Modern Energy Cooking Forum - 2024

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"**Knowledge Sharing Session**"

"An Evidence-Based Approach to Assess the Energy Transition in Clean Cooking"

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BACKGROUND (1/2)

- Over the past three decades, **LPG has emerged as a cleaner alternative to polluting solid biomass-based cooking fuels** in India.

- LPG prices are linked with international crude prices and are sensitive to **fluctuations in Rupee-USD parity**. Currently, **India has a total of over 310 million LPG cylinder consumers**. Out of this, PMUY continues to serve more than 100 million beneficiaries across the country.

- The PMUY **beneficiaries are to receive Rs. 200 (Now revised to Rs. 300) per cylinder** as a subsidy if the **annual income is below ₹10 lakhs**.

- The subsidy is provided for a maximum of 12 cylinders per year.

- Issues such as **high costs of refill**, **inadequate area coverage of the LPG cylinder distribution networks**, and **difficulty in subsidy disbursement for the population without proper bank accounts** have discouraged consumers from pursuing LPG refills.

BACKGROUND (2/2)

- While India is looking to strengthen the power distribution infrastructure to ensure access to clean, modern, and affordable electricity for all**, electricity use in the residential cooking sector has not yet witnessed a major pick-up**.

- As of 2022 about **2.4 billion individuals globally and about 500 million residents in India are deprived of access to clean cooking solutions.**

- Electricity-based cooking provides an energy-efficient and cost-effective alternative to LPG in the form of a **wide range of appliances**, such as **induction cooktops**, **infra-red stoves**, and **solar-based cooktops**.

- Electricity-based cooking (or **eCooking**) **reduces the carbon footprint attributable to residential cooking if the electricity is sourced from green resources** (e.g., Solar, Wind, or Hydropower).

- Since the households belonging to the **low- and medium-income category will continue to rely on LPG in the near-to-medium term** based on the support received from the PMUY, **the strategies to transform the cooking practices in such houses need to be planned in a thorough and pragmatic manner**.

Project Objectives

1. To **Identify suitable locations** for understanding the transition towards an electricity-based cooking ecosystem.

2. To **conduct on-ground surveys** in selected areas to understand the status of access to electricity in the households, and how the households look at the envisaged transition to electric cooking.

3. To **assess the sub-distribution infrastructure** prevalent in the chosen areas (including the cabling and their carrying capacities).

4. To **assess the increase in electricity demand** owing to the envisaged transition into electric cooking.

5. To **understand the transition cost** to electric residential cooking in select regions.

6. To **develop a framework** based on the case studies of select areas, which can serve as a template to look at similar transitions in other regions of India.

Conceptual flow diagram of the approach adopted in the study

Information on Electricity Distribution Infrastructure
(Published Literature and Open-Source Information)

Energy Mix of Karnataka

Power Distribution Scenario in Bengaluru

Power Distribution Challenges in Bengaluru and Systemic Issues

Recommendations

- **Strategy for Knowledge Dissemination and Sensitization,**
- **Strategy for Strengthening. Electricity Sub-distribution Network,**
- **Strategy for Strengthening Modern Cooking Device Ecosystem (Including Safety Features, Maintenance, and Repairing),**
- **Strategy for Gradual Cultural Nudge through confidence-building**

Thematic Stacking of Information

- Assessment of Infrastructural Readiness,
- People's outlook toward new technological solutions,
- Educational Qualification and Technology know-how,
- Income levels vs Aspiration Gap,
- Socio-cultural beliefs regarding cooking,
- Level of acceptance for modern cooking devices,
- Perceptual barriers,
- Operational know-how concerns,
- Knowledge about Merits/Demerits of different cooking styles (Household Air Pollution, Energy Efficiency, Nutritional Value of Cooked Food)

Household Profiles, Income Levels, Culinary Habits, Exposure to Technology, Eagerness to Adopt New Cooking Solutions, and Access to Reliable Electricity
(Household Survey)

Cooking Habits (Major Food Items, Frequency of Meal Preparation, Average Duration of Daily Cooking)

Cooking Amenities (Cooking Fuel used for Different Items, Different Cooking Vessels used- Sizes and Types, Vessel Materials)

Monthly Income Levels and Savings, General Aspirations, Aspirations for Gadgets and Appliances, Aspirations for Modern Cooking Appliances, Technology Knowhow

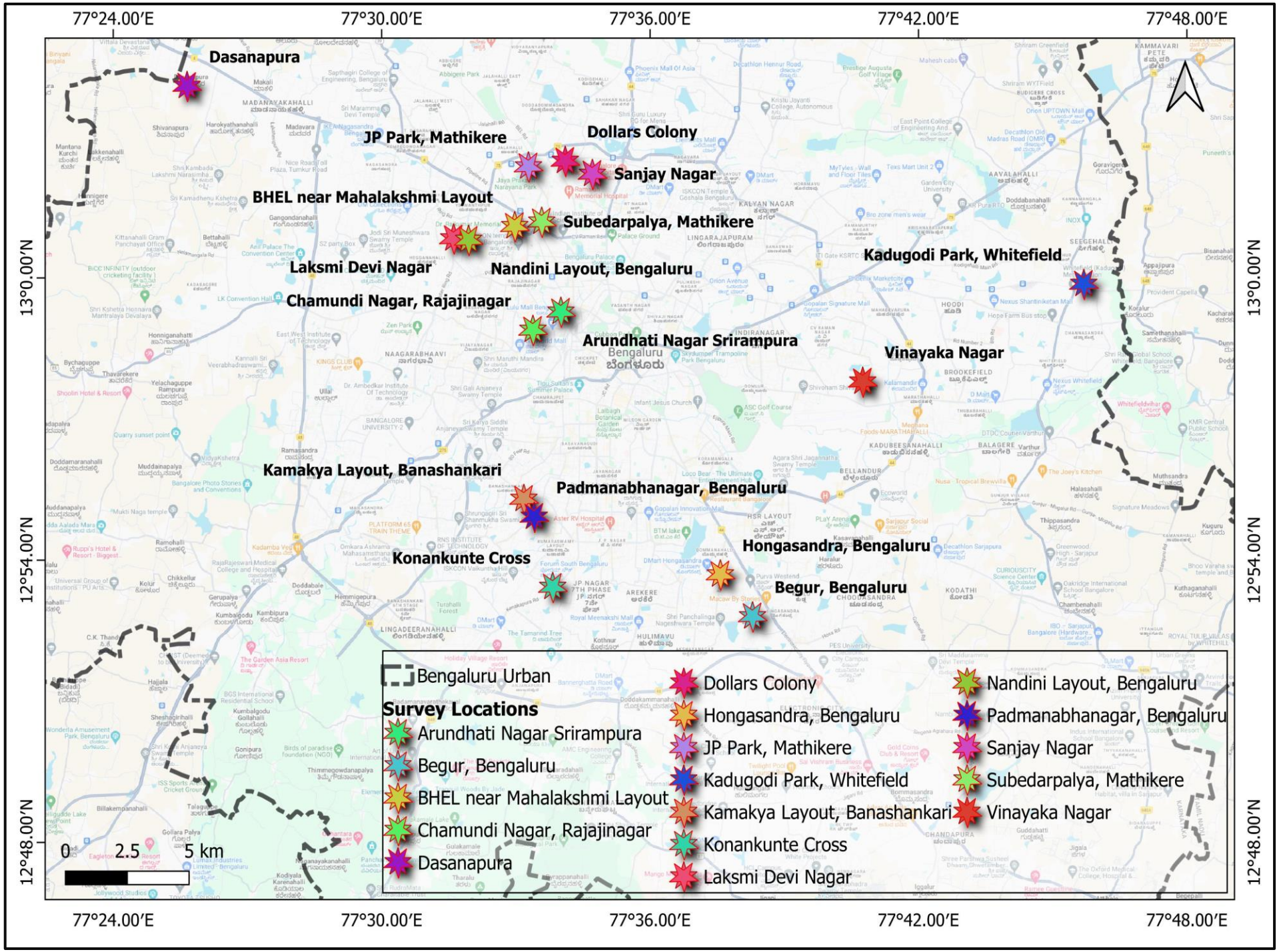
Frequency of Power Cuts in the Locality, Daily Time and Duration of Load-Shedding, Power Fluctuations and Transformer Bursting

NIAS

Spatial Spread of the Large-Scale Survey (N=910) Locations

Goal: *Evaluation of Energy Transition Readiness in the Residential Cooking Sector among the Low and Medium-Income Households in Bengaluru*

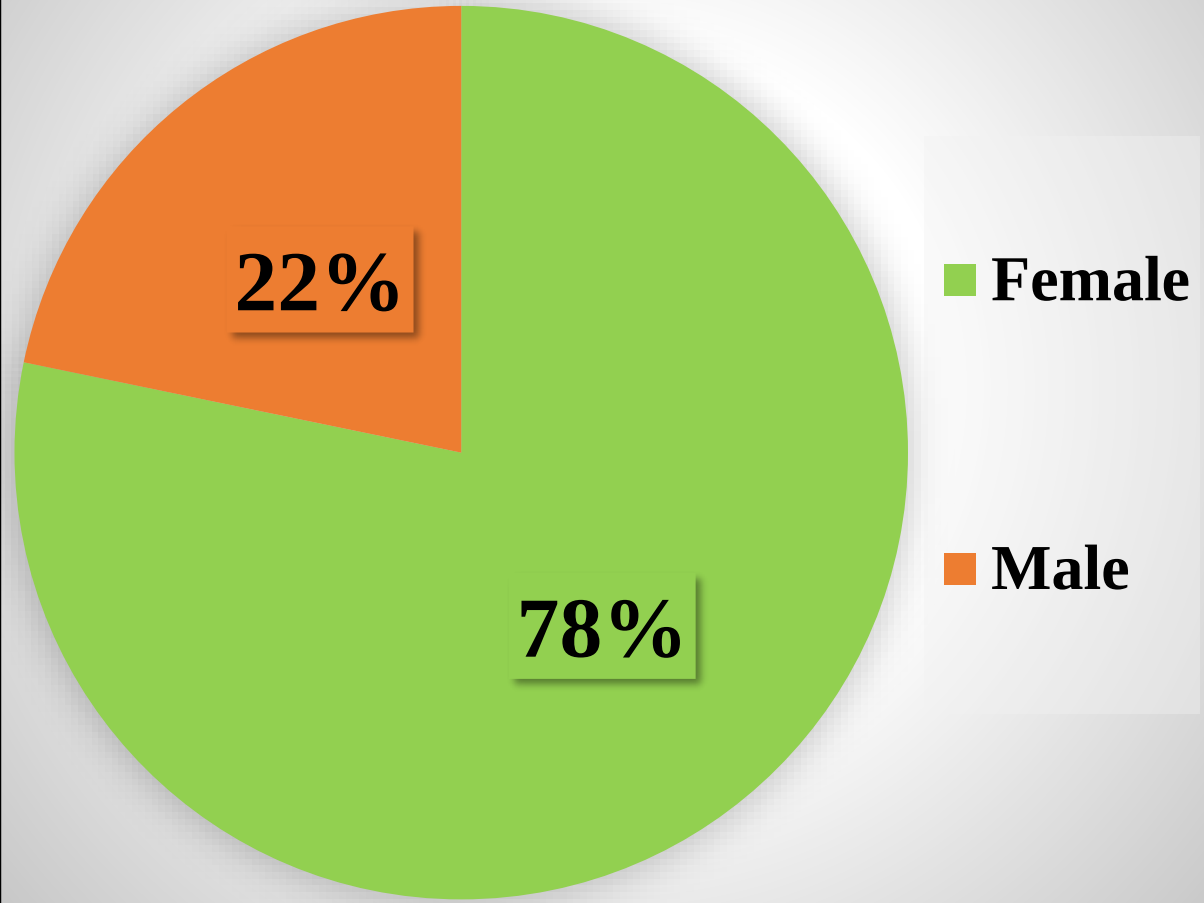
80% HHs in Low-to-Medium Income Range and **20% HHs in Medium & Upper-Medium Income Range**



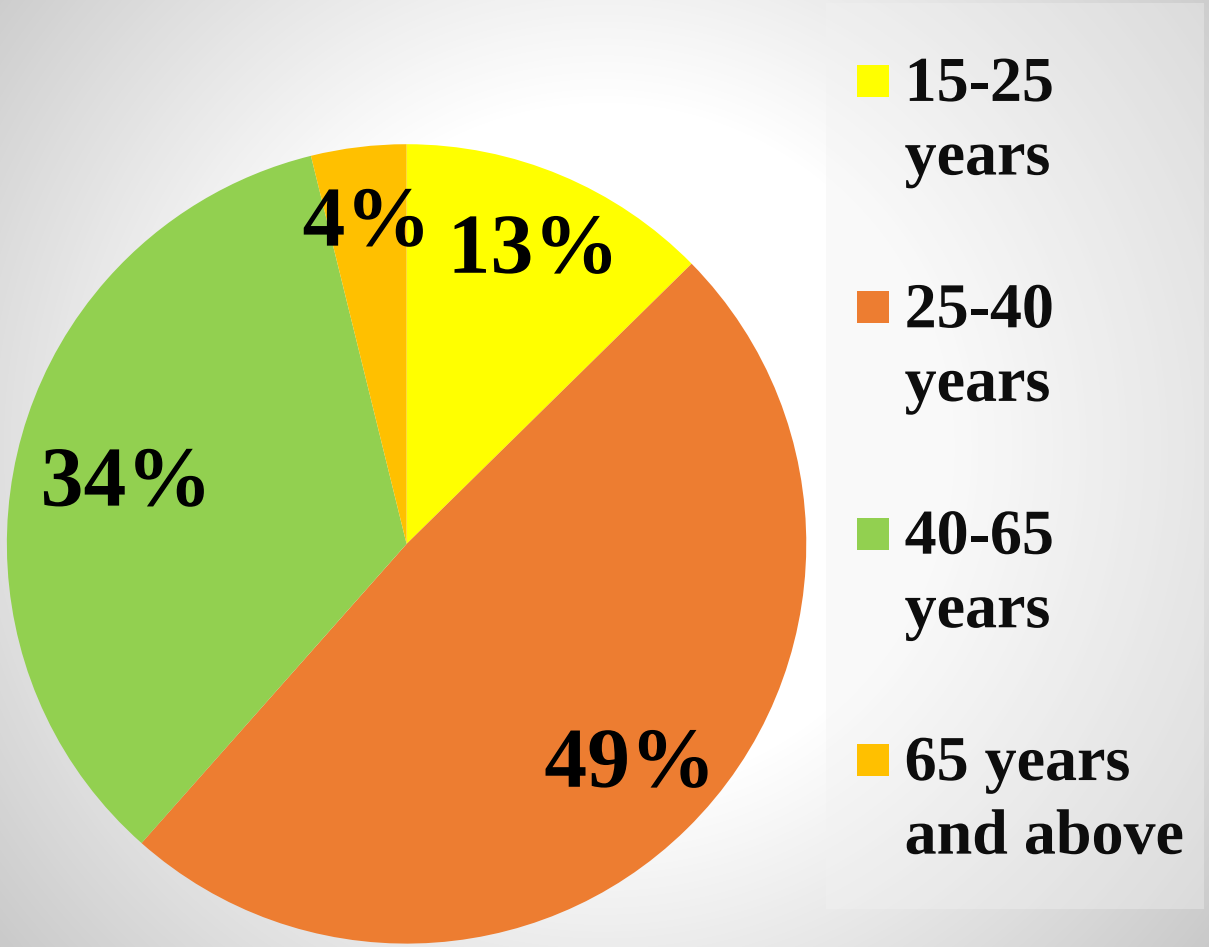
Basic Profiling of the Surveyed Households (N=910)

Demographic Breakdown

Gender Composition



Age Distribution



Family Sizes & Number of Adults and Children

- A total of **67.5%** of the surveyed households (**N=910**) reported 3-5 members in the family (**M=3** → 21%, **M=4** → 30.7%, **M=5** → 15.8 %)

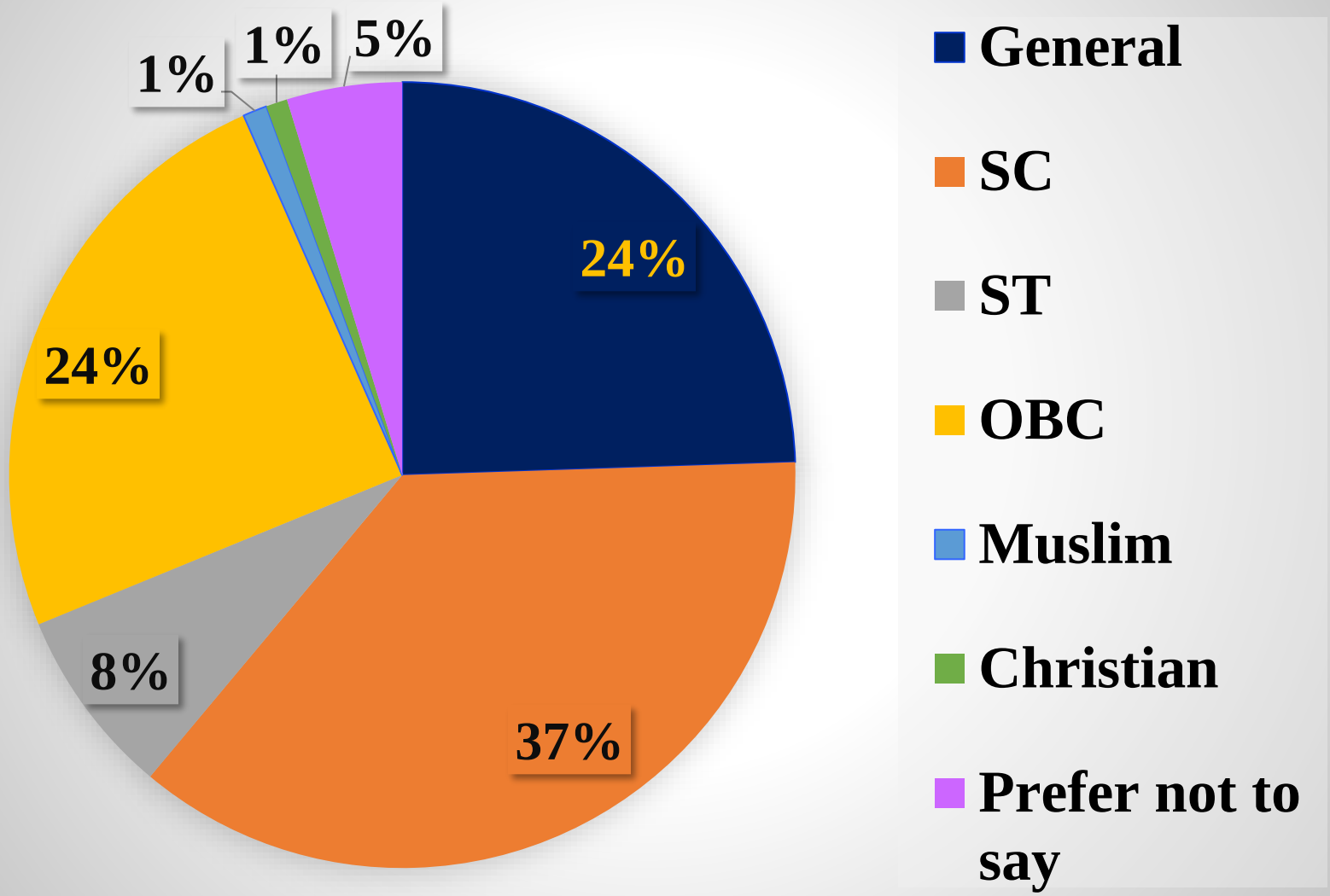
- In the 910 households surveyed -

Adults: 2850, Children: 787, Total: 3637.

- **General:** 24%
- **SC:** 37%
- **OBC:** 24%
- **ST:** 8%
- **Muslim:** 1%
- **Christian:** 1%
- **Prefer not to say:** 5%

69%

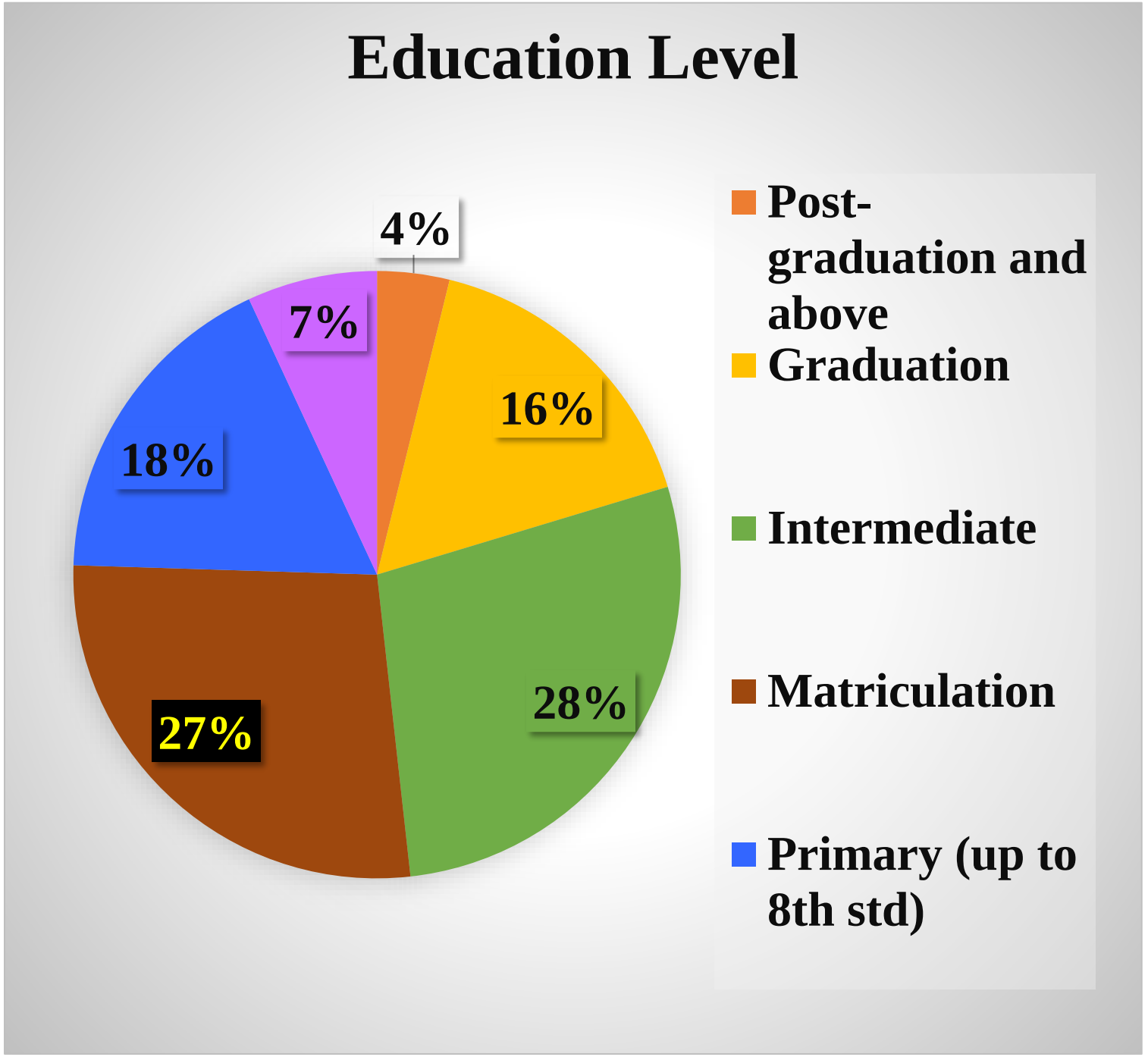
Caste Composition



- **Post-graduation & above:** 4%
- **Graduation:** 16%

73%

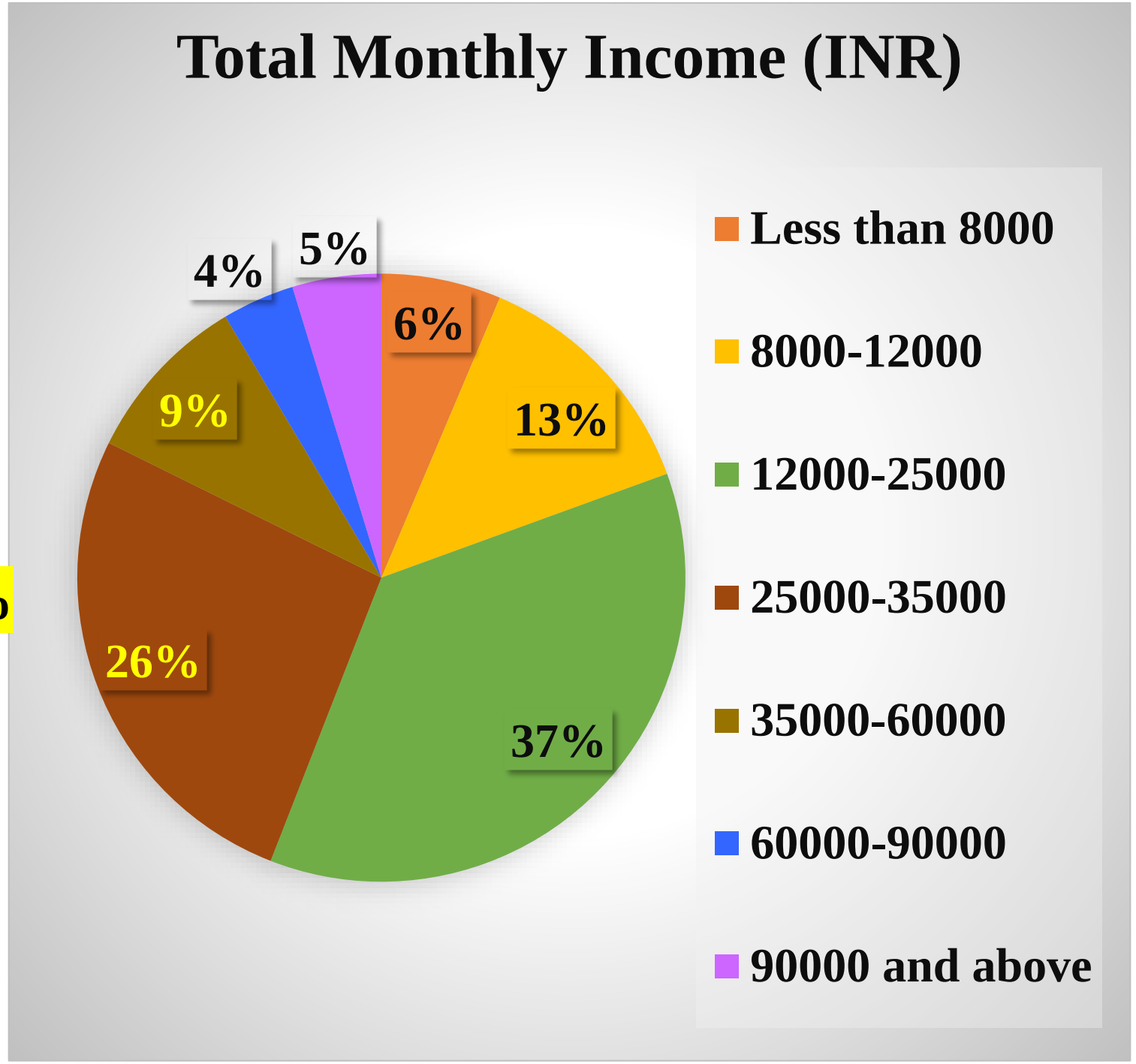
- **Intermediate:** 28%
- **Matriculation:** 27%
- **Primary (up to 8th std):** 18%
- **Illiterate:** 7%



56%

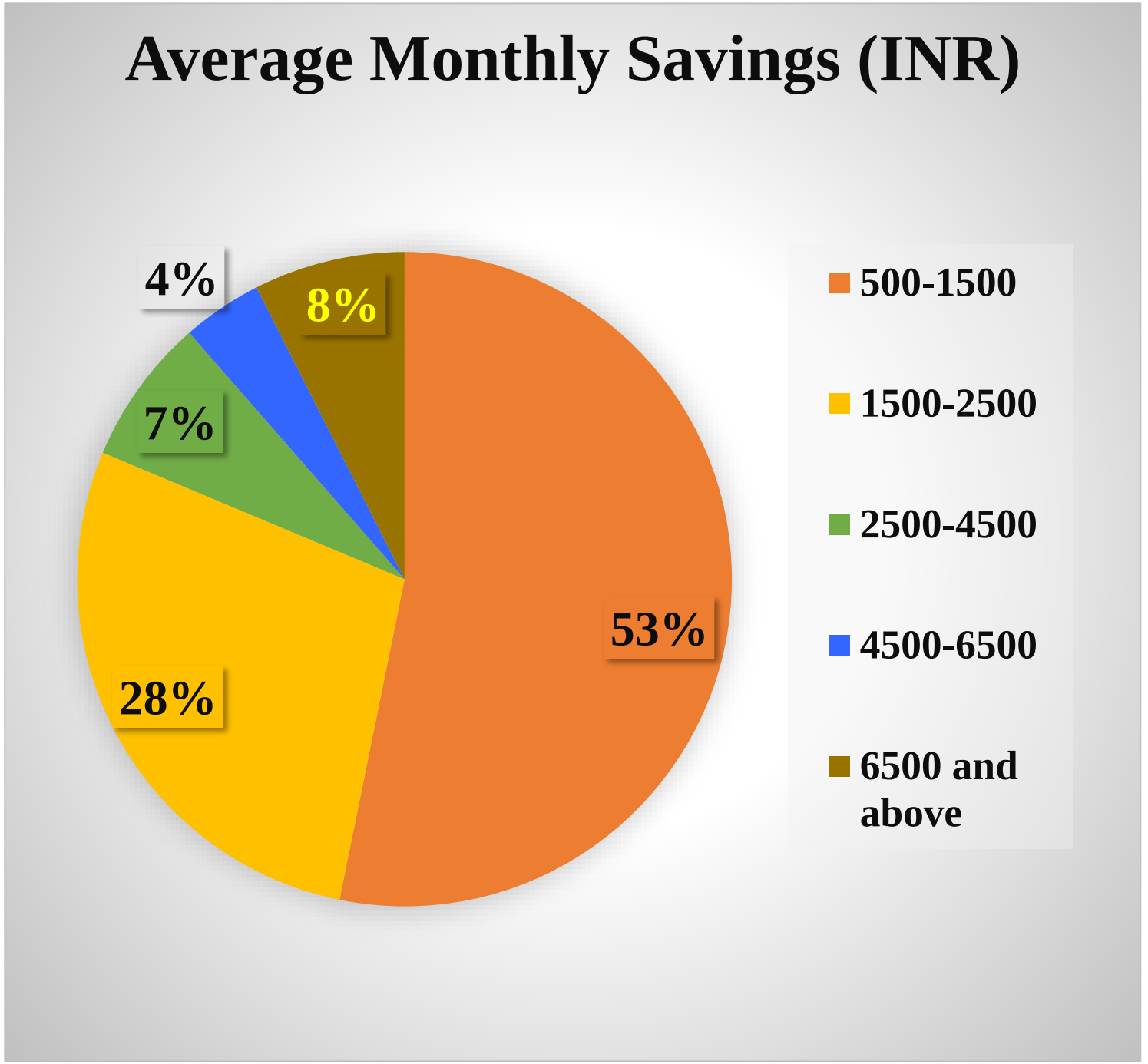
- **Less than 8000:** 6%
- **8000-12000:** 13%
- **12000-25000:** 37%
- **25000-35000:** **26%**
- **35000-60000:** 9%
- **60000-90000:** 4%
- **90000 and above:** 5%

18%



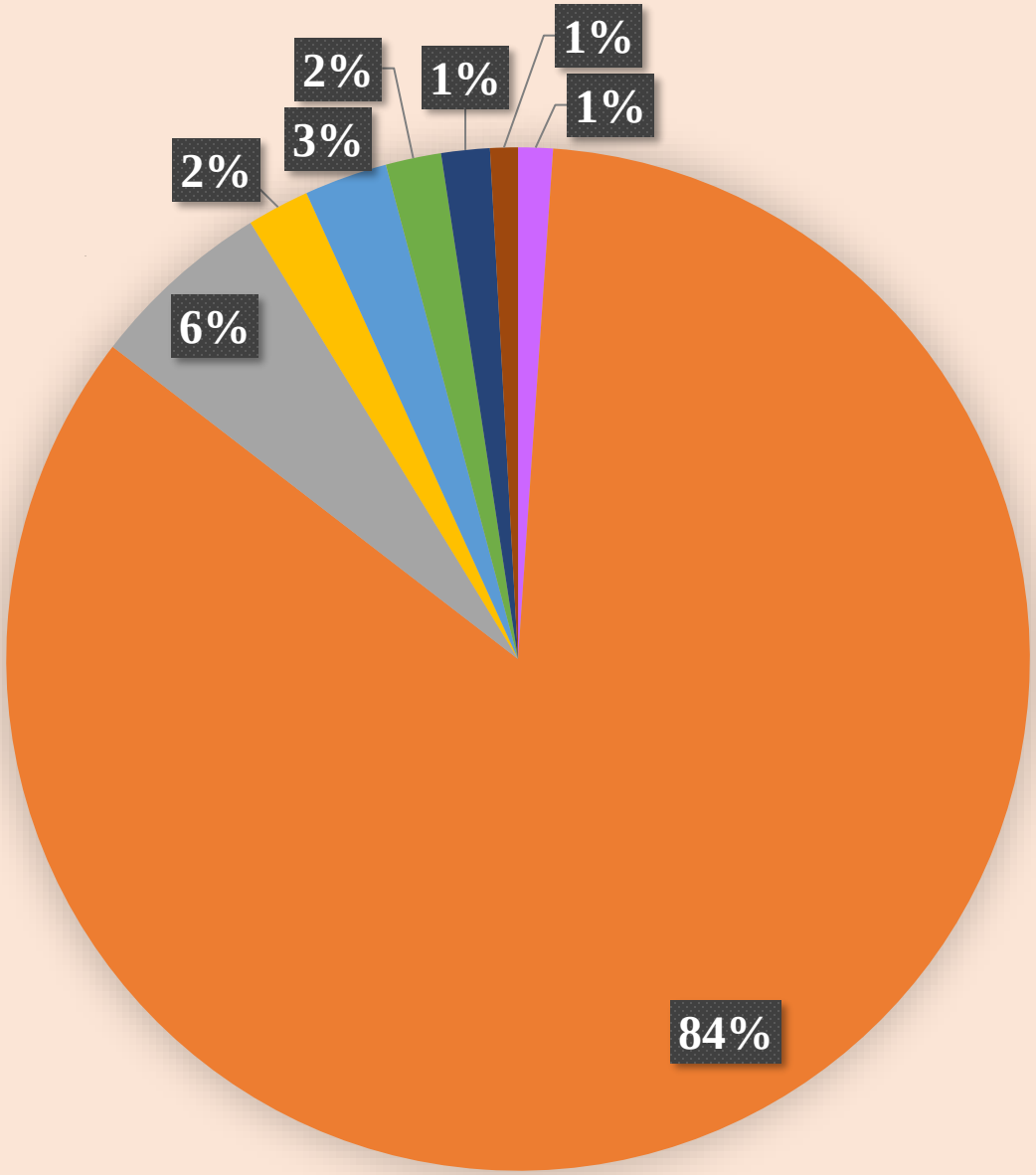
81%

- **500-1500:** 53%
- **1500-2500:** 28%
- **2500-4500:** 7%
- **4500-6500:** 4%
- **6500 and above:** 8%



Cooking Fuel Used by the Surveyed Households (N=910)

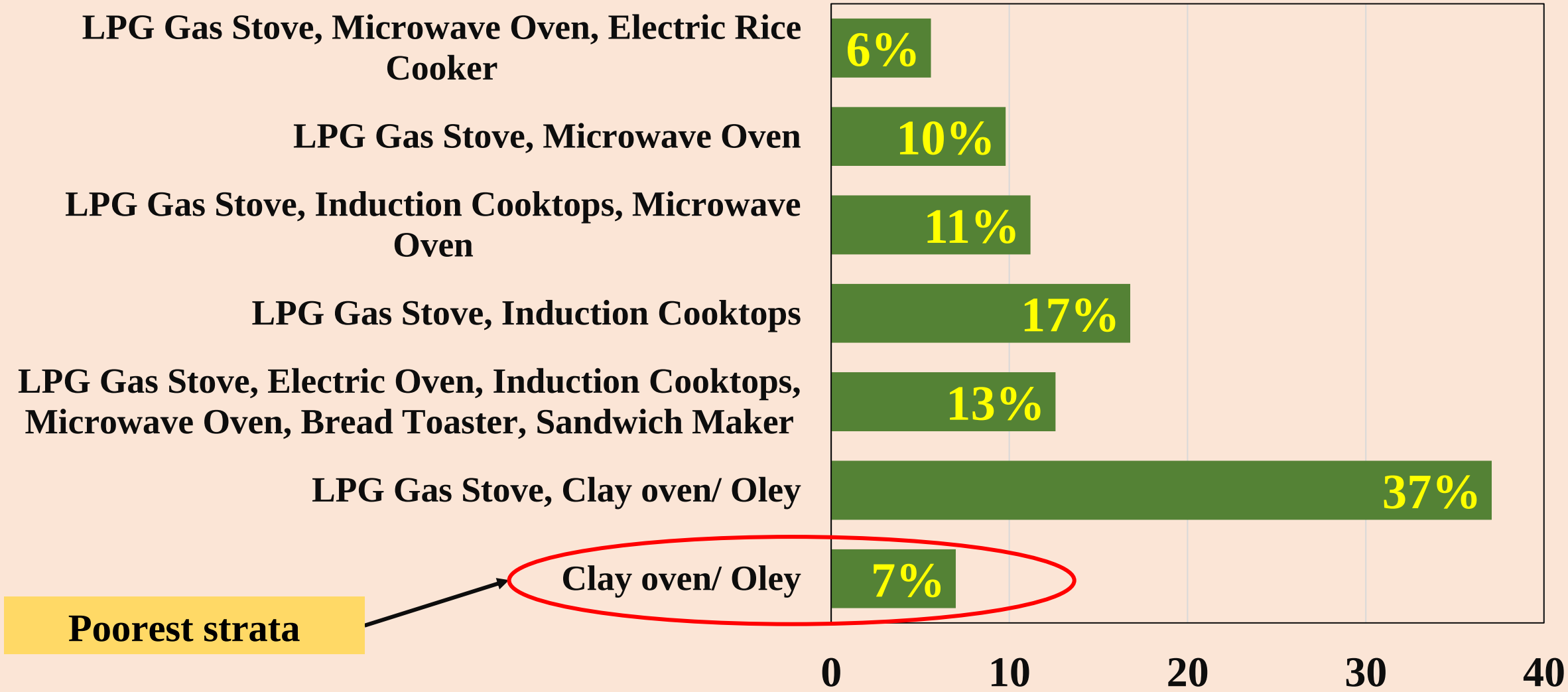
Cooking Fuels & Appliances Currently Used in Bengaluru Households (N=910)



- Clay oven/ Oley
- LPG Gas Stove
- LPG Gas Stove, Clay oven/ Oley
- LPG Gas Stove, Electric Oven, Induction Cooktops, Microwave Oven, Bread Toaster, Sandwich Maker
- LPG Gas Stove, Induction Cooktops
- LPG Gas Stove, Induction Cooktops, Microwave Oven
- LPG Gas Stove, Microwave Oven
- LPG Gas Stove, Microwave Oven, Electric Rice Cooker

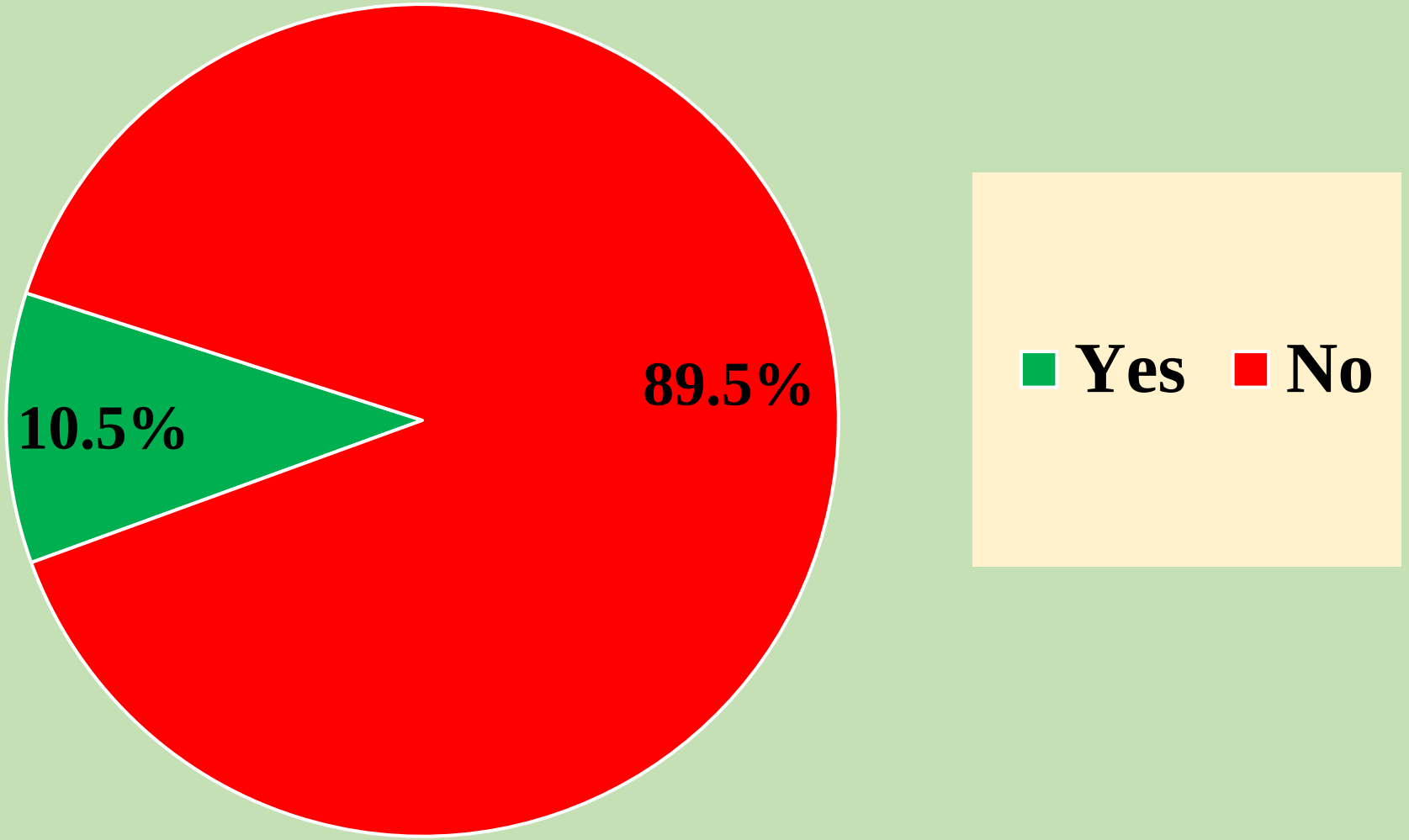
771 households out of 910 are exclusive LPG users

Cooking Fuels & Appliances used by 15.3% (N=139) survey samples (Not exclusively using LPG) [A diversity is observed]



Relative Abundance (%) of Access to Pradhan Mantri Ujjwala Yojana (PMUY) scheme among Exclusive LPG users (N=771)

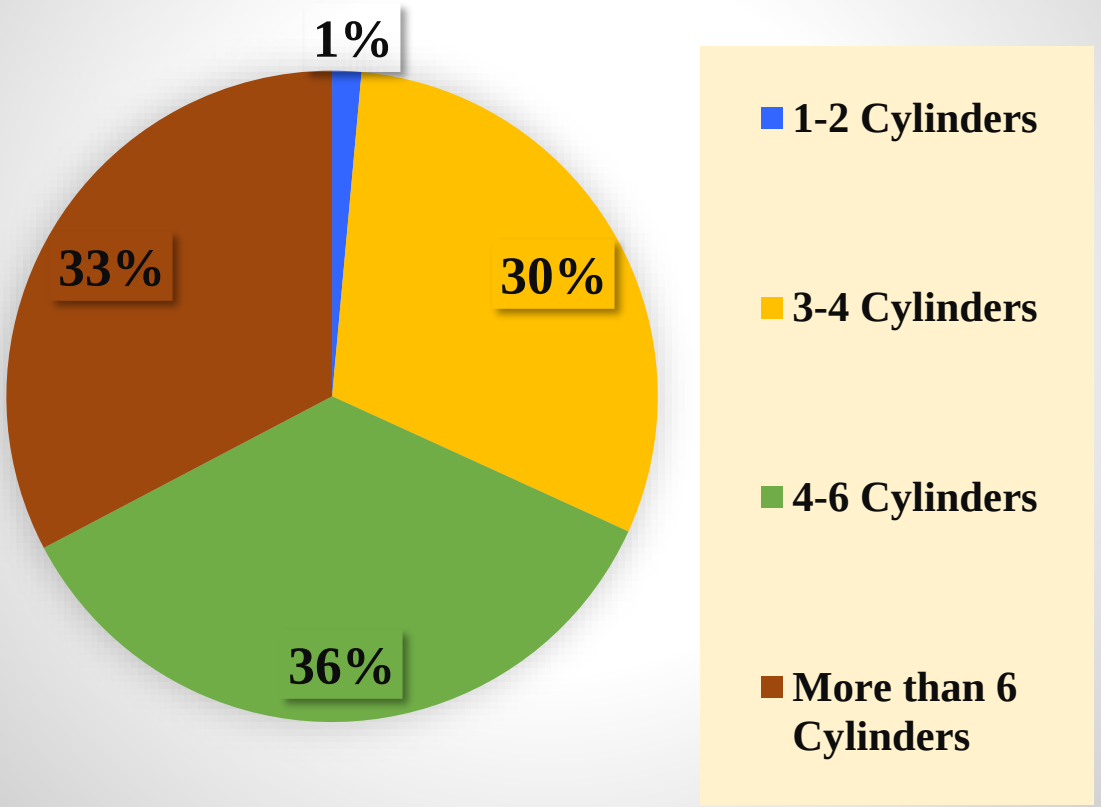
Many respondents mentioned **not getting PMUY benefits since the COVID times**. **Possible supply-chain disruption at local pockets**.



No. of LPG-using respondents (families)	Approx. no. of cylinders used at home	Percentage of samples using respective no. of cylinders	Average no. of cylinders used	Price of 14.2 kg cylinders (Rs. 905.50)	Total Annual Expense (INR) on LPG
12	1-2 Cylinders	1%	2	905.50	**1811**
273	3-4 Cylinders	30%	4	905.50	**3622**
319	4-6 Cylinders	36%	6	905.50	**5433**
295	More than 6 Cylinders	33%	8	905.50	**7244**

Total=899

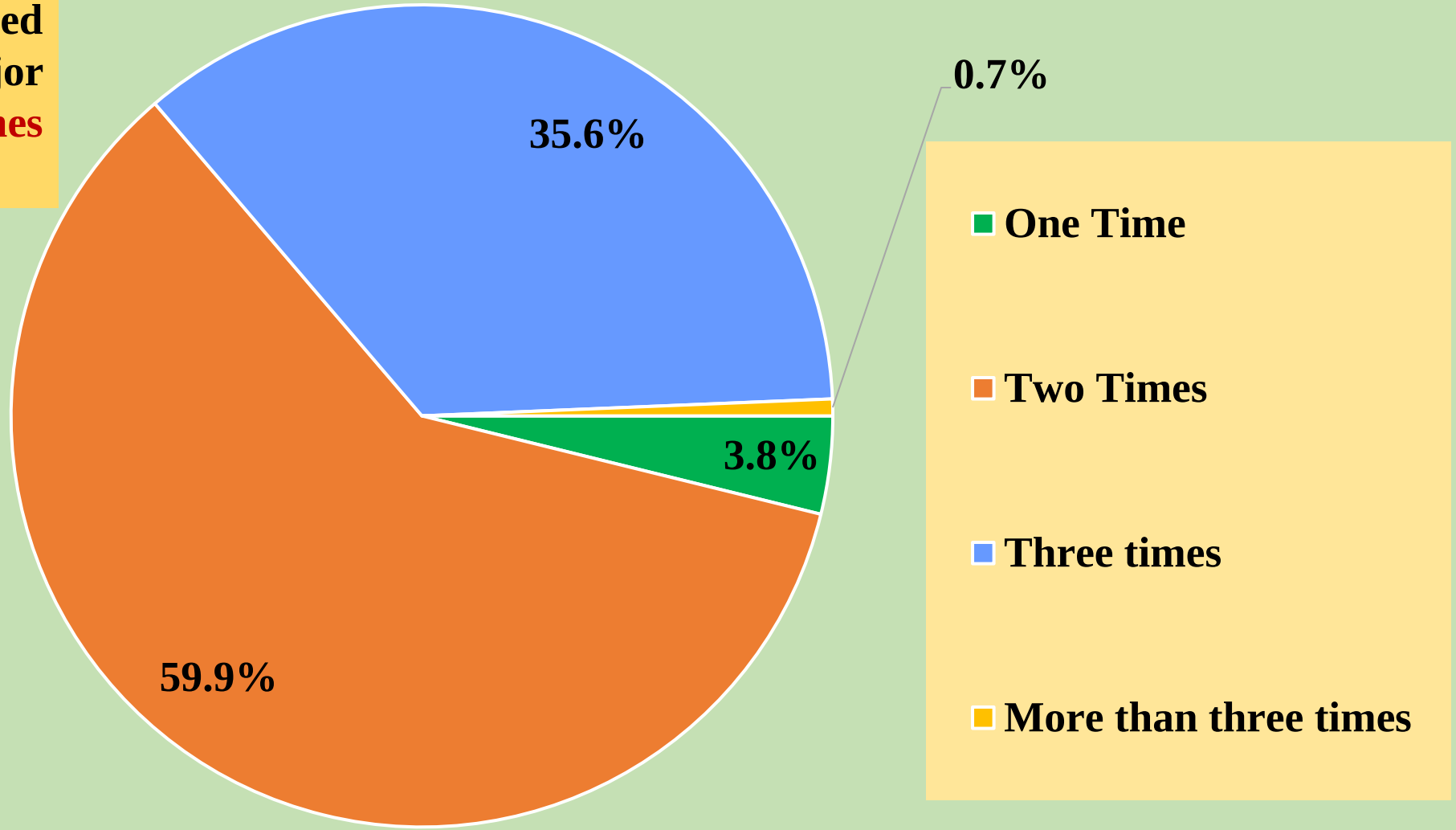
No. of cylinders used at home in a year (N=899)



Frequency of Major Meals and Taste Perceptions (N=910)

Relative Abundance (%) of Number of Times Meals are Prepared Daily

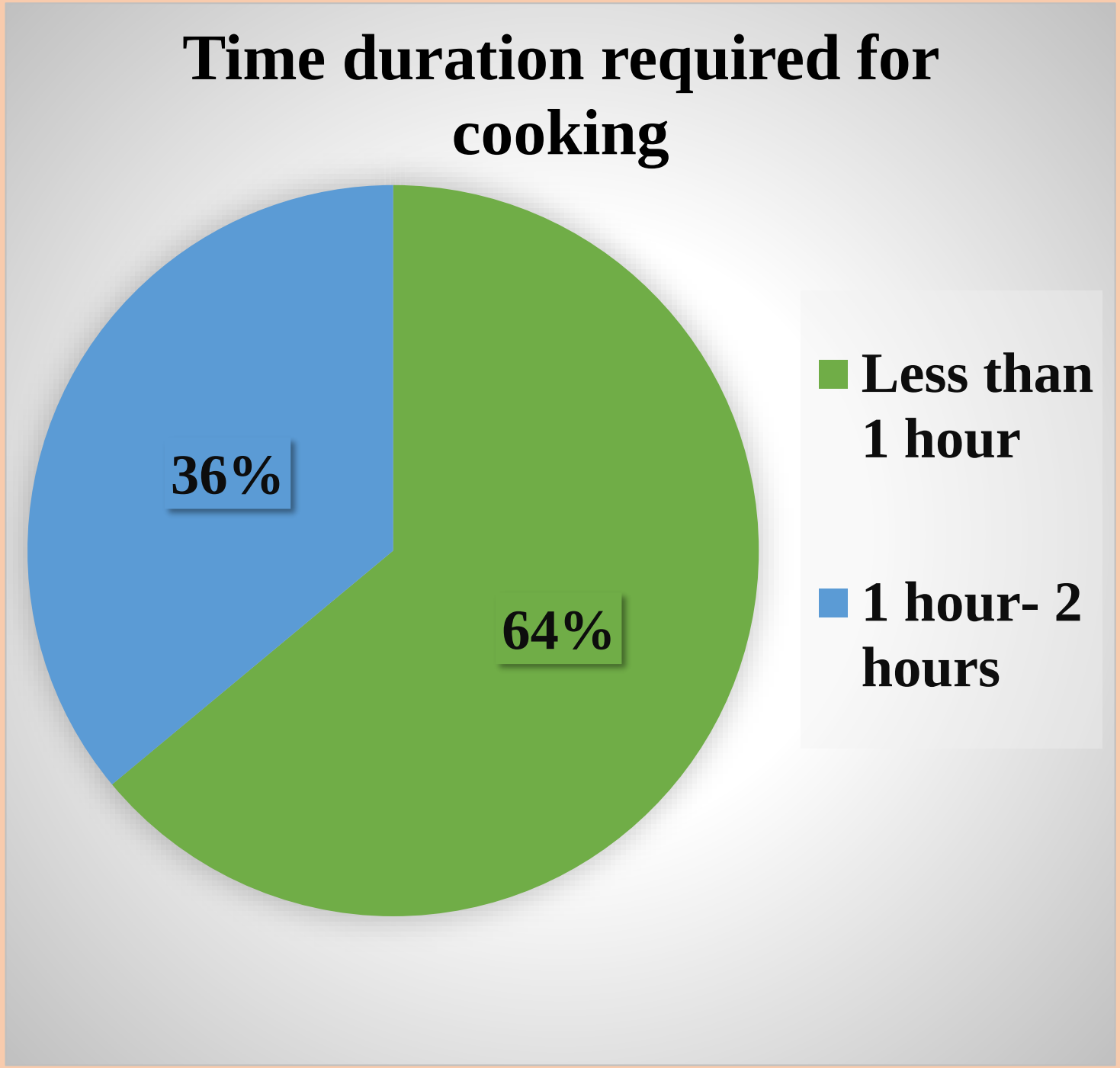
63.3% of Surveyed HHs make major meals 1-2 times daily.



- **Most families belonging to young couples have a family size of 2-5 members, so they require less cooking time.**

- **Cooking time often depends on the menu (Lesser cooking time means low cooking energy consumption).**

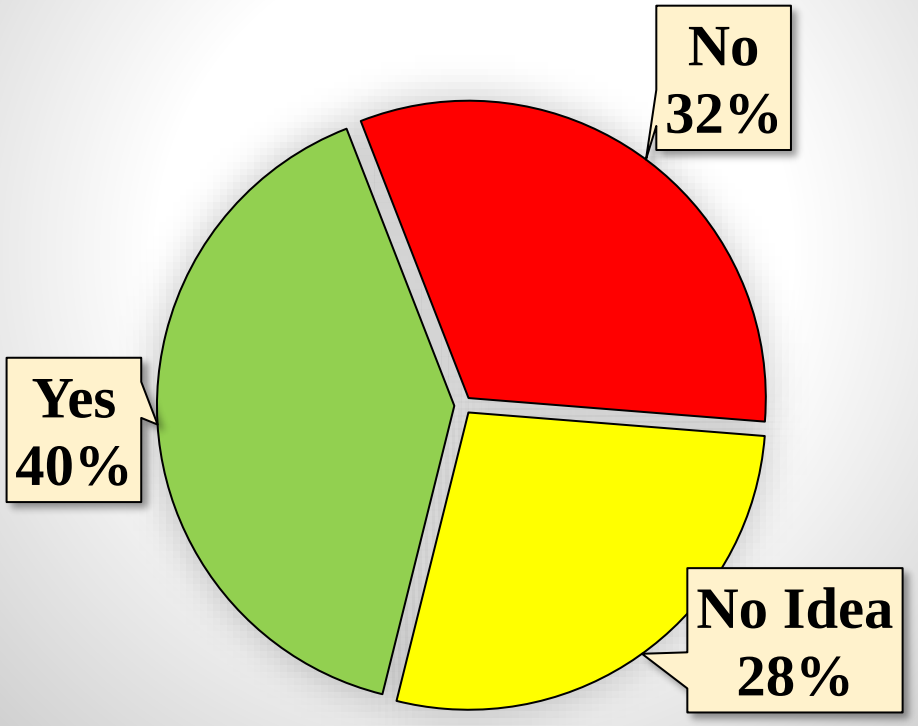
- **Also, several young working couples eat outside at least once daily (i.e., low cooking energy consumption).**



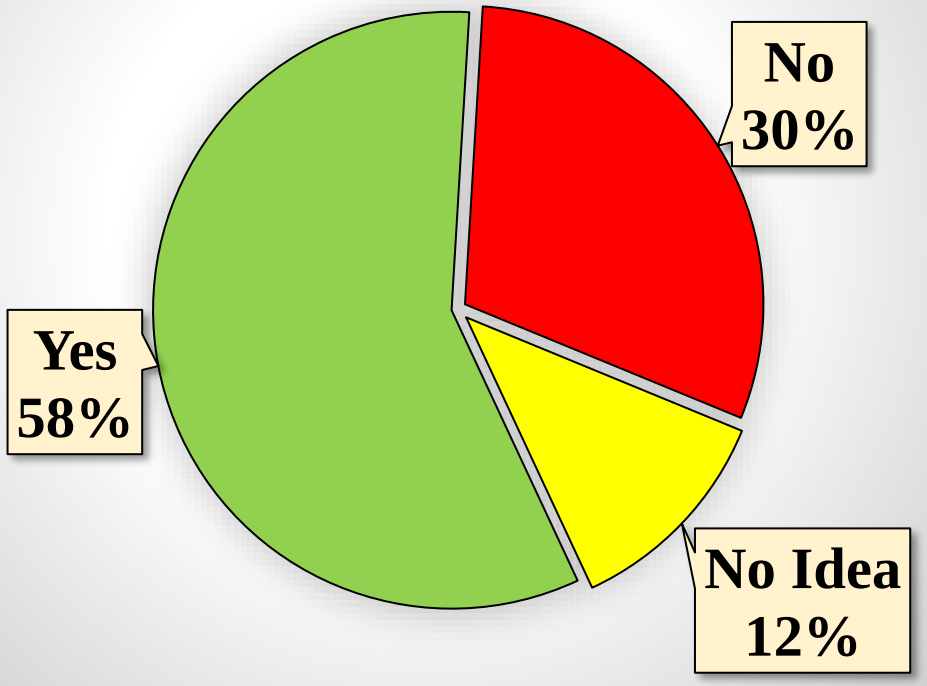
Variations in Taste Perception among Exclusive LPG Users & eCooking Users based on the Food Cooking Method

Do you think that the tastes of food items depend on how they are cooked (using gas ovens or using charcoal/ wood in Chulha)?

Exclusive LPG Users N=771,
84% of Total Survey Sample

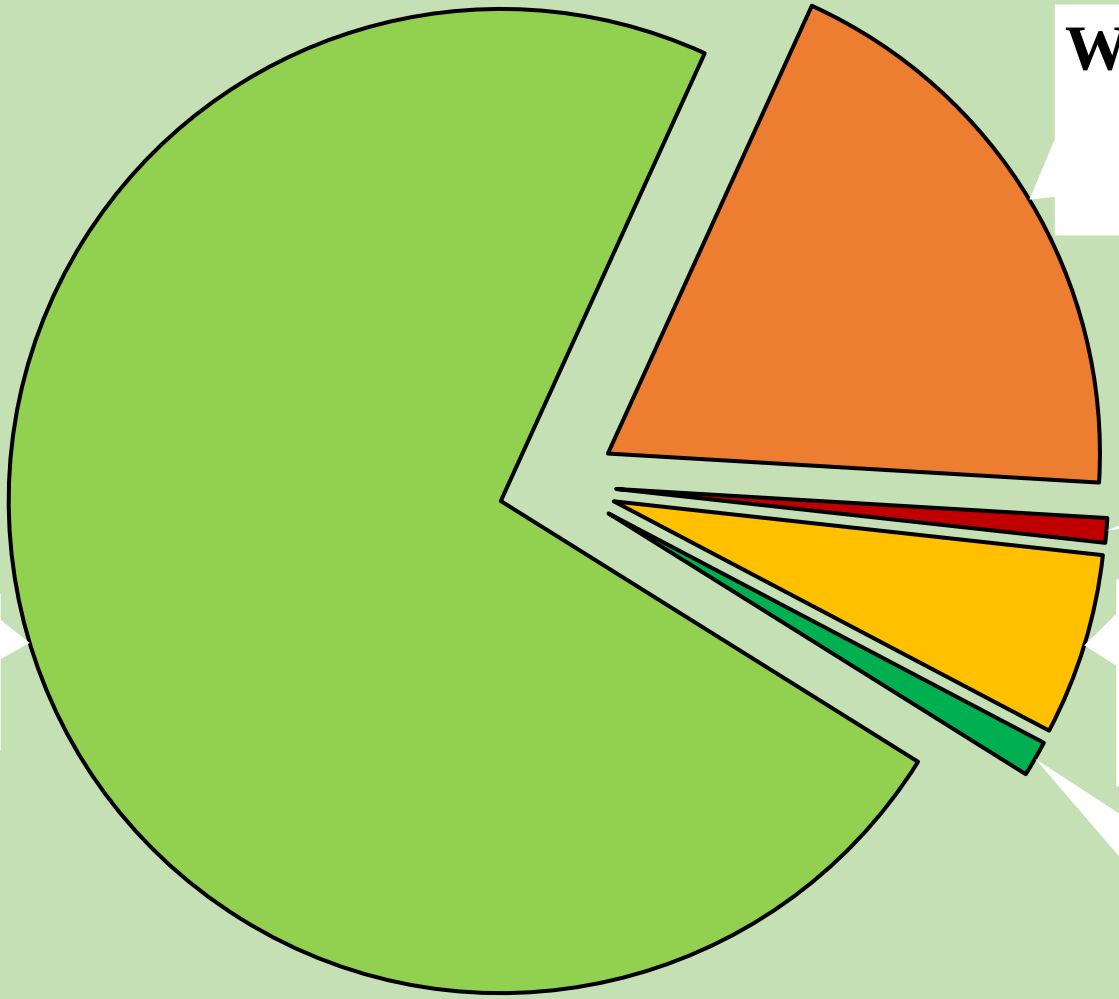


LPG & eCooking Users, N=76, 8.4%
of Total Survey Sample



Insights Regarding Household Decision-Making (N=910)

Exploring Major Household Purchases : A Study of High Value Transactions in Surveyed Households (N=910)



Woman of the House 19%

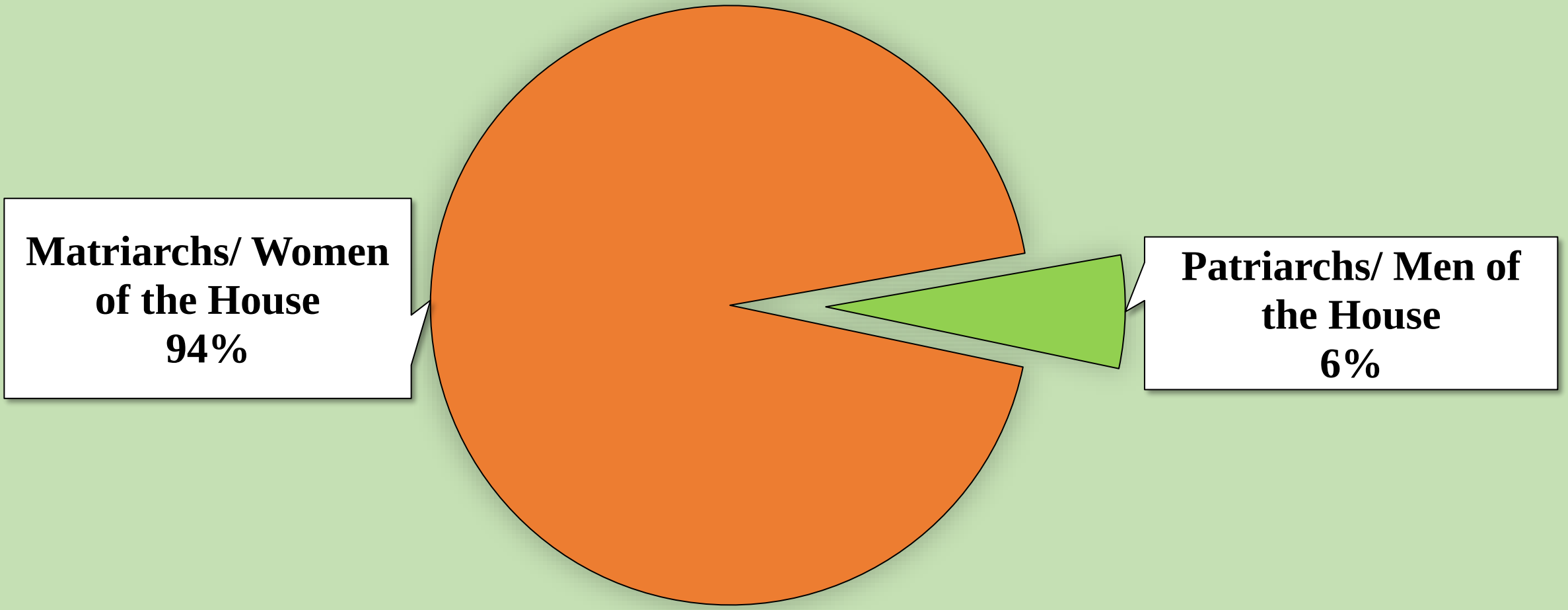
Grandparents 1%

Young Male (Unmarried) 6%

Young Female (Unmarried) 1%

Man of the House 73%

Understanding Decision-Making about Kitchen Purchases in Surveyed Households: A Survey of 910 Participants



Willingness to Pay for Modern Energy Cooking Devices (N=910)

➢ Do they want to purchase electric cooking appliances?

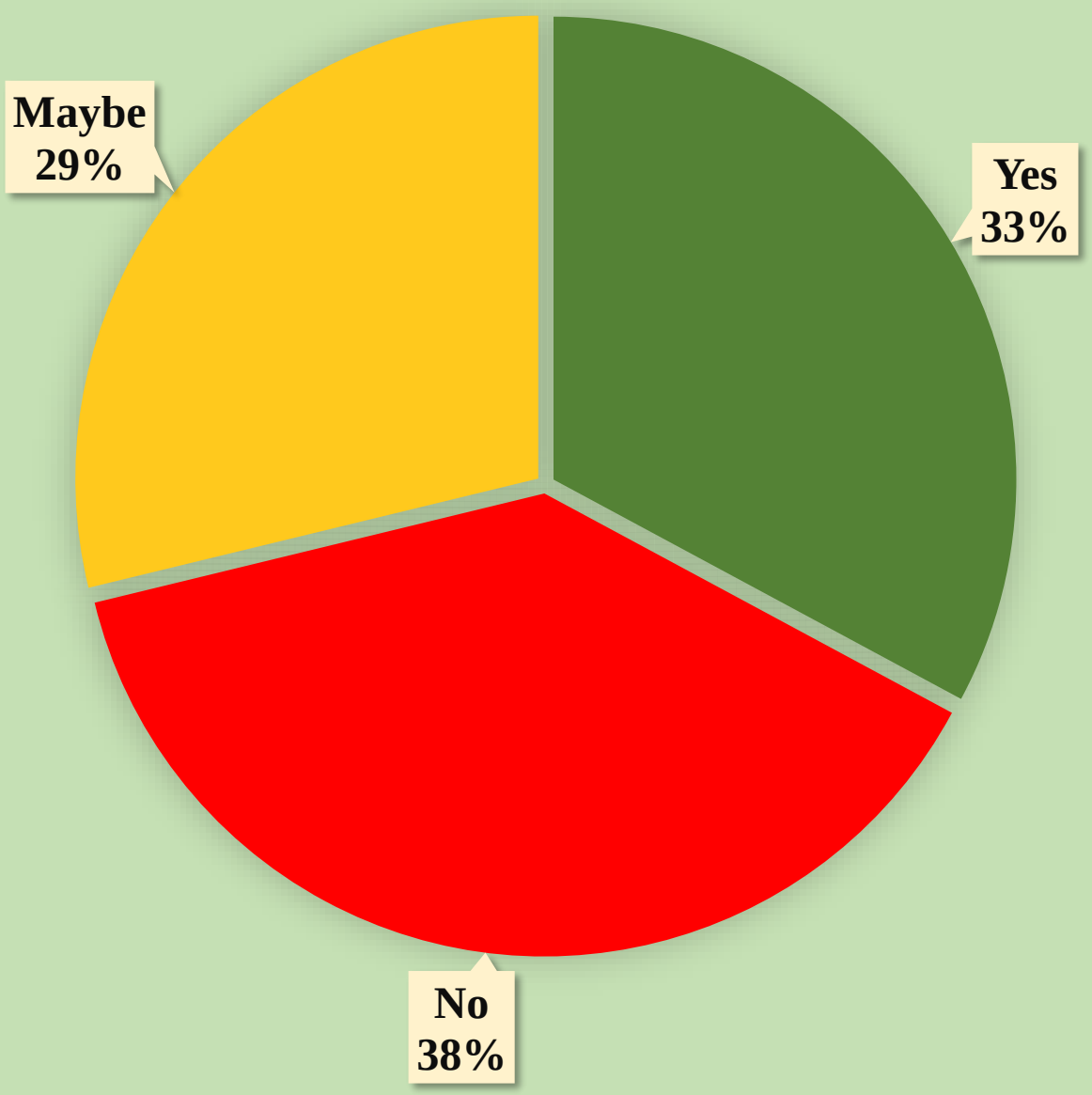
- **Yes:** 33%
- **Maybe:** 29%
- **No:** 38%

Through an appropriate nudge, a significant eCooking penetration can be achieved **(up to a high penetration level of 62%).**

The current level (among respondents) **is about 8%.**

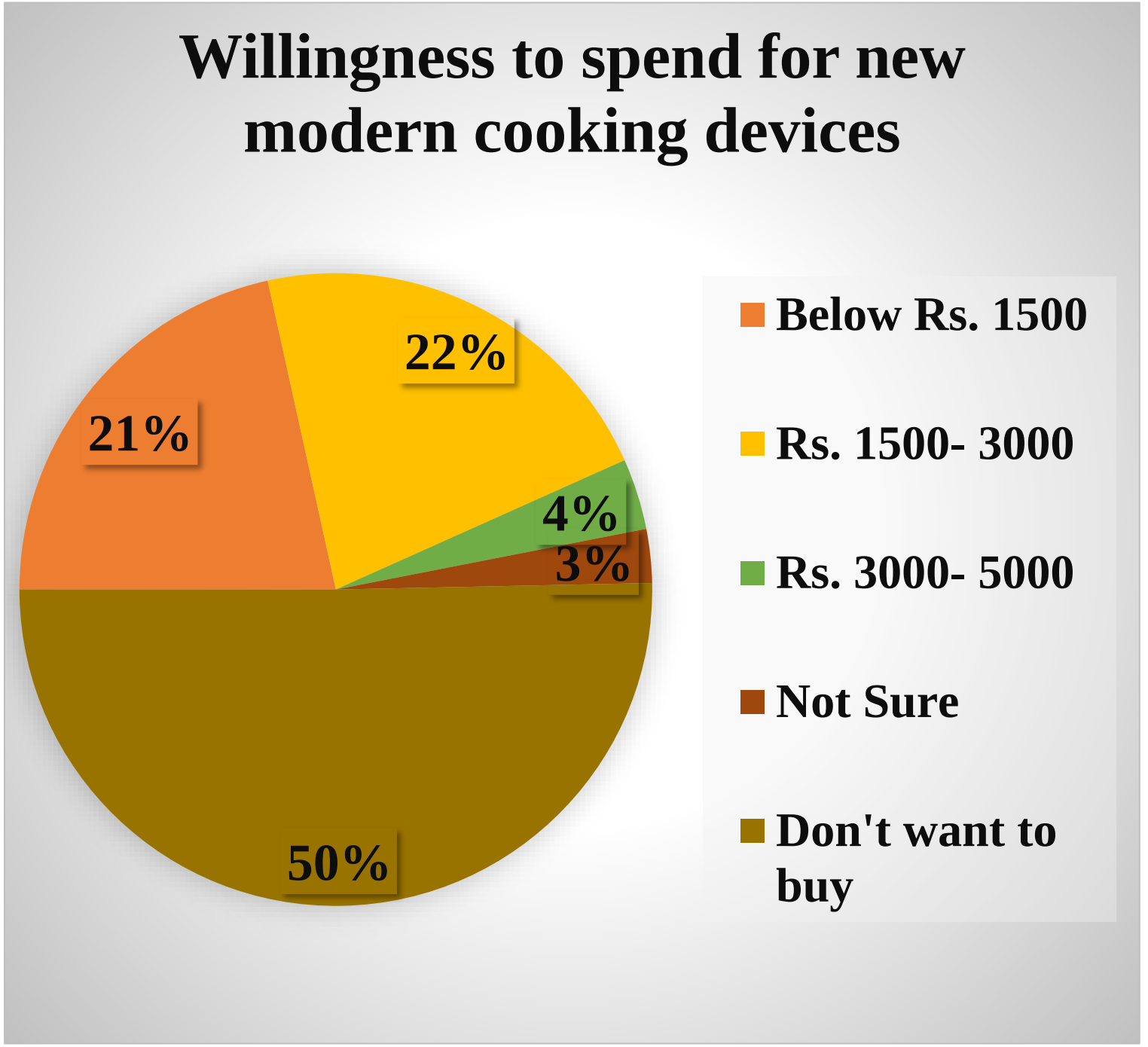
Around 33% of the respondents have shown interest in modern electricity-based cooking.

Do the respondents want to purchase electric cooking appliances? (N=910)



43%

- **Below Rs. 1500:** 21%
- **Rs. 1500 - 3000:** 22%
- **Rs. 3000- 5000:** 4%
- **Not Sure:** 3%
- **Don't want to buy:** **50%**



Electric Appliances used at home	No. of Respondents using it	Average Total Monthly Income (INR) (conservative)	Average Monthly Savings (INR) (conservative)
Refrigerator	N=678 (74.5%)	30940	2265
Washing Machine	N=500 (54.9%)	35660	2520
Heater/Geyser	N=271 (29.7%)	41505	3025
Electric Oven	N=84 (9.2%)	62795	4530
Electric Cook Stove	N=59 (6.4%)	50090	4055
Induction Cooktops	N=42 (4.6%)	61900	4550
Electric Rice Cooker	N=12 (1.3%)	66625	4560

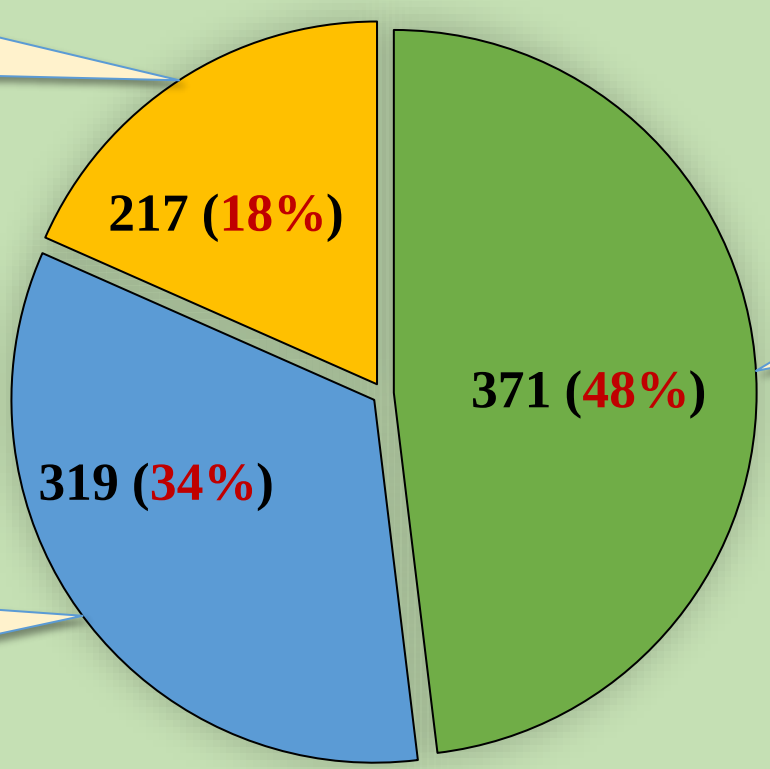
Perception Regarding Benefits and Challenges of eCooking (N=910)

➢ **Benefits of Electric Cooking as Perceived by Respondents (A data-driven ranking based on relative abundance) (N=450)**

- **Efficient** (Faster Cooking) (**24%**)
- **Convenient** (Easy to cook, use and maintain; affordable) (**22%**)
- **Versatile and Modern** (Alternative for LPG) (**15%**)
- **Time-saving** (**12%**)
- **Safety** (Safe to use) (**11%**)
- **Portable** (Easy to carry and clean) (**7%**)
- **Cost-effective** (consumes less current and saves money) (**7%**)
- **Environment-friendly** (**2%**)

- **Challenges of Electric Cooking Indicated by Respondents (A data-driven ranking based on relative abundance) (N=485)**
  - **Electricity cost considerations** (Higher power consumption & High electricity bills) (**27%**)
  - **Perceived risks** (Fear of electric shocks) (**18%**)
  - **Functionality** (Not easy to operate) (**13%**)
  - **Adaptation** (Can't cook all dishes) and **Adoption** (No multiple burners for large servings) (**9%**)
  - **Practicality** (Need specific vessels) (**7%**)
  - **Safety concerns** (May cause accidents) (**7%**)
  - **Reliability** (Disruption in food preparation due to Power-cuts) (**6%**)
  - **Taste factors** (Taste changes & can burn the food) (**6%**)
  - **Maintenance and durability** (Difficult to maintain) (**4%**)
  - **No Benefits** (**2%**)
  - **Accessibility and affordability** **(**Costly devices; Not as efficient as LPG**)** (**1%**)

Awareness about eCooking & Benefits and challenges of eCooking (N=910)



N1 (Not aware about eCooking)/N2 (Not aware of benefits and challenges of eCooking)
18%

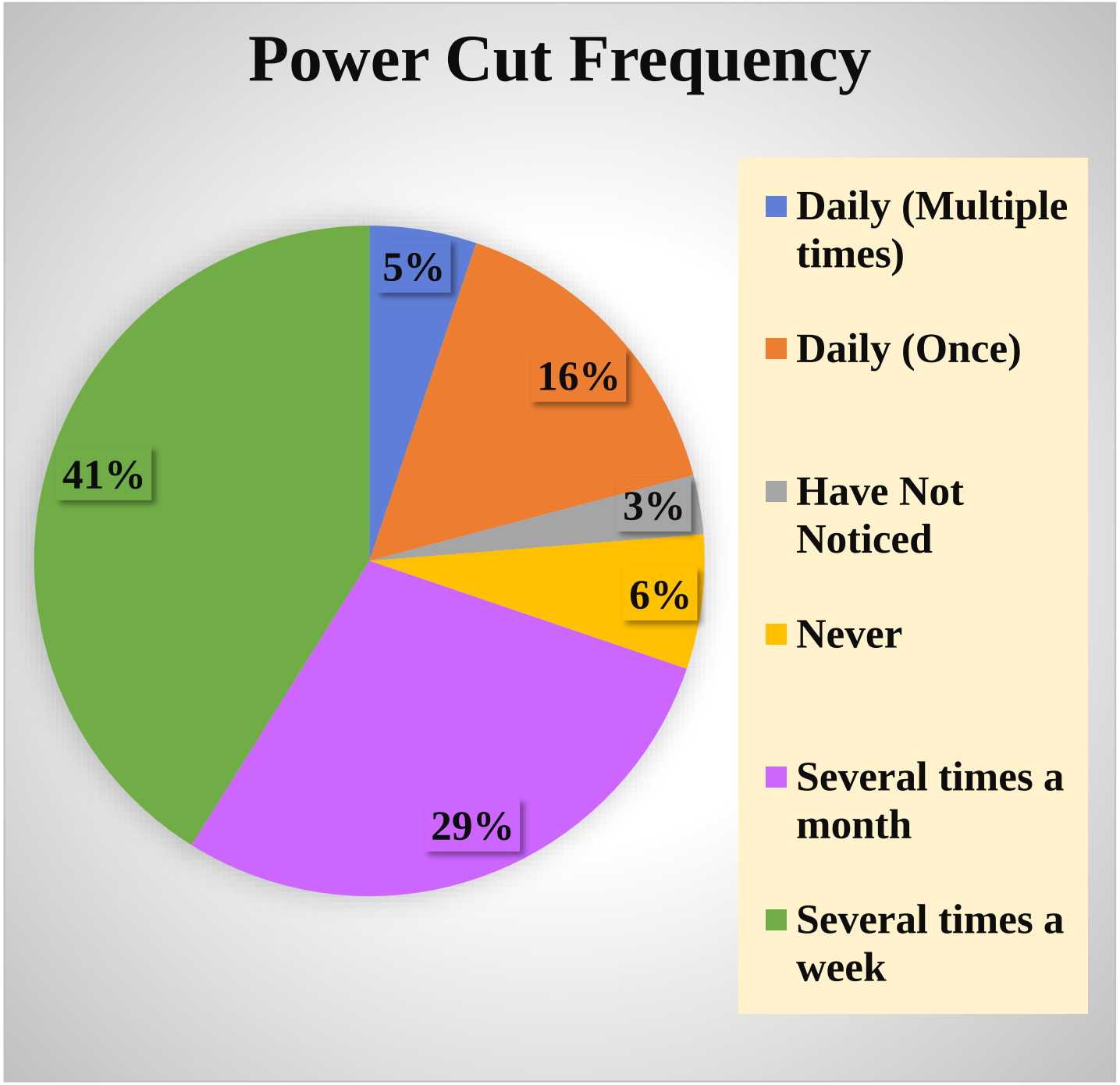
Y1 (knows about eCooking)/Y2 (Knows about benefits & challenges of eCooking)
48%

Y1 (Knows about eCooking)/N2 (Not aware of benefits and challenges of eCooking)
34%

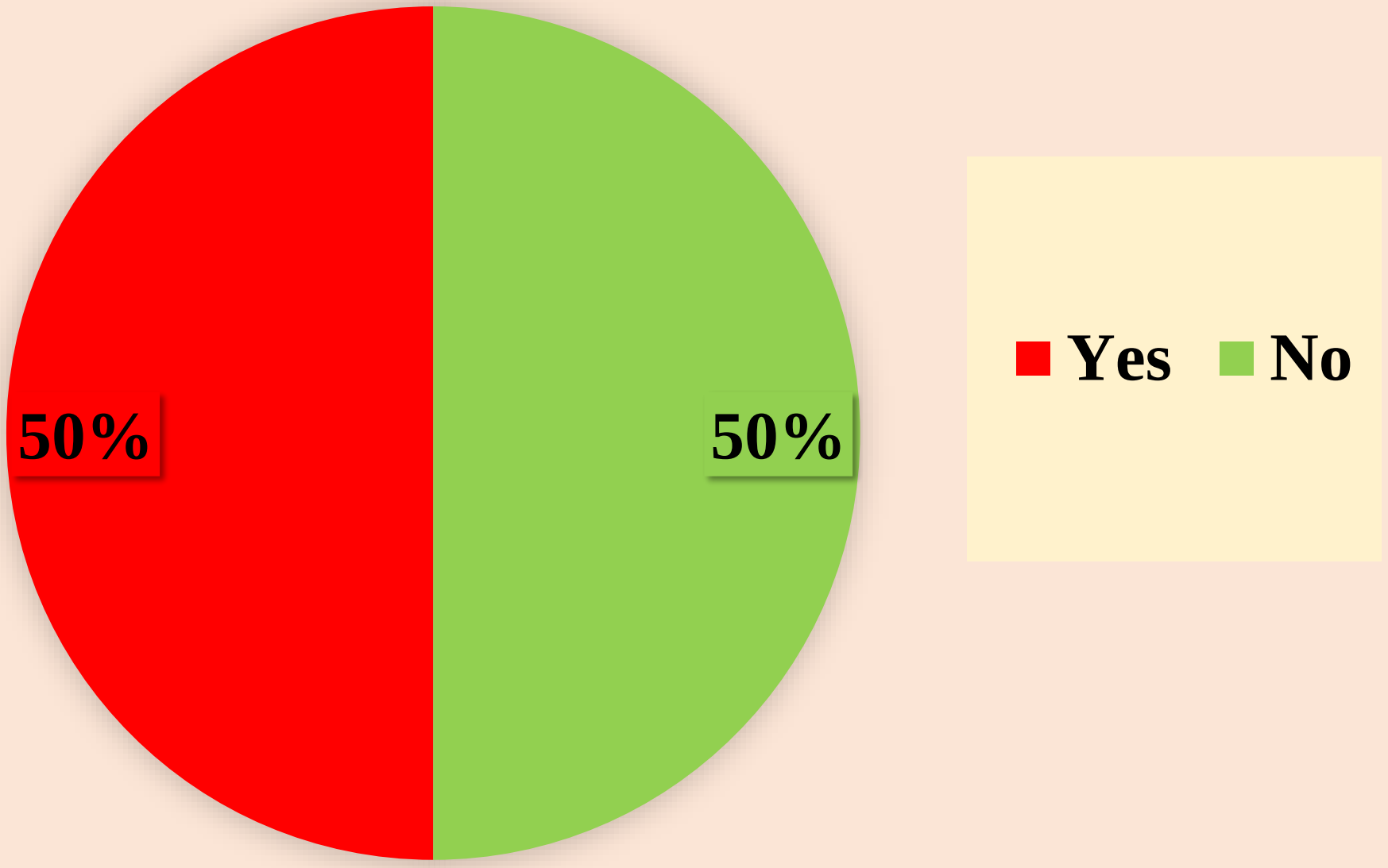
Household Access to Electricity and Reliability of Sub-distribution System (N=910)

62%

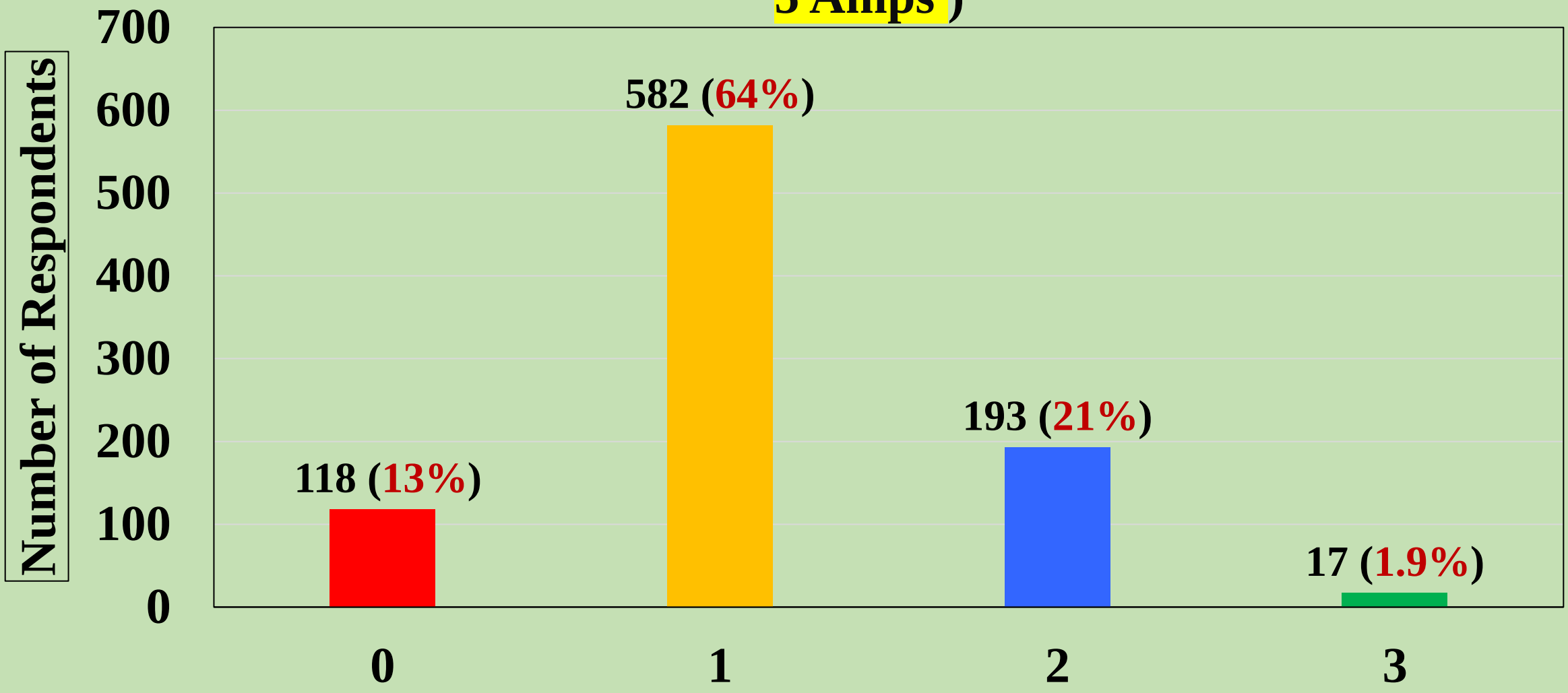
- **Daily (Multiple times):** 5%
- **Daily (Once):** 16%
- **Several times a week:** 41%
- **Several times a month:** 29%
- **Have Not Noticed:** 3%
- **Never:** 6%



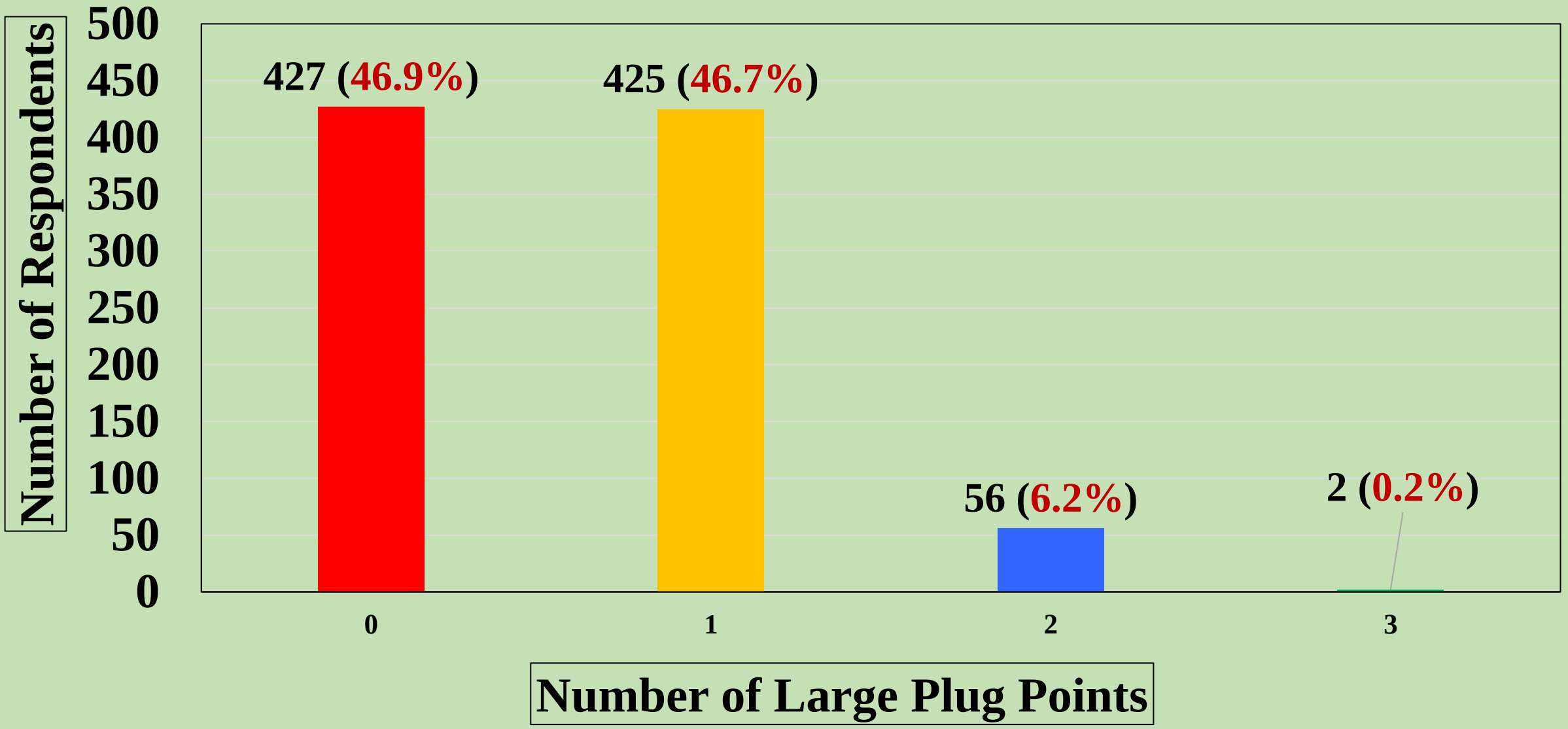
Transformer Bursting (Before Power Cuts) (N=910)



Configuration of Kitchen (N=910; Small plug points- 5 Amps)



Configuration of kitchen (N=910; Large plug points – 15-20 Amps)



Assessment of Electricity Generation and Supply-Demand Gap

Scenario Building (2024-2030)

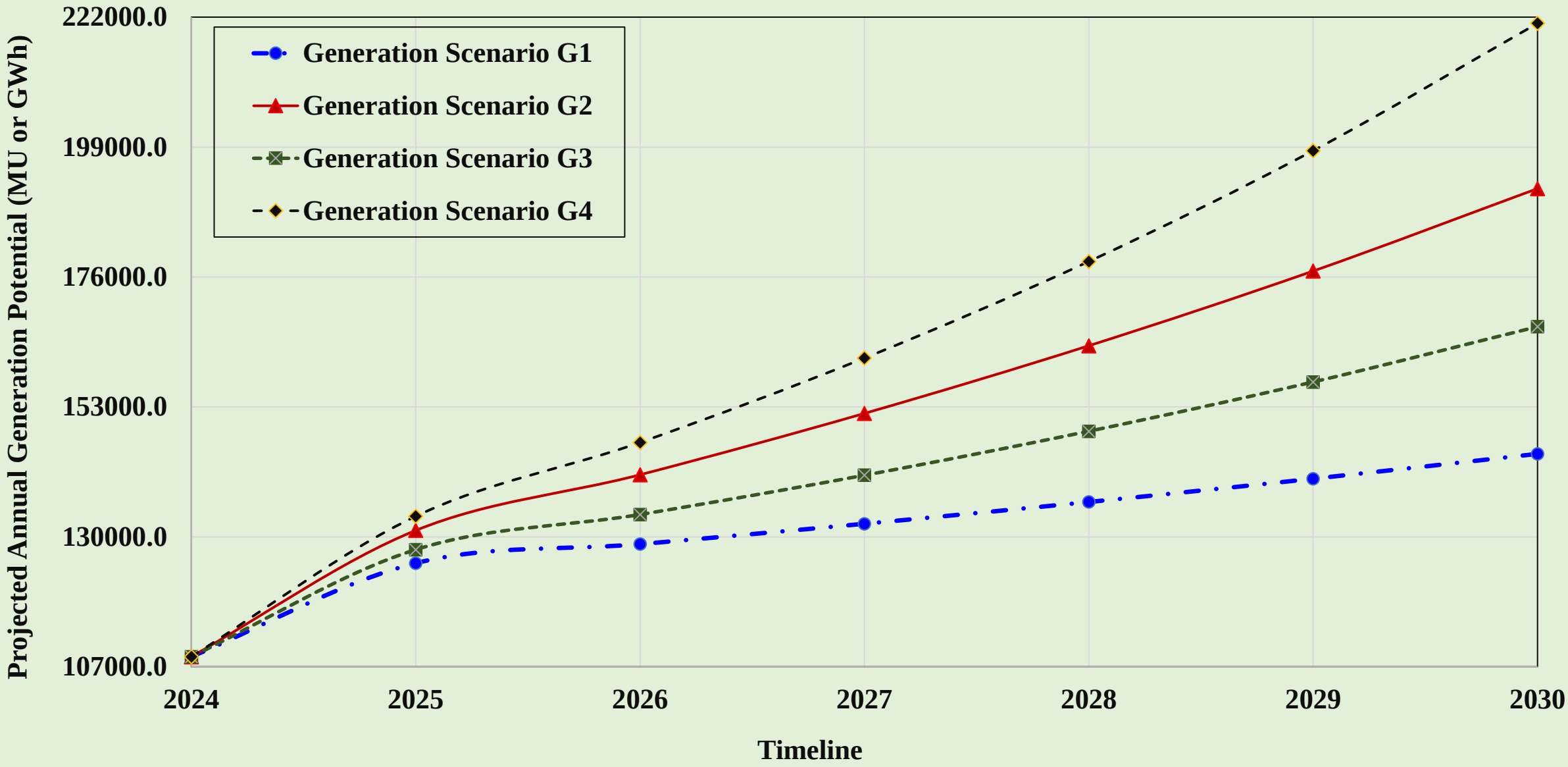
- **Scenario G1**: 50% Realization of the Envisaged RE Capacity Increase by 2030. The generation will take place at the current levels of average **PLFs** (for conventional generation) and **CUFs** (for renewable power). **This is the most pessimistic scenario among the four.**

