source?** Yes……..,..1 No……2 → **Next device**	**b. Size (Wp) if known**	**c. What are the solar devices used for?** Lighting……..…..001 Cell phone craging – for the enterprise……002 Cell phone charging – as a charging station.…003 Operating laptop/computer tablet…..……004 Operate photocopy machine/scanner...……005 Providing entertainment (e.g. playing movies).006 Refrigeration..……..……007 Powering other appliances – please list specifically (e.g. solar milling machine, electric hear dryer, sewing machi……008 Other……555
T.26	Solar lantern?	|__|	|__|__|	|__|__|__|
T.27	Solar lighting system?	|__|	|__|__|	|__|__|__|
T.28	Solar home system?	|__|	|__|__|	|__|__|__|

Comments: