Eduvest – Journal of Universal Studies
Volume 5 Number 7, July, 2026
p- ISSN 2775-3735- e-ISSN 2775-3727

Indonesian Society Perception in Intervention of Solar Panel Incentives

Nurmasitya Kemalaintan*, Zulfahmi Noor, Muhammad Noor Arridho
Politeknik Sinar Mas Berau Coal, Indonesia
Email: nurmasitya@polteksimasberau.ac.id*, zulfahmi@polteksimasberau.ac.id, arridho@polteksimasberau.ac.id

Keywords:
Interview, Solar Panel Incentives, Perception, Strategic Option Development and Analysis

ABSTRACT

The use of residential solar panels is gradually being intensified by the government. Policies to support residential solar panel adoption are also being developed. In relation to policy implementation in Indonesia, field conditions need to be properly understood to ensure effective policy performance. This study, *Indonesian Society Perception in Intervention of Solar Panel Incentives*, examines the views of Indonesian society regarding solar panel incentives and their role in the decision to adopt solar panels. The aim is to identify incentives that are most suitable for implementation in Indonesia. Incentives identified based on the literature review include Feed-in Tariff, Net Metering, R&D Investment, Green Certification, and Education & Awareness Programs. This study uses the SODA (Strategic Options Development and Analysis) approach. Data collection was conducted through structured interviews. Interviews were carried out with households using solar panels as their main source of electricity to meet energy needs in the Yogyakarta area, as well as potential adopters who are part of an energy community. This community expressed both positive and negative perceptions of each incentive. The results indicate a positive perception of Feed-in Tariff, Net Metering, and Education & Awareness Programs, as these three incentives are considered more feasible and applicable within the current Indonesian context. Meanwhile, R&D Investment and Green Certification are perceived negatively, as they are considered costly and less directly beneficial for immediate adoption. Based on these findings, the most suitable incentive for Indonesian society is the Education & Awareness Program.

INTRODUCTION

Climate change and rising greenhouse gas emissions are pushing the world to accelerate the energy transition toward cleaner energy sources. Global frameworks such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement emphasize the rapid reduction of carbon emissions, aiming to limit peak warming and support long-term low-emission development pathways (Apriandi Zuhir et al., 2017). In this context, solar energy particularly rooftop photovoltaic (PV) systems in households—is considered a relatively accessible solution, as it can be installed close to points of consumption, thereby reducing transmission losses and dependence on fossil fuel–based power plants, while also contributing to emissions reduction in the energy sector (Agustar & Prawiraatmadja, 2024).

In Indonesia, the energy transition issue is not only related to global commitments but also to structural challenges within the domestic energy system. The implementation of the Paris Agreement is reflected in Law No. 16 of 2016, while the national energy policy targets a renewable energy share of at least 23% by 2025 and 31% by 2050 (Apriandi Zuhir et al., 2017). However, the current electricity generation mix remains heavily dominated by coal; in 2022, its share reached 67.21%, highlighting the strong dependence on fossil fuels. This dependence can be attributed to cost considerations, established infrastructure, and limited policy enforcement at the implementation level, causing the energy transition to progress more slowly than planned targets.

Previous research has shown that various countries have implemented incentives to encourage the adoption of solar energy with varying degrees of success. Vietnam, for example, was able to accelerate the diffusion of PV through a combination of import fee exemption, income tax exemption in the early phase, gradual reduction, and land lease exemption (Do et al., 2020). On the other hand, research in the UK shows that a careful reduction in feed-in tariffs has an impact on the sustainability of photovoltaic generation in the household sector (Castaneda et al., 2020). Studies in China reveal that the design and implementation of appropriate incentive policies greatly influences the effectiveness of small-scale solar panel adoption (Rigter & Vidican, 2010). Meanwhile, research in Indonesia is still limited to potential analysis and general policies (Afif & Martin, 2022; Nugraha, 2020), with gaps in the in-depth understanding of public perceptions of the various incentive schemes available.

