

Proposed PT PLN (Persero) Marketing Capability to Realize Induction Stove as A Preferable Option for LPG Substitution and Electrifying Lifestyle Growth

Rizda Noverita^{1,*} Dr Jacob Silas Mussry²

¹ PT PLN (Persero); MBA ITB Jakarta

² MBA ITB Jakarta

*Corresponding author. Email: rizda.noverita@sbm-itb.ac.id

ABSTRACT

The Government of Indonesia has been concerned about the Liquid Petroleum Gas (LPG) subsidy burden since the supplies from domestic refineries have become limited in recent years. Meanwhile, it can be freely bought by all segments, instead of only being accessible for the poor. Therefore, the government formulated a program to replace LPG with induction stove, dimethyl ether, and city gas network. The optimistic target is to reach 18% of households using an induction stove in 2050. There are some barriers to achieving this target, such as customers perceived that induction stoves and electricity are expensive. They are also worried about electricity outage, accessibility, compatibility, durability and security of stoves. However, the business potential of induction stoves is quite promising that could reach 6.44% additional revenues in 2050. The aim of this study is to analyze how to strengthen the marketing capability of PT PLN (Persero) in popularizing induction stoves as a preferable option for households to switch their cooking fuel from LPG to electricity. The results of the study show that marketing capabilities need to be strengthened in Customer Relationship Management (value delivery network and complaint handling), New Product Development (features and sales team) and Brand Management (marketing communication). Based on the results, most of the customers are interested in using an induction stove (63,36%), but just a few of them are willing to switch (15,7%). Thus, strengthening marketing capability is needed, as well as focusing on defining the market penetration and customer profiling. Furthermore, a business ecosystem needs to be built through proposing Government regulation, encouraging innovation of induction stoves from the producers, and collaboration promotion programs.

Keywords: *LPG subsidy burden; marketing capability; induction stove; clean cooking; electricity.*

1. INTRODUCTION

Based on Indonesia Energy Outlook 2019, the assumption of Gross Domestic Product (GDP) growth is about 5.6% per year, and the rate of population growth is 0.7%. GDP and population growth are the underlying assumptions of increasing the Liquefied Petroleum Gas (LPG) demand in the household and commercial sectors. Moreover, the long-term impact of a successful converting program of the kerosene to LPG has increasing LPG consumption. At the same time, the ability of LPG supplies from LPG refineries and domestic refineries is limited and continues to decline. For this reason, the increasing import of LPG that align

with demand increase is feared to burden Indonesia's state budget. LPG demand is expected to increase from 7.2 million tons in 2017 to 17.4 million tons in 2050 or an average increase of 2.7% per year, of which only 2.0 million tons (26%) are fulfilled from refinery production while the rest are imported [1]. The share of LPG import to total consumption reached 72% in 2017 and is projected to reach 78% in 2050. Import of natural gas (LNG) is inevitable and expected to continue to increase due to the decline in natural gas reserves and production. Therefore, the government is planning to substitute LPG.

Furthermore, the government formulated a program to replace LPG with induction stoves, dimethyl ether (DME), and the city gas network [2]. Since 2017, PT PLN (Persero) has been appointed by the government to socialize the use of induction stoves. The Government of Indonesia plans to convert gas stoves into induction stoves, which is projected to be 18% in 2050, with a change in a share of LPG usage projected to decrease from 49% in 2017 to 31% in 2050 [1]. Thus, in 2018 and 2019 PT PLN (Persero) followed up through discount promotions of increased power limit to encourage households to switch the gas stove to induction stove with a minimum impact. Thus, there is a need to assess how to strengthen the marketing capability of PT PLN (Persero) to win customer preferences and obtain their willingness to switch from LPG stoves to induction stoves? How is product acceptance of the induction stove? How strong is customer willingness to switch to Induction stoves? How is the business ecosystem to support induction stoves to become more popular?

2. LITERATURE REVIEW

Based on theoretical research, consumer microeconomic theory explains the transition of household fuels in developing countries in which the finding that household fuel use is initially explained by the concept of an "energy ladder" largely boils down to the effects of traditional income in consumer economic models [3]. Furthermore, enriched by generalized logic model for clean fuel scale-up, which have six key areas, including: beyond income (interrelated social-economic), upward transition brought, sustained use of modern clean fuels, imperfect markets the fuel - in rural households, easy access to modern energy sources, policies to emphasis on supply-driven factors [4].

Implementation of clean cooking in Indonesia shows success of Indonesia's "Zero Kero" Program, the program to switch fuel cooking from Kerosene to LPG that reached 72,38% and Electricity only 0,85% in 2016 [5]. Furthermore, it is necessary to predict the use of electric fuel in 2050 based on government targets and proxy data based on the benchmark implementation of the induction cooker program in Ecuador [6] and Africa [7].

This study conducts Industry Environment Analysis by using Five Porter's Analysis [8] to know how competitive PT PLN (Persero) is in this industry. This research area focuses on cross-functional marketing capability that is defined as Customer Relationship Management, New Product Development, Brand Management [9] to know which capability is needed to strengthen the induction stove program for the company and how to realize it. Furthermore, this study also analyzes the penetrated market and customer profiling [10].

3. RESEARCH METHODOLOGY

This study applies the descriptive-analytic method by analyzing primary, secondary and proxy data as an input to analyze the implementation of clean cooking, industry environment analysis and internal environment analysis. Furthermore, the output of the analysis should show the root cause problem and business solution through strengthening marketing capability and building the business ecosystem.

Primary Data were taken from surveys and interviews with potential existing customers and expertise. The survey is taken on April 2020, with around 131 respondents from an existing customer database of the household segment with criteria as Man/Woman, 24 - 55 years old, electricity capacity above at least 1300 VA, Landed Residentials and Non-landed Residentials in DKI Jakarta, Banten, West Java, Central Java, East Java, DI Yogyakarta, Bali, and Outside Java and Bali. Furthermore, expert interviews were conducted with the General Manager PT PLN (Persero) Research and Development and General Manager of PT PLN (Persero) Banten Main Distribution Unit.

Secondary data were taken from internal PT PLN (Persero) and external parties, including data from the government, governmental institutions, universities, property company/association, and producers of induction stoves. Additionally, proxy data were needed for assumptions in calculating forecasting business potential and market definition.

4. RESULTS

4.1. Implementation of Clean Cooking in Indonesia and Benchmarks

Based on the clean cooking trend, consumers' switch from one fuel to another is strongly influenced by income, availability, cost/additional cost of fuel, convenience, compatibility, government regulation, incentives, and others. In Indonesia, without a stimulus, the usage of clean cooking-induction stoves could only increase slightly every year. The trend of fuel cooking from 2014 - 2016 could illustrate the success of Indonesia "Zero Kero" Program, the program to switch fuel cooking from Kerosene to LPG which increased about 6.9% in a year and decreased about 6.92% for other fuel (Kerosene, Bricket woods, etc.), with only an average of 0.02% increase for electricity.

Furthermore, from a benchmark of the implementation of induction stove in Ecuador, participants in the registration program must register through the online system, household purchases cost 500 USD with an installation plan of up to 48 months, interest of 5.5%, are billed on electricity bills and

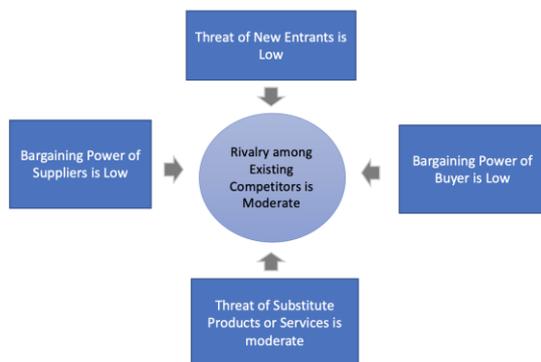
receive 80 kWh / month of free electricity for cooking (not billed up 80 kWh / month above average monthly consumption) [6]. Nevertheless, this program did not reach the target because costs and access limited household decisions around cooking fuels. Clean cooking programs should recognize non-cooking factors (e.g., compatibility, heating) as well as consistent access to fuel, in addition to fuel cost, as significant barriers to exclusive use of clean cooking fuels. In addition, the need for the purpose of each fuel option for cooking, especially for LPG subsidies which are still easily accessible to all segments, also contributes to the unfulfilled target of the induction stove adoption program in Ecuador. [6].

Meanwhile, Africa implements a solution for clean cooking and electrification needs [7]. Thus, there is an opportunity for future technology advancement so that induction stoves could be the most viable option for affordable fuel cooking. In the next five years the cost of cooking with such a system will be of the same order as cooking with conventional fuels because battery-supported eCook can also strengthen national, mini, micro and nano grids. One of the lessons learned from the implementation in Africa is that there is an opportunity for future technology advance that induction stoves could be the most viable option for affordable fuel cooking like PV Rooftop [7].

4.2. Industry Environment Analysis - Porter's Five Forces Analysis

The aim of using Porter's Five Forces Analysis is to know a complete picture of what is influencing profitability in the industry and identify game-changing trends. An initial assessment concludes that competition in this industry is high, but with high potential to be more profitable in the long term.

This study found that the bargaining power of buyers is low because of regulated tariff and little



Source: Author analysis

Figure 1 Porter's Five Forces Analysis in the Competition of Fuel for Clean Cooking

options. The bargaining power of suppliers is low because of many suppliers. The threat of new entrants is low because regulated tariff makes this industry less desirable. The threat of substitutes is moderate because of the government support for their growth. Rivalry among the existing industry is at a moderate level because the growth of competitors in the future would make this industry more competitive.

4.3. Insights from Expert Interviews and Survey Results

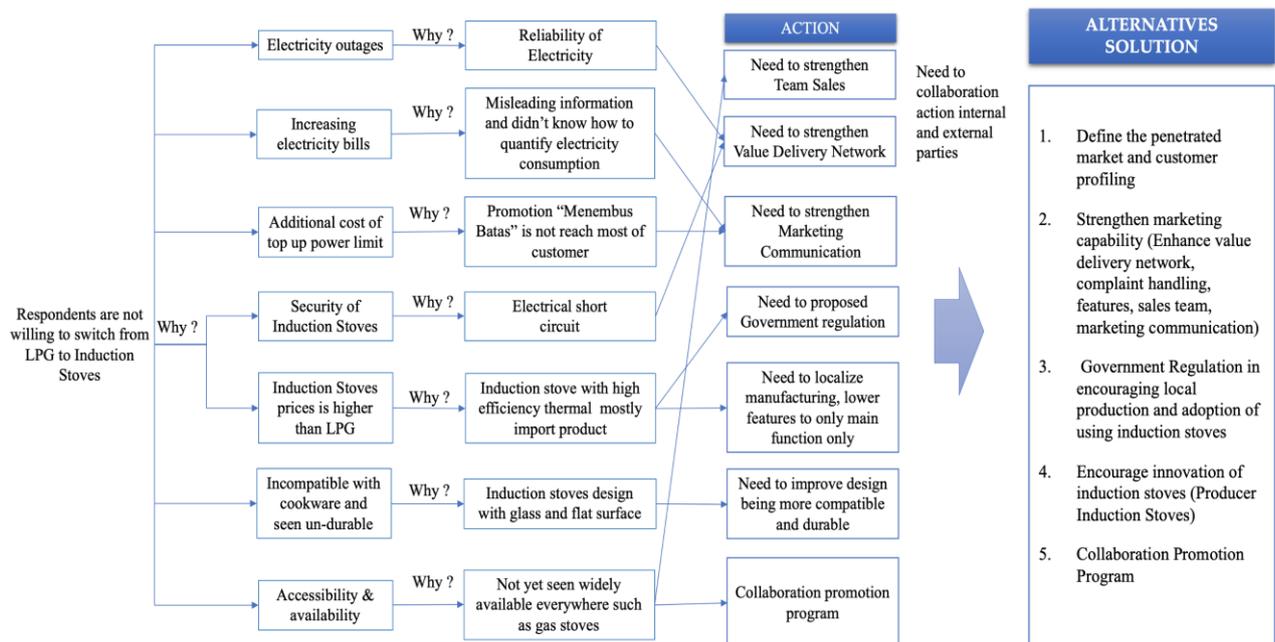
Insights obtained from the Expert Interviews are as follows:

- Induction stove is “a piece of cake” for increasing electricity sales of PT PLN (Persero), but it is fundamental for an electrifying lifestyle program that will be the future of business, besides electric vehicles, PV Rooftop, and battery storage.
- Socialization about the ways and benefits of using induction stoves are required.
- Outages due to the maintenance of the electricity network usually takes 6-8 hours. It needs to be improved in the implementation so that it can take only 4 hours.
- Government intervention is needed in realizing the scale-up of using an induction stove. In addition to the issue of the purchase price of an induction stove, customers do not feel the urgency to switch, with the various reasons mentioned above. As long as it is still an introduction and popularization program, using the induction stove will not be the choice of the main customers
- Collaboration with induction stove producers is needed to market the induction stove on a massive scale. The collaboration includes innovating in accommodating equipment that is not yet compatible with the current Induction stove and reducing the price.
- It is necessary to prepare and propose Indonesia National Standards (Standar Nasional Indonesia - SNI) criteria as a condition for the distribution of induction stove products in Indonesia. This can reduce the effect of Total Harmonic Distortion (THD) arising from the use of an induction stove.
- There is a need to involve a subsidiary company as the sales team of the induction stove program because the existing sales team members are not enough.

This study conducted a survey to find out the knowledge and preferences of customers to choose and use an electric stove, and experts interviews to find some insight about other factors that should be prepared to popularize induction stove, be a preferable choice. The results of the survey as shown in Table 1.

Table 1. Survey Results

SURVEY RESULTS	
Respondents information	Most of respondents are Female (62.6%), 24-50 years old (50.4%), resident in Banten (31.3%) and DKI Jakarta (22.9%), and have electricity with power limit 1,300 - 4,400 VA (97.7%).
Usage of Cooking Information	Most of respondent cooking every day (90.8%), using LPG stove (78.5%), with duration of cooking about 1 – 2 hours/day (61.8%), cooking at non-peak time (55.7%) and have fuel costs for cooking about 30,000-150,000 IDR per month (55%).
Reason to Determine the Choice of Stove (> 1 choice)	Most respondents are determining the choice of the stove because of Easy and practical, (73.3%), Price/cost (64.1%) and Security (47.3%). Otherwise, Respondents are not willing to buy mostly because of the Electricity bill is soaring (63.5%), and should replace existing cookware (45.2%).
Willingness to Buy Induction Stove	Most of respondents are willing to buy an induction stove in the future (63.35%), with reason Eco-friendly (58.6%) and Easy & practical (59.5%). Otherwise, respondents are not willing to buy mostly because of the Electricity bill is soaring (63.5%), and should replace existing cookware (45.2%).
Awareness Toward Induction Stove	Most of respondents are aware of Induction Stove (94.4%). Most of them know from print/electronic media (54.3%), social media (37.8%) PLN Promotion (27.6%), Family/friends (24.4%), and Offering from producers/distributors (18.9%).
Acceptance Price/Cost of Induction Stove	The highest price will be accepted at 150,000 to 500,000 IDR (50.4%), and 53,4% respondents are willing to pay in installment in 12 months (44.6%), 3 months (32.5%) 6 months (22.9%) with mostly amount 100,000 IDR per month. And the highest cost of fuel of stove will be accepted at 20,000 IDR (29%), 50,000 IDR (31.3%), 100,000 IDR (29.8%), 250,000 IDR (15.7%) and 500,000 IDR (1.5%).
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Source: Author analysis

Figure 2 Barriers in Switching Induction Stove

4.4. Root Problem

The root problem findings as shown in Figure 2.

This study found that most of the respondents are interested in buying an induction stove, but there are some barriers to switching from LPG stoves to induction stoves, such as electricity outage, increasing

Table 2. Calculating Business Potential

Schemes	First Years - 2021				2050				Prosentase to Revenue 2019
	User (%)	Households	Electricity Consumption (MWh)	Revenue (Million IDR)	User (%)	Households	Electricity Consumption (MWh)	Revenue (Million IDR)	
Baseline	0.031	22,911	21,994	32,265	2	1,407,714	1,351,405	1,982,512	6.155%
Approache 1	0.279	206,195	197,947	290,388	18	12,669,425	12,162,648	17,842,605	6.733%
Approache 2	0.279	206,195	197,947	290,388	18	12,669,425	13,302,896	19,515,349	6.444%

electricity bills, an additional cost of top-up power limit. To overcome this problem, there needs to be cooperation with internal and external parties in carrying out the stages of the switching process by stimulating customer desires and addressing the aforementioned obstacles.

4.5. Business Potential

Table 2 shows calculation of the business potential of induction stove. Assumption and calculating:

- a. Households in 2021 based on data in 2019 multiplied with 1.011 (if the ratio of electrification reaches 100%, delta from 2019 is 100% minus 98.89%) and multiply again with 1.05 (predicted increase of customers from 2019 to 2020);
- b. Electricity Consumption divided into :
 Assumption 1, based on the assumption that every household needs 80 kWh per month (based on Ecuador’s policy to give a subsidy of 80 kWh for every household), and multiply with 12 months;
 Assumption 2, every household need 87.5 kWh per month (from survey findings that average households cook for 1-2 hours/day) multiply with 1 kWh (1000 Watt for two stoves) and multiply with 1,5

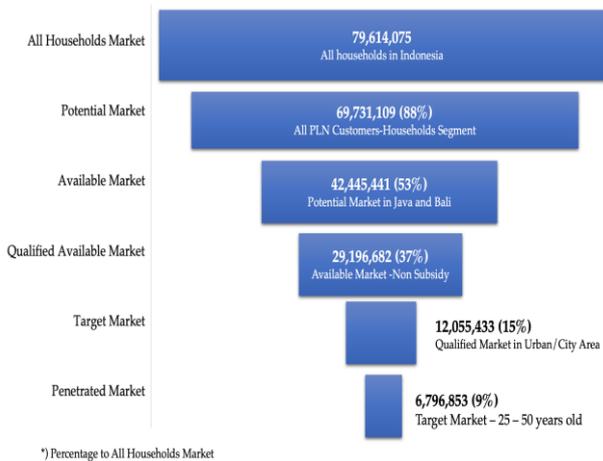
- (Assumption for two stoves utilizing, from assumption one of stoves only 50%). And then to get annual energy consumption then multiply with 350 days (15 days not cooking);
- c. Revenue-based on assumption electricity tariff in 1,467 IDR (flat).
- d. Annual increase of Users, Electricity Consumptions, Revenue calculation for other factors is zero increasing.

The business potential from the increase in the use of the induction stove is relatively small for the initial years, so PT PLN (Persero) needs to be careful in defining the program to ensure that it will provide a positive return for the company. However, it is very promising if the company could reach 18% switching users from LPG to induction stoves, that could get 6.4% additional.

4.6. Market Penetrated and Customer Profiling

Market definition is needed to focus the program on the penetrated market (Figure 3). Assumption and calculating:

- a. Total Population: All households in Indonesia in 2020 are 75,822,929 [11], then proxy data to define the number of households in 2021 by multiplying 1.05 (5% estimated increasing). (22.9%), and have electricity with power limit 1,300 - 4,400 VA (97.7%).
- b. Potential Market: 2021 comes from all existing households in Indonesia, i.e. about 70,385,696, which were from proxy data ratio electrification in 2019 (98.89%) multiply with customer for household segment (69,619,877 customers) minus existing users of induction/electric stove [12].
- c. Available Market: Potential Market in Java and Bali that have high reserve margin and [12] better quality in electricity supply, especially SAIDI and SAIFI.
- d. Qualified Market: Available Market but without Customers that get tariff subsidy. Proxy data is from 100% minus a percentage of subsidy customers to the available market, about 69% [13].
- e. Target Market: Qualified Market who is in range age of 25 to 50 years old, about 41% [14].



Source: Author analysis

Figure 3 Market Definition of Induction Stove Program

Table 3. Customer Profiling

Geography	Demography	Psychographic
Java Bali, Urban/City Area like DKI Jakarta, Bogor, Depok, Great Tangerang, Bekasi and Bandung	Man/Woman, age between 25 – 50 years old, middle and middle up income, new marriage couple	Family-oriented

source: author analysis

- f. Penetrated Market: Target Market that is living in Urban/City area, about 56.38% [15].

The market definition begins with the total population and progressively narrows, that refer to a group of consumers or organizations who are interested in a product, have the resources to purchase the product and are permitted by law and other regulations to acquire the product.

Meanwhile, customer profiling is needed to help to define a more specific penetrated market that could be used to strengthen marketing capabilities, as shown in Table 3.

4.7. Internal Environment Analysis - Marketing Capability Analysis

This research focuses on Customer Relationship Management, New Product Development, Brand Management. When talking about the induction stove, customers will immediately associate it with electricity as fuel. Thus, analysis about the induction stove will explore more about electricity first, like accessible, price, reliability, and others.

4.7.1. Customer Relation Management

This study found that:

- 1) Customer perceived value: They feel that electricity is expensive. They are very price sensitive about electricity costs.
- 2) Customer satisfaction for the household segment is 88.42% in 2018.
- 3) Value Delivery Network needs to manage sub-contract & partners.
- 4) Customer loyalty index is 90.29%.
- 5) Complaint Handling services are running for 24 hours every day and supported by huge technicians in all over Indonesia through Call Center 123 and PLN Media Social.

4.7.2. New Product Development

This study found that:

- 1) Features that provide prepaid-postpaid electricity bill system, low-medium-high voltage, and regular-premium electricity supply.
- 2) Pricing is competitive compared to other ASEAN countries. In the household segment, only Malaysian tariffs are cheaper than Indonesia.
- 3) The product is regulated by the government, with standard through 13 Quality Service Levels, and 6 of 13 have 20-35% penalty from electricity bills
- 4) The sales team is not enough to support another new task. Therefore a new effective structure is needed to execute a new business model for an electrifying lifestyle.
- 5) Selling is still good with little increase in 2019.

4.7.3. Brand Management

Marketing communication is not only used to attract new customers, but also to communicate with customers about services. Because electricity is an intangible product, customers could only feel it when electricity is interrupted or unstable voltage. It needs hard work to keep it always on 24 hours every day, and customers must know about that effort. Thus, a few years later, PT PLN (Persero) was mindful of the importance of communication to customers through social media.

Internal competitiveness regarding the marketing capability of PT PLN (Persero) is above average for now because of a majority market share and strong fundamental services, with high reserve margin and an electrification ratio of about 98,89%. However, it must be maintained due to new technologies such as PV rooftop, battery storage and smart home living which could be a great opportunity for the company.

5. DISCUSSION

On the other hand, LPG substitution as part of clean cooking is highly attractive, which could bring long-term profit and benefit to the company that could win market share. The market is big, so every substitution option could take in part to reach effectiveness and efficiency for Indonesian people. Moreover, it is necessary to strengthen the positioning of induction stoves in consider up-coming technology that is relevant to it, like PV rooftop, battery storage, and smart home appliances.

5.1. Strengthening Marketing Capability

Strengthening marketing capability is needed to convince customers about the affordable price and reliability of electricity, as well as the affordability and convenience in using induction stoves, which is also a mandatory solution for PT PLN (Persero). They can collaborate with other alternatives to convince the program is effective in tackling business problems.

- 1) Value Delivery Network: Managing subcontractors is a vital part of delivering the same value to the customer and need to mapping penetrated markets who live in a mainline zone or maximum in zone two, that have an excellent reliable system with defence mechanism system.
- 2) Complaint Handling: Improving customer experience in each activity to prevent customers from getting pain experience, the company could provide a pop-up system to specific customers to confirm the bills and could be one of the features of PLN Mobile application.
- 3) Features: Propose a new scheme of electricity packaging promotion, propose induction stoves that are compatible with a frying pan by designing a concave surface, enhance the durability of the stove by change material with a durable surface, easier experience in using stove by convert setting button to the manual that similar with LPG stove.
- 4) Sales Team: The existing sales team needs new competencies and also needs to collaborate with others.
- 5) Marketing Communication: Rebuild the positioning statement for the induction stove program, to direct all other marketing capability factors, as shown in Table 4 and Table 5.

By defining the Level of I-Stove Promo Program, it could strengthen marketing communication. The previous program gave 75% discount to increase the

power limit of electricity, otherwise, this study proposed only 50% discount of Top-up power limit, and the othe 25% is switching to monthly electricity bills discount or similar amount free prepaid. Therefore, by the similar amount with previous ones, PT PLN (Persero) can attract customers to experience induction stoves for two months because the challenge is how to make sure that customers are really using the induction stoves.

5.2. Building Business Ecosystem

This research aims to multiply the number of customers who switch to induction stoves, so it is necessary to know the business ecosystem of the induction stoves, as follows:

First, lobbying is needed to convince the government to support the program. The Ministry of Mineral and Resources needs to formulate Regulation in limitation of LPG Subsidy. The Ministry of Finance needs to allocate half of reducing LPG subsidies which can be converted into induction stoves for people who have difficulty in getting the distribution of LPG. The Ministry of Industry needs to localize induction stove manufacture to reduce the price. BSN needs to standardize induction with Indonesian National Standards (SNI), to guarantee safety. The Municipal Government needs to encourage people to use induction stoves.

Second, it is necessary to encourage innovation of

Table 4. Positioning Statement of Program Popularize Induction Stove

Target Market	Brand	Frame of Reference	Point of Differentiation	Competitive Edge
For urban customers with family-oriented	I-stoves Promo by PLN	Electricity discount to provide modern cooking style like serving food from mastery to your family at home	Electricity discount that offers experience healthier, safety and cleaner cooking style	Brings you to be part of the green future electrifying lifestyle
The full positioning statement is <i>"I-stove Promo by PLN as Electricity discount to provide modern cooking style like serving food from mastery to your family at home for urban customers with family-oriented, I-stove Promo by PLN is Electricity discount that offers experience healthier, safety and cleaner cooking style because I-stove Promo by PLN brings you to be part of the green future electrifying lifestyle"</i> .				
Advertising Tagline: <i>"Great Cooking, Great Family"</i> . (in bahasa could be changed to be: <i>"Memasak yang luar biasa untuk Keluarga Hebat"</i>)				

Table 5 Level of I-stove Promo Program

Customer Types	I-stove Lite	I-stove Lite Plus	I-stove Max
	Increase power limit 1 Level	Increase power limit 2 Level	Increase power limit minimum 3 Level
B2C	<ul style="list-style-type: none"> ▪ Discount 50% of Top-up Power Limit ▪ Discount electricity bills 50% of increasing bills from average 3 months, for 2 months (with max discount or free prepaid 100,000 IDR per month) 	<ul style="list-style-type: none"> ▪ Discount 50% of Top-up Power Limit ▪ Discount electricity bills 50% of increasing bills from average 3 months, for 2 months (with max discount or free prepaid 200,000 IDR per month) 	<ul style="list-style-type: none"> ▪ Discount 50% of Top-up Power Limit ▪ Discount electricity bills 50% of increasing bills from average 3 months, for 2 months (with max discount or free prepaid 300,000 IDR per month)
B2B	I-stove Prime For Developer of landed-house get discount 25% of new electricity connection cost, with minimum 100 houses for maximum 5500 VA each		
Add On Packaging : Stroomnet (TV Cable and Internet), Battery Storage or PV Rooftop			

induction stoves (by induction stove producers). This is done by focusing on how to innovate the design of induction stoves to be more compatible and durable. Thus, a new market segment is needed that is not too low or high, so the price could be more affordable.