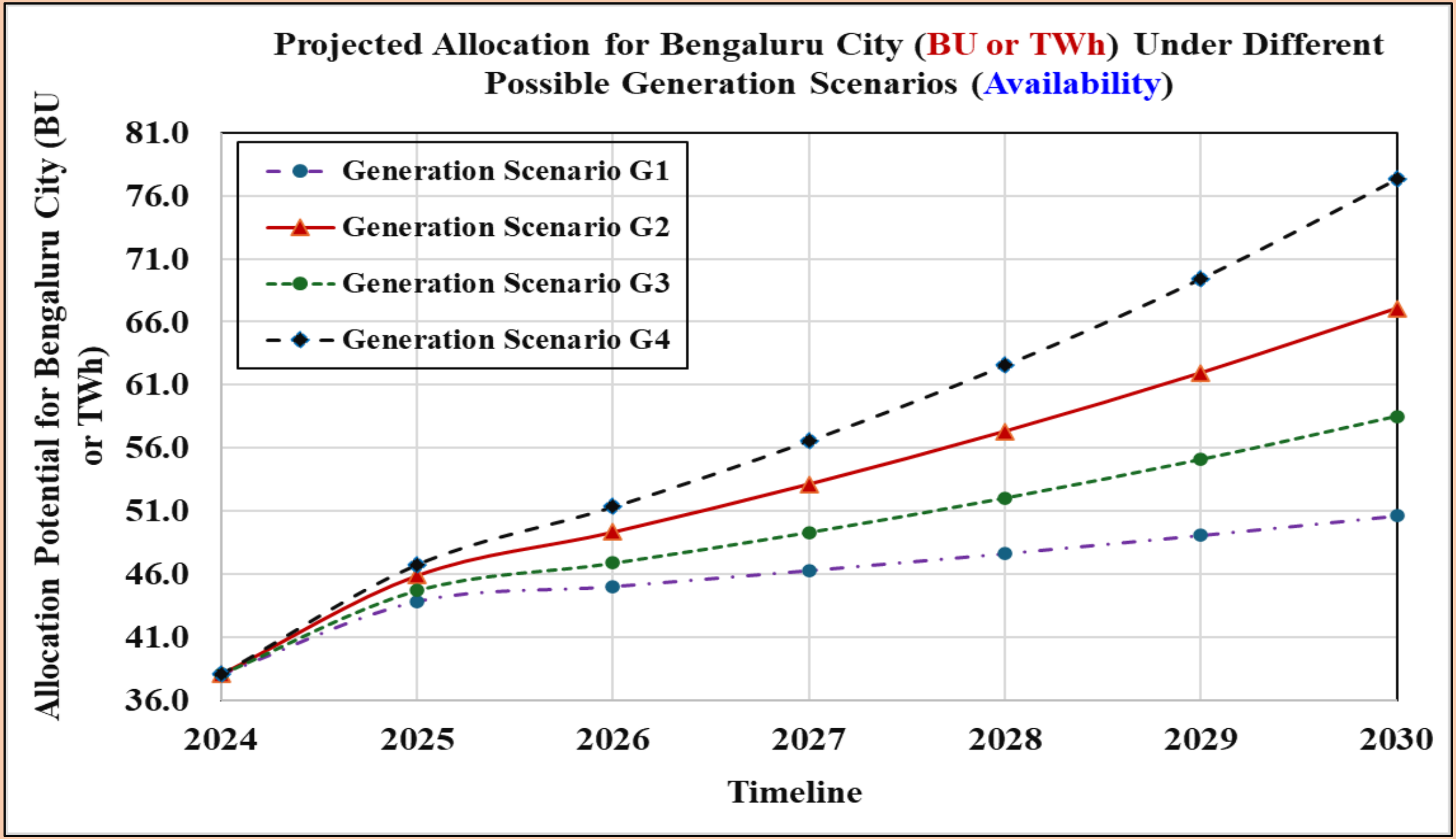
- **Scenario G2:** 50% Realization of the Envisaged RE Capacity Increase by 2030. A certain increase in generation is considered through a progressive increase in average **PLFs** (for conventional generation) and **CUFs** (for renewable power).

- **Scenario G3:** 100% Realization of the Envisaged RE Capacity Increase by 2030. The generation will take place at the current levels of average **PLFs** (for conventional generation**)** and **CUFs** (for renewable power).

- **Scenario G4:** 100% Realization of the Envisaged RE Capacity Increase by 2030. A certain increase in generation is considered through a progressive increase in average **PLFs** (for conventional generation) and **CUFs** (for renewable power). **This is the most optimistic scenario among the four.**

Projected Annual Electricity Generation Potential (MU or GWh) [Availability in the State of Karnataka]




Projected Allocation for Bengaluru City (BU or TWh) Under Different Possible Generation Scenarios (Availability)
Allocation Potential for Bengaluru City (BU or TWh)
81.0
76.0
71.0
66.0
61.0
56.0
51.0
46.0
41.0
36.0
Generation Scenario G1
Generation Scenario G2
Generation Scenario G3
Generation Scenario G4
2024
2025
2026
2027
2028
2029
2030
Timeline

Bengaluru Electricity Consumption (Literature Survey)

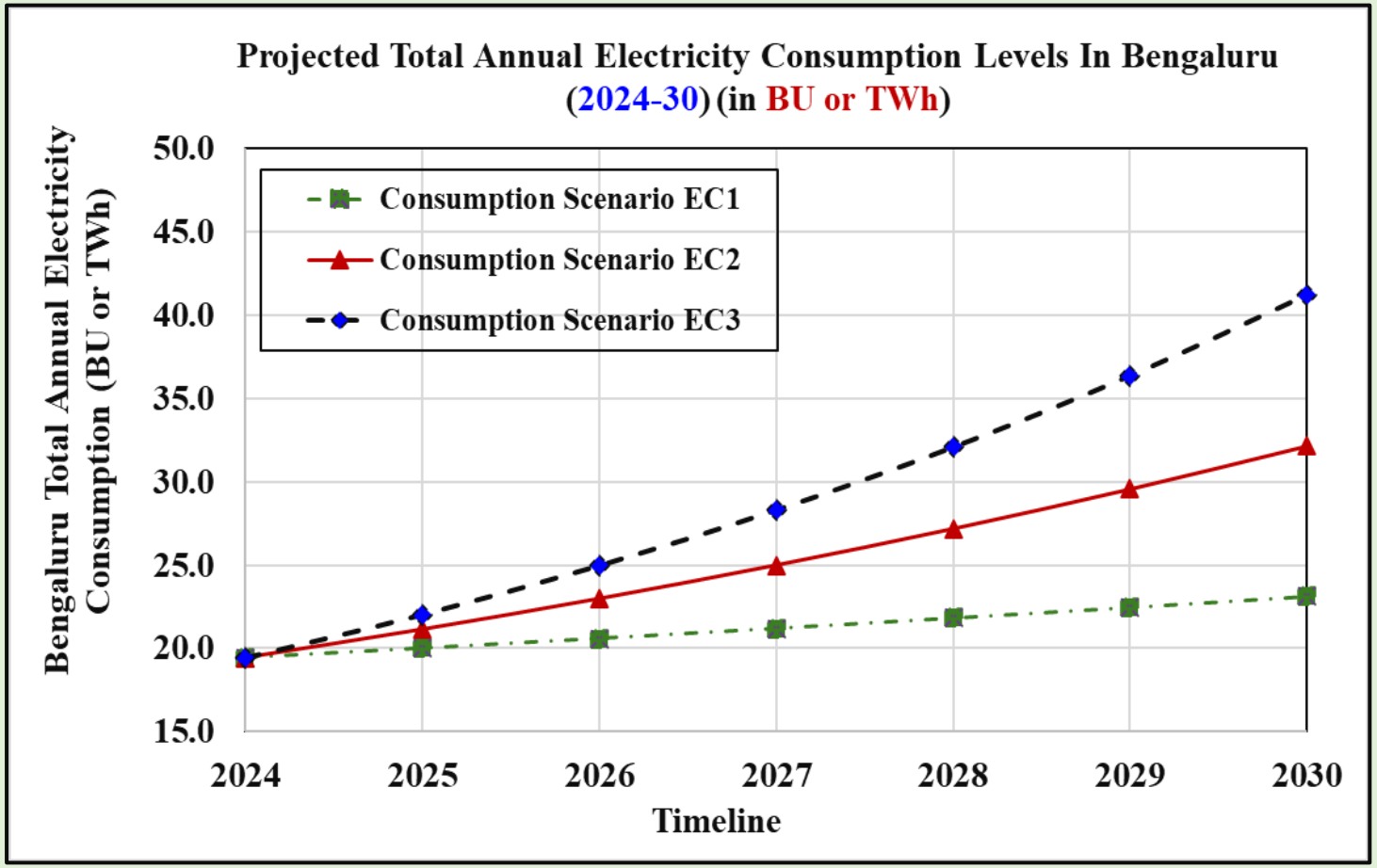
Zones	Minimum Per Capita Electricity Consumption (kWh/year)	Maximum Per Capita Electricity Consumption (kWh/year)	Mean	SD	Realizable Aspirational Per Capita Electricity Consumption Level (Mean +SD)
North	150	8018	1377.24	1135.77	2513.01
South	169	7610	1764.03	1362.29	3126.32
East	104	9349	1152.34	1226.92	2379.26
West	100	6924	1420.84	1075.14	2495.98
North East	106	3000	917.21	754.05	1671.26
North West	108	5112	1273.28	891.61	2164.89
South West	155	4822	1723.83	1006.52	2730.35
South East	127.66	6023.7	1472.31	1245.31	2717.62
		Overall Average (City Aggregate Level)	**1387.64**	**1087.20**	**2474.84**

Electricity Consumption Scenario Building

Scenario EC1: The per capita electricity consumption in Bengaluru City remains constant at **1387.64 kWh** between **2024** and **2030**. *However, the overall consumption increases due to the projected population growth*.

Scenario EC2: The per capita electricity consumption in Bengaluru City increases gradually at a CAGR of 5.66% to reach **1931.24 kWh** (i.e., ***Mean +0.5SD***) by **2030**, from the current level of **1387.64 kWh** in **2024**. *Further increases in overall consumption will emerge from the projected population growth*.

Scenario EC3: The per capita electricity consumption in Bengaluru City increases gradually at a CAGR of 10.12% to reach **2474.84 kWh** (i.e., ***Mean + SD***) by **2030**, from the current level of **1387.64 kWh** in **2024**. *Further increases in overall consumption will emerge from the projected population growth*.



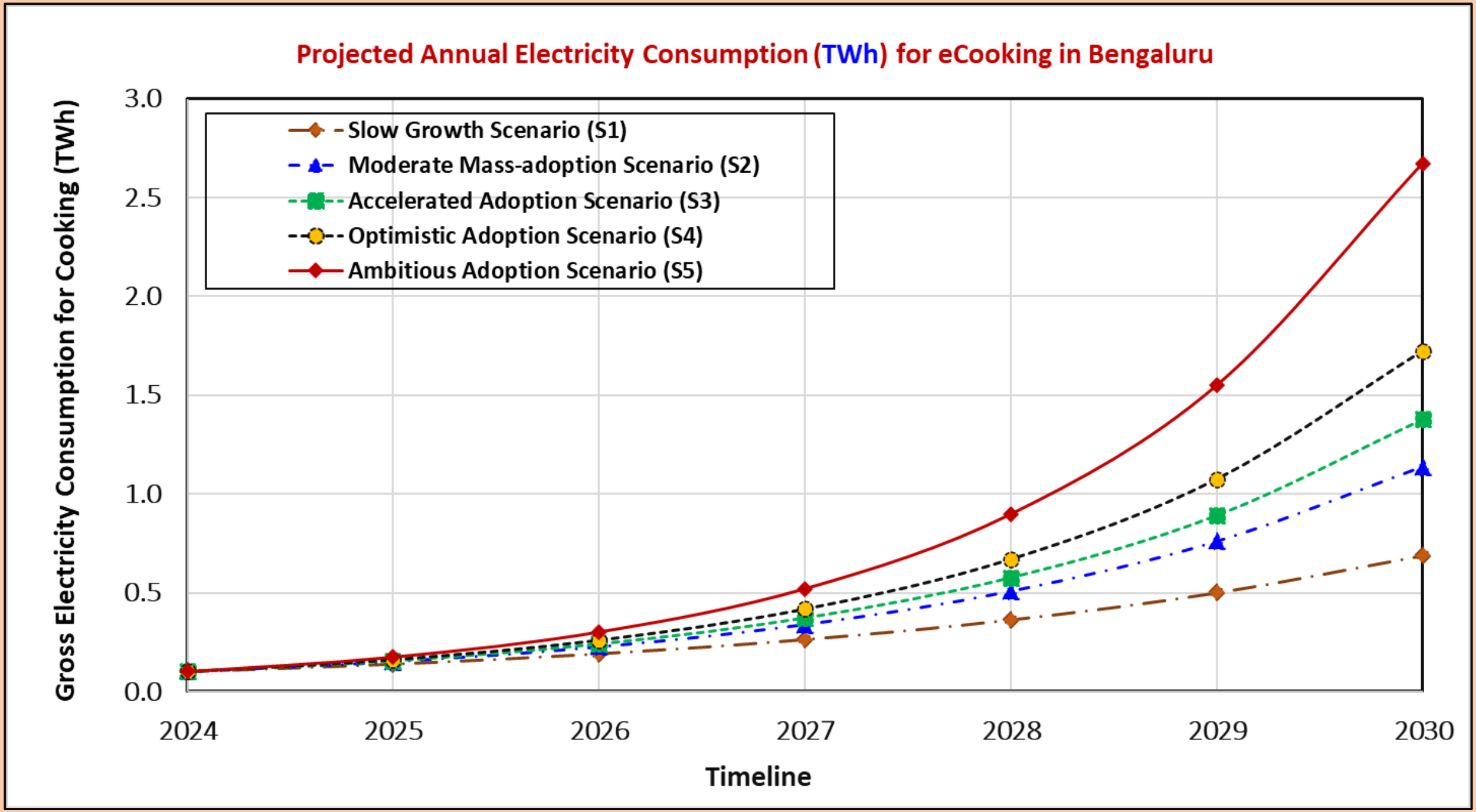
Electricity Demand Expected from eCooking