In fact, Indonesia possesses significant natural resources for solar energy development. Located in the tropical equatorial region, the country receives an average solar irradiation of approximately 4.8 kWh/m² per day, with relatively small variation between western and eastern regions (Afif & Martin, 2022). In addition, estimates from the Institute for Essential Services Reform (IESR) indicate a very large solar photovoltaic potential (reaching thousands of GWp), underscoring the opportunity for solar energy to contribute substantially to the national energy mix.

With this potential, rooftop photovoltaic systems can serve as a bridge for the energy transition, as they enable households to participate directly by reducing electricity costs, increasing energy independence, and, at a broader scale, easing pressure on a fossil fuel–dominated power system. However, a key challenge emerges when this large potential does not translate into proportional adoption. The targeted installed solar capacity for 2025 is set at 1,047 MW, yet actual deployment continues to lag behind. Moreover, the growth of installations remains limited, with indications of declining demand and instances of underperforming or non-operational solar PV systems (Perdana, 2023).

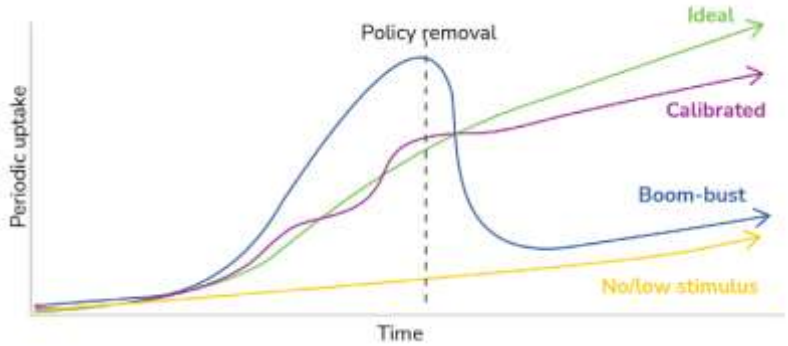


Figure 1. Implications of Policy Implementation
Source: Bagaskara et al., (2023)

Development strategies are still largely directed toward stand-alone photovoltaic (PV) systems for remote communities and rooftop installations for office buildings (Nugraha, 2020), while significant household-side barriers remain, particularly in financing (Ridwan, 2020). In other words, the issue is not merely that "the technology is available," but rather what kinds of policies and incentives are genuinely beneficial and perceived as feasible by potential users.

The impact of these barriers can be observed in signs of adoption stagnation despite various incentive interventions that have been implemented. The government has introduced incentives in the form of financial interventions (e.g., tax exemptions, import duty exemptions, subsidies for green investments, and soft loans), and in 2022 a voucher-based and limited quota scheme was introduced (EBTKE, 2023), managed through BPDLH and restricted by customer eligibility and rooftop capacity. However, the extent of financial interventions has been reported to correlate with stagnation in solar panel adoption (Halimatussadiah et al., 2023).

A comparison with Vietnam confirms that incentive effectiveness is not solely determined by their existence, but also by their design and implementation. Vietnam has successfully accelerated PV diffusion through a combination of import duty exemptions, income tax exemptions in the initial phase, gradual policy tapering, and land lease exemptions (Do et al., 2020). This indicates that without targeted and socially accepted incentive design, programs may exist formally but fail to stimulate meaningful market uptake. From this context, the study focuses on two main variables: solar panel incentives and household solar adoption decisions. The types of incentives analyzed in this study are derived from a literature review, namely feed-in tariffs, net metering, R&D investment, green certificates, and education and awareness programs.

Conceptually, incentives are defined as policy interventions aimed at reducing adoption barriers (e.g., cost, risk, and uncertainty) while enhancing the attractiveness of renewable energy adoption. Meanwhile, adoption decisions are understood as household-level processes of evaluating feasibility (cost-benefit considerations), operational convenience, policy risks, and perceived environmental value in deciding whether to install solar panels. This study also distinguishes between adopters and potential adopters to capture differences between lived experience and prospective perception. The novelty of this research lies in the application of the SODA (Strategic Options Development and Analysis) approach to map public perceptions and considerations in a more cognitive and strategic manner, rather than merely generating a list of factors. The study also employs coding-based thematic analysis using NVivo to identify perception patterns across different types of incentives.

The urgency of this research stems from Indonesia's position at a critical transition point: energy transition targets require acceleration, while poorly targeted incentive schemes risk creating fiscal burdens, eroding public trust, and prolonging dependence on fossil fuels. This challenge is further highlighted by reports indicating that Indonesia's solar adoption scale remains at an early stage (hundreds of MW), whereas countries such as Vietnam have achieved significantly higher annual installation capacities (Hasjanah, 2022). Therefore, understanding field conditions is essential to ensure that incentive strategies are not only well-designed on paper but also accepted in practice and capable of influencing household adoption decisions.

By focusing on Yogyakarta and directly examining both adopters and potential adopters, this study aims to provide empirical insights that closely reflect implementation realities and may serve as a comparative reference for policy design in other regions.

The purpose of this research is to understand and map the perceptions of households in Yogyakarta regarding various solar panel incentive schemes and how these perceptions relate to household-level adoption decisions. More specifically, the study examines which incentives are considered most relevant, most feasible under current Indonesian conditions, and which are perceived as less appropriate. These objectives align with the need for field-based investigation to design incentive strategies that are socially acceptable and capable of influencing solar adoption decisions. Within the SODA framework, the objective extends beyond identifying preference lists to understanding the underlying reasoning behind perceptions of attractiveness or rejection, thereby enabling the development of more operational policy alternatives.

METHOD

Research design and strategy

This research was conducted as a qualitative study with a descriptive orientation to explore how the public interpreted various solar panel incentive schemes and how these interpretations were related to adoption decisions. The study emphasized the richness of information derived from participants' experiences and perceptions rather than the number of respondents, enabling the identification of patterns in decision-making based on informants' narratives (Chowdhury, 2015).

Location and context of the research

The research was conducted in the context of households in the Yogyakarta region, with the consideration that the main data is needed from the direct experience of solar panel use at the household level as well as the perception of potential users towards the potential incentives to be applied. In the manuscript, it is explained that the interviews were directed to households that use solar panels to meet energy needs in the Yogyakarta area, so this context is considered relevant to read the "field conditions" of the implementation of incentive policies. The scope of the research is focused on the development of solar panel incentives and how to compile considerations for solar panel usage decisions in Indonesia, by placing public perception as the center of analysis. Therefore, the aspects explored in the interview were directed at the informant's view of the existence of incentives, barriers to adoption, as well as incentives that are considered effective to trigger the adoption of solar panels.

Subjects, conceptual populations, and participant criteria

The research subjects were determined based on the classification of information needs, namely the adopter group and potential adopters. The emphasis of this selection is to capture two sides of the adoption process: adopters provide insight into first-hand experience and the influence of incentives on actual decisions, while potential adopters explain the reasons for the barriers and conditions that may encourage them to eventually adopt. The criteria for potential adopters are defined as participants who have a desire to install solar panels and joined in energy comunity, while adopters are participants who have already installed solar panels.

Sample determination techniques and number of informants

The strategy of determining informants follows the needs of representation of public perception and the willingness of participants to be interviewed. Sample size refers to the

principle of data saturation, which is when the interview no longer produces significant new information, so that the number of informants is considered adequate to answer the research needs (Guest et al., 2006; Saunders et al., 2018). In the manuscript, the number of informants was set at 9 people consisting of 4 adopters and 5 potential adopters, with the argument that the topic was specific and had begun to show a pattern of repeated findings. The composition of informants contains a variety of demographic and occupational characteristics (e.g. private, self-employed, academic, state-owned enterprises) so that a variety of perspectives can emerge related to incentives and adoption decisions. This variation helps the research not to be stuck on one point of view, but to remain in control of the depth of the data because the amount is adjusted to the logic of data saturation.

Research stages (field workflow to strategy output)

The series of research strategies was prepared in stages starting from: (a) a review of the literature to map the development of solar panels and various renewable energy incentives, (b) determination of the type of incentives to be explored, (c) the design of interview protocols so that the data collection process is focused, natural, and ethical, and (d) the implementation of interviews to perception mapping which is then processed into input into incentive strategies.