Third, Collaboration Promotion Programs are needed to increase more opportunities and accessibility. PT PLN (Persero) needs partners to get customers as target market, get appeal, and are willing to switch to Induction Cookers. PT PJB Services which provides PV Rooftop products and services, or others, can be dismantled. Real estate associations are very important for companies in providing induction hobs as an optional bonus in addition to Television or Air Conditioner, distributors of induction cookers through manufacturers can more intensively offer induction cookers to customers, especially first time entrants. buy a stove. Marketplace, supermarket and store are also the same as the distribution of induction cookers. The difference is that they offer multiple brands and products. Leasing companies also provide installments to customers who are going to buy an induction cooker. Communities, Endorsers, Influencers and Media are very important channels to build good opinion and image and educate customers in using induction stoves, especially customers who spend their days online on social or electronic media. Induction hobs can be imagined as one of the preferred gifts for weddings, birthdays, etc.

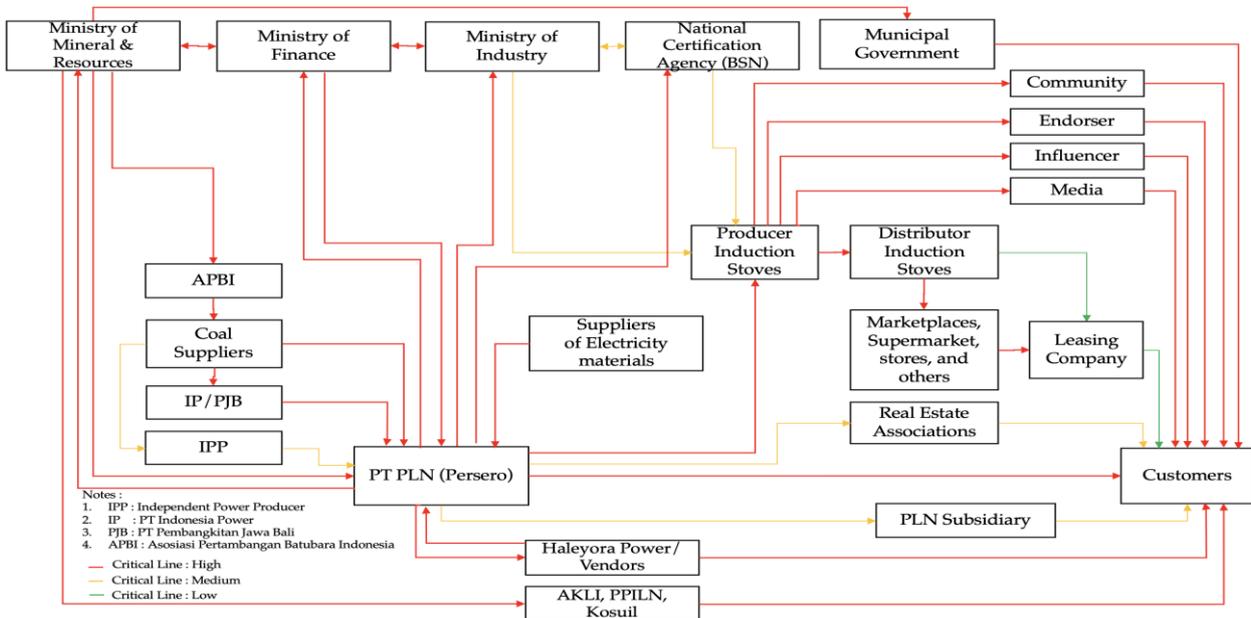
Moreover, PT PLN (Persero) could focus more on maintaining electricity and services. In promoting the use of induction stoves, it needs to realize the customers' first impression and feeling of the message. Because PT PLN (Persero) is strongly related to electricity, when it

offers induction stoves, the customers refer to the increasing electricity sales as a target of PLN. Therefore, promotion should be done by external parties, in particular, the producers and distributors of induction stoves.

6. CONCLUSION

The conclusions of the study found that customer preferences in using the induction stove need a durability and compatibility stove with cookware and cooking style. The customers are interested (from data of willingness to buy about 63,36%) but only 15,7% of them are willing to switch. Given the potential for the induction stove business for PT PLN (Persero) to increase by around 6.44% in 2050, it is necessary to strengthen the marketing capabilities of PT PLN (Persero) through value delivery networks, complaint handling, features, sales teams and marketing communications.

Furthermore, the need to focus on penetrating markets and selecting the right customer profiling is emphasized in achieving targets. The business ecosystem that is essential to realizing induction stoves as the preferred choice consists of the supply chain of PT PLN (Persero), the government, producers and distributors of induction stoves, and the promotion of cooperation. Regulations are needed to convince them to support the need for regulations or incentives in encouraging domestic production induction stoves, restrictions on LPG subsidies as soon as possible, localization of induction cooker manufacturing, SNI standards to ensure safety, and City Government regulations in encouraging local people to use stoves.