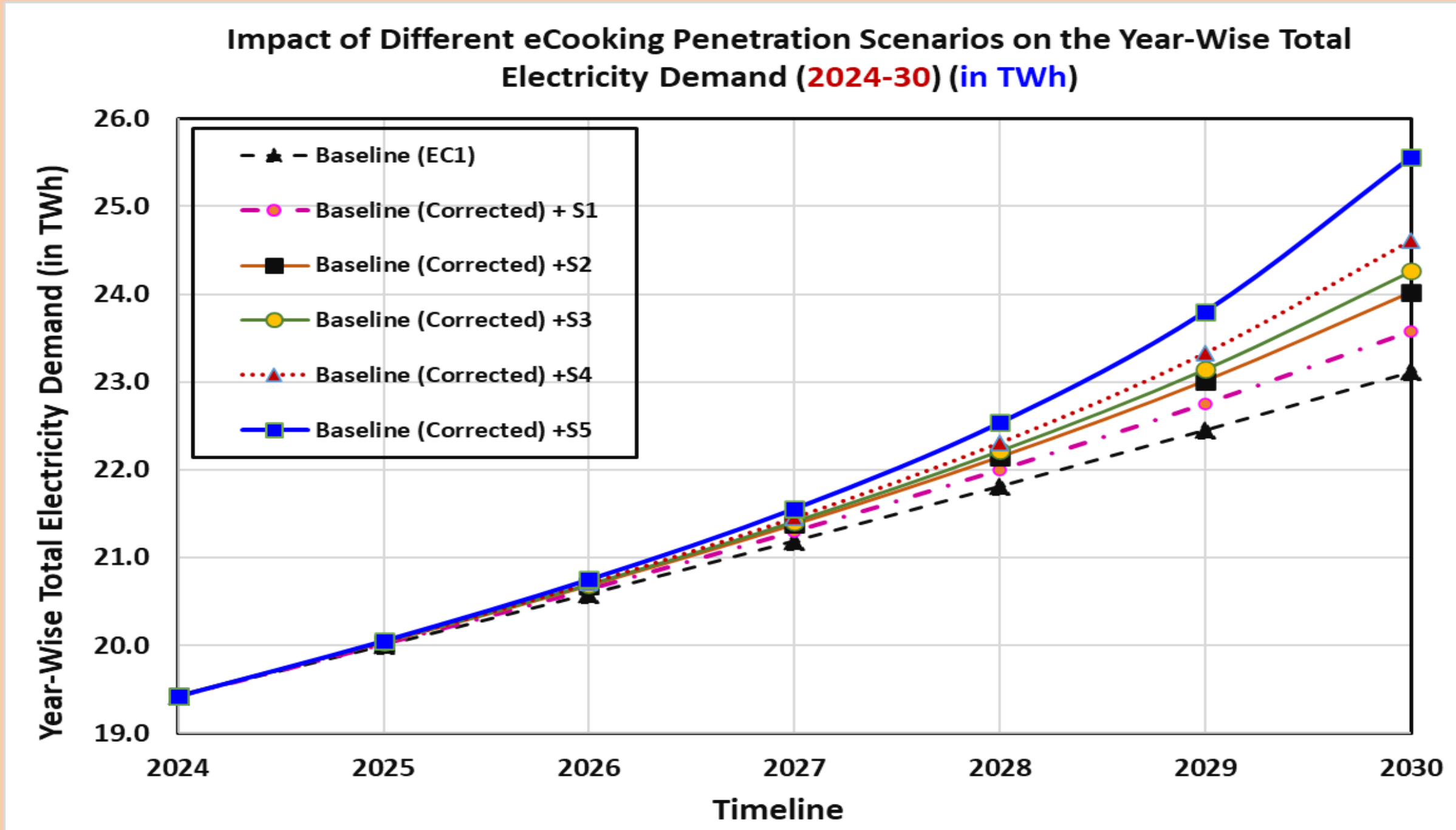
- A detailed bottom-up calculation has shown that if a **household with 4 to 5 members** shifts completely to electric cooking, the **maximum electrical energy consumed for cooking and allied activities per household per year** would be: **1034.8 kWh.**
- ***About 8% of the survey sample currently use some form of major electric cooking appliances for daily residential cooking as well as reheating leftovers.***
- In ***low-to-medium income Bengaluru households that currently use some form of eCooking alongside LPG to prepare the major meals, about 35% of the gross energy used in residential cooking comes from electricity.***
- *Regarding **the willingness to purchase electric cooking appliances**, **33% responded positively** (said Yes in the survey response), **29% indicated a tentative possibility** (said Maybe in the survey response), and **38% responded negatively** (said No in the survey response).*
- ***Therefore, from the current level of population penetration of eCooking (~8%), a realistic target would be to reach a population penetration level of 33% by 2030 (the timeline decided by the United Nations for the reasonable realization of SDGs). This would amount to achieving a low-hanging fruit.***
- ***Further, optimistic scenarios would involve attaining an eCooking population penetration level of more than 33%, up to a possible upper limit of 62% (highly optimistic scenario).***

Share of Electricity in the Household Cooking Energy Use

- *We assume that the average daily energy consumption for household cooking will remain fixed at 3.593 kWh (for an average family size of 4.4).*
- *However, the relative share of electricity in cooking energy usage is assumed to increase from the current level of 35% to 80% by 2030 (S1 to S4).*
- *In the Ambitious Adoption Scenario (S5), the share of electricity in cooking energy usage is assumed to reach 100% in 2030 amongst the population projected to take up eCooking.*

Different eCooking Transition Scenarios	Current Penetration Level of eCooking (%)	Projected Penetration Level of eCooking by 2030 (%)	CAGR (%) of Projected Penetration Till 2030	Current Share (%) of Electricity in Cooking Energy Use	Assumed Share (%) of Electricity in Cooking Energy Use by 2030	CAGR (%) of Electricity Share in Cooking Energy Use Till 2030
Slow Growth Scenario (S1)	8	20	16.5	35	80	14.772
Moderate Mass-adoption Scenario (S2)	8	33	26.64	35	80	14.772
Accelerated Adoption Scenario (S3)	8	40	30.77	35	80	14.772
Optimistic Adoption Scenario (S4)	8	50	35.72	35	80	14.772
Ambitious Adoption Scenario (S5)	8	62	40.675	35	100	19.12


Projected Annual Electricity Consumption (TWh) for eCooking in Bengaluru
Gross Electricity Consumption for Cooking (TWh)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2024
2025
2026
2027
2028
2029
2030
Timeline
Slow Growth Scenario (S1)
Moderate Mass-adoption Scenario (S2)
Accelerated Adoption Scenario (S3)
Optimistic Adoption Scenario (S4)
Ambitious Adoption Scenario (S5)


Impact of Different eCooking Penetration Scenarios on the Year-Wise Total Electricity Demand (2024-30) (in TWh)
Baseline (EC1)
Baseline (Corrected) + S1
Baseline (Corrected) +S2
Baseline (Corrected) +S3
Baseline (Corrected) +S4
Baseline (Corrected) +S5
Year-Wise Total Electricity Demand (in TWh)
26.0
25.0
24.0
23.0
22.0
21.0
20.0
19.0
2024
2025
2026
2027
2028
2029
2030
Timeline

eCooking Transition Constrained by LPG Domination

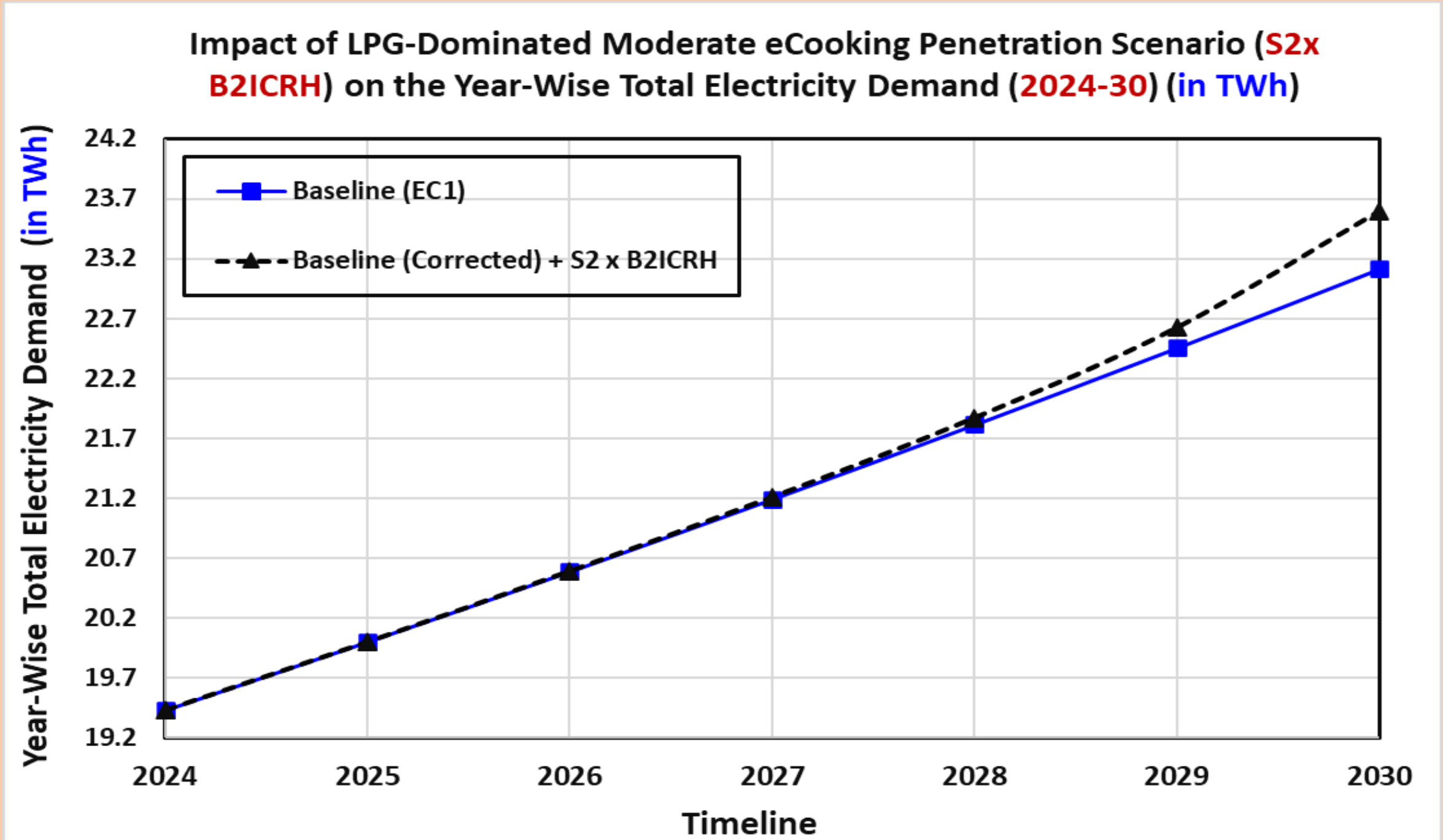
B2RH: From **base level consumption** (**Mixer/ Grinder**), electricity consumption grows to (**base level + consumption for food reheating/ water heating using microwave oven**);

B2IC: From base level consumption (Mixer/ Grinder), electricity consumption grows to (**base level + consumption for making rice using induction cooktop**);

B2ICRH: Accounts for both rice cooking using an Induction cooktop and food reheating/ water heating using a microwave oven.

Any mass penetration level above 8% may follow one of these scenarios in an eCooking Transition constrained by LPG domination.

The 8% population already into eCooking will follow the aspirational trajectory described before.


Impact of LPG-Dominated Moderate eCooking Penetration Scenario (S2x B2ICRH) on the Year-Wise Total Electricity Demand (2024-30) (in TWh)
Year-Wise Total Electricity Demand (in TWh)
24.2
23.7
23.2
22.7
22.2
21.7
21.2
20.7
20.2
19.7
19.2
Baseline (EC1)
Baseline (Corrected) + S2 x B2ICRH
2024
2025
2026
2027
2028
2029
2030
Timeline

Ecosystem Challenges Observed by Appliance Manufacturers

- **Responses from the eCooking Appliance/Vessel Manufacturers** indicate that the following points require close attention:

1. **Expansion of Product Range**: Need various eCooking appliances to cater to diverse consumer segments and cooking needs.

2. **Intensification of Marketing Efforts**: Need targeted awareness campaigns to impart education among consumers on the benefits and performance of eCooking appliances, leveraging the existing retail network. (**Even LPG retail networks can be utilized for rapid scaling-up**)

3. **Enhanced Engagement with the Government**: Need serious efforts toward meaningful advocacy and forming partnerships with government bodies to gain support and recognition.

4. **Bolstering of Local Manufacturing**: Need to explore the scope of local manufacturing to reduce dependence on international suppliers.

5. **Focus on Affordability**: The ways to bring down the price should be continuously explored to keep the consumers interested.

Directions for Evaluation of Transition Cost (1/3)

- NIAS study could identify **the directions for a preliminary assessment of the hidden costs** associated with the eCooking transition in Indian households.

Cooking Vessel Material & Shape:

- The LPG-dominated cooking landscape in Bengaluru showed a **predominance of round-bottom vessels made of aluminium**.
- To transform households toward using electricity for daily cooking, **a major shift needs to take place from current patterns of using kitchen utensils**.
- ***The steel vessels are used by the Bengaluru households.*** *However, all the vessels made of steel may not be suitable for use in electric cooking, such as cooking with induction cooktops.*

Price of eCooking Appliances:

- Several eCooking appliance vendors have kept a *minimum price of **Rs. 5000** for the devices.*
- *The survey of low-to-medium income households* (**N=910**) *indicates that a large fraction is willing to pay up to a price limit of **Rs. 3500** to experience a new, modern energy cooking solution*. The cost differential needs to be absorbed through a suitable mechanism.

Directions for Evaluation of Transition Cost (2/3)

Appliance Servicing and Repairing

- *The respondents who own eCooking appliances and use some form of eCooking daily reported the absence of 'servicing and repairing support' in case the device gets damaged or becomes operationally defective*.
- **Creating a pool of skilled manpower** would be necessary **to build a robust servicing and repairing support ecosystem**. This would require investments.

eCooking Knowhow Dissemination

- Public Relations channels are needed for **community-level dissemination of information** including a **hands-on demonstration on cooking popular items on various eCooking appliances**.
- The dissemination of **knowledge regarding appliance upkeep** is also necessary.
- *Investments are needed to engage **domain experts and full-time educators** who would inform the consumer community and provide feedback to the supplier side regarding consumer concerns*.

Directions for Evaluation of Transition Cost (3/3)

Understanding Consumer Mindset in Rural and Urban Settings

- *There is a difference in people's mindset in urban and rural / semi-rural settings in India.*
- *Busy life in the cities may prompt people to **purchase eCooking appliances to save time and gain convenience**, **affordability will be the most important consideration in rural areas**.*

Robust Sub-distribution Infrastructure (including Household Wiring)

- *Strengthening the **sub-distribution infrastructure** (cabling and augmenting transformer capacity) to ensure uninterrupted access to reliable electricity.*
- *Additionally, the concealed **wiring in the households also needs to be strengthened to facilitate adequate load-carrying capacity**.*
- *Low-income households may not be able to spend for such upgradation. GOI may need to find suitable financial partners to unlock funds necessary for electrical sub-distribution infrastructure enhancement aimed at **robust last-mile connectivity of electricity distribution networks**.*

Rejuvenated & Proactive Transition Efforts from Appliance and Vessel OEMs

- *Dietary preferences are deep-rooted in behavioral and cultural practices. Interventions from the eCooking system should be aimed at the direction of cooking fuel (and appliances) and the cooking vessels.*

Thank You!☺

‘Know-how of daily-life technologies’ as a proxy to understand the attitude toward any change (Transition Reflex)

- About **36%** **of the respondents** mentioned that they **Never** use QR Code Payment / Online Payment in daily life.
- **Vernacularity in Internet Browsing Activities was found to be substantial**: 45.8% reported using **English**, 35.5% used **Kannada**, and 6.5% used **Tamil**.
- About **23%** of the respondents mentioned **NOT** being comfortable with Electronic Gadgets & Equipment.
- About **38%** of the respondents mentioned requiring help from others for searching information on the Internet.