Research instruments and interview protocols

The main instrument of the study is the closed-door interview guidelines/protocols designed to keep the flow of discussion focused on the topic of incentives and adoption decisions, while still providing space for informants to explain their experiences and reasons naturally. The protocol includes participant criteria, discussion topics, list of questions, and matters related to interview ethics; Preliminary interviews are also used to ensure the classification of informants (potential adopters or adopters).

RESULTS AND DISCUSSION

Study profile and overview of the results presented

This part of the results presents key findings from the community interview process regarding the influence of different types of incentives on the solar panel adoption decision-making process, which is then categorized using NVivo 12 through coding and grouping of nodes per type of incentive. The output of the results is displayed in the form of a project map and a hierarchy diagram to illustrate the differences and similarities of views between the adopter and potential adopter groups on each incentive.

Specifically, the results will contain: (a) profiles of data and participants (numbers, basic characteristics), (b) an overview of the variables/studies studied (five types of incentives), (c) a summary of the categorization process (nodes and their variations), (d) findings per type of incentive—Feed-in Tariff, R&D Investment, Net Metering, Green Certification, and Education Program—based on informant citations and cognitive maps, and (e) a synthesis of cross-incentive patterns that answer the research focus on which incentives are perceived most relevant/effective in driving adoption decisions.

Number of data, participants, and informant profiles

The research data was sourced from interviews with 9 informants consisting of 4 adopters and 5 potential adopters. This amount is considered sufficient to achieve data saturation because the topic is specific and the pattern of findings begins to repeat so that the variation in information no longer increases significantly.

The basic profiles of informants (initials, gender, age, occupation) are shown in the following table as an overview of the participants' social context that is the basis for reading the perception of incentives and solar panel adoption decisions.

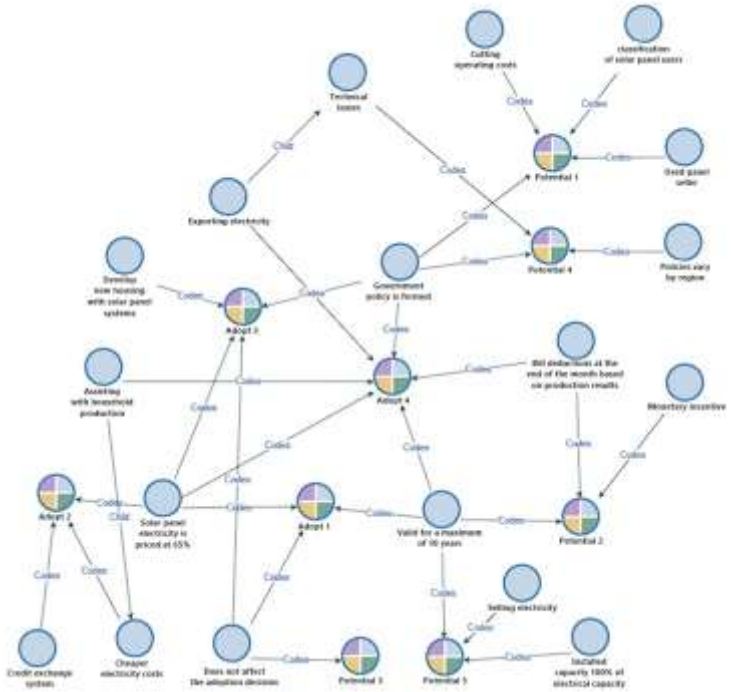
Table 1. Research Informant Data

No	Inisial	Gender	Years	Job
1	DD	Male	29	Private
2	HD	Male	45	Private
3	RPM	Male	55	Past Daily
4	KHJ	Male	53	Private
5	WAP	Male	29	Self-employed
6	SGM	Male	26	Academy
7	DHD	Women	27	Academy
8	HBB	Male	30	BUMN
9	EFM	Male	30	Self-employed