Source: Author analysis

Figure 4 Business Eco-system of Induction Stove

induction. Encouraging induction stove innovation (Producer Induction Stove) by providing information about market intelligence or other surveys that become a reference for a manufacturer in designing new products, especially to reduce the price of induction stoves. The Collaboration Promotion Program aims to coordinate and build bonds between companies and collaborative partners by proposing several benefits to them, so that mutually beneficial coordination is established.

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REFERENCES

- [1] Badan Pengkajian dan Penerapan Teknologi. Outlook Energi Indonesia 2019. Dampak Peningkatan Pemanfaatan Energi Baru Terbarukan Terhadap Perekonomian Nasional. 2019.
- [2] Dewan Energi Nasional. Outlook Energi Indonesia 2019.
- [3] C. Muller and H. Yan, Household Fuel Use in Developing Countries: Review of Theory and Evidence, halshs-01290714, 2016. <https://halshs.archives-ouvertes.fr/halshs-01290714>
- [4] AK. Quinn et al, An analysis of efforts to scale up clean household energy for cooking around the world. Energy for Sustainable Development, vol. 46, pp. 1-10, 2018. <https://doi.org/10.1016/j.esd.2018.06.011>
- [5] Badan Pusat Statistik. (2017). Persentase Rumah Tangga Menurut Provinsi dan Bahan Bakar Utama untuk Memasak Tahun 2001, 2007-2016. Available from: <https://www.bps.go.id/>
- [6] C. F. Gould et al., Government policy, clean fuel access, and persistent fuel stacking in Ecuador, Energy Sustain Development, 2018. <https://doi.org/10.1016/j.esd.2018.05.009>
- [7] S. Batchelor, E. Brown, J. Leary, N. Scott, A. Alsop, and M. Leach M., "Solar electric cooking in Africa: Where will the transition happen first?," Energy Research & Social Science, Vol. 40, pp. 257-272, June 2018. <https://doi.org/10.1016/j.erss.2018.01.019>
- [8] M. E. Porter, "The Five Competitive Forces That Shape Strategy," Special Issue on HBS Centennial. *Harvard Business Review* 86, no. 1, pp. 78–93, January 2008.
- [9] N. A. Morgan, "Marketing and Business Performance," *Journal of the Academy of Marketing Science*, vol. 40, pp. 102–119, 2012. <https://doi.org/10.1007/s11747-011-0279-9>
- [10] P. Kotler and G. Armstrong, Principles of Marketing – 14th Edition. New Jersey. Pearson Prentice Hall, 2012.
- [11] PT Kementerian PPN-Bappenas. (2019). Rencana Pembangunan Jangka Menengah Nasional 2020-2024. <https://www.bappenas.go.id/files/rpjmn/>
- [12] PLN (Persero). Annual Report 2019.
- [13] Tim Nasional Percepatan Penanggulangan Kemiskinan. (2018). Jumlah Rumah Tangga dan Individu menurut Provinsi dan Status Kesejahteraan di Indonesia. <http://bdt.tnp2k.go.id/sebaran/>.
- [14] Badan Pusat Statistik. (2017). Rata-rata Banyaknya Anggota Rumah Tangga menurut Provinsi, 2000-2015. Usia (<https://www.bps.go.id/>)
- [15] Jumlah Penduduk Indonesia, Kota dan Persentase Penduduk Kota terhadap Jumlah Penduduk Indonesia 2015-2025, Worldometer, 2019
- [16] F. Chris and J. Barbara, Marketing Communication, Edinburgh: Edinburgh Business School Heriot-Watt university, 2006.
- [17] A. Enders, A. König, H. Hungenberg, and T. Engelbertz, "Towards an integrated perspective of strategy: The value-process framework", *Journal of Strategy and Management*, Vol. 2, no. 1, pp. 76 – 96, 2009. <http://dx.doi.org/10.1108/17554250910948712>
- [18] J. J. Lewis and S. K. Pattanayak, "Who adopts improved fuels and cookstove? A systematic review," *Environmental health perspectives*, vol. 120, no. 5, pp. 637–645, 2012. <https://doi.org/10.1289/ehp.1104194>
- [19] W. C. McGaghie, G. Bordage, and J. A. Shea, "Problem statement, conceptual framework, and research question," *Academic Medicine*, vol. 76, no. 9, pp. 923-924, 2001. <https://doi.org/10.1097/00001888-200109000-00021>
- [20] A. Rafay and A. Khan, "Shift from Next Generation Networks (NGNs) for sustainability," *Journal of Cases on Information Technology*, vol. 18, no. 3, pp. 1-19, 2016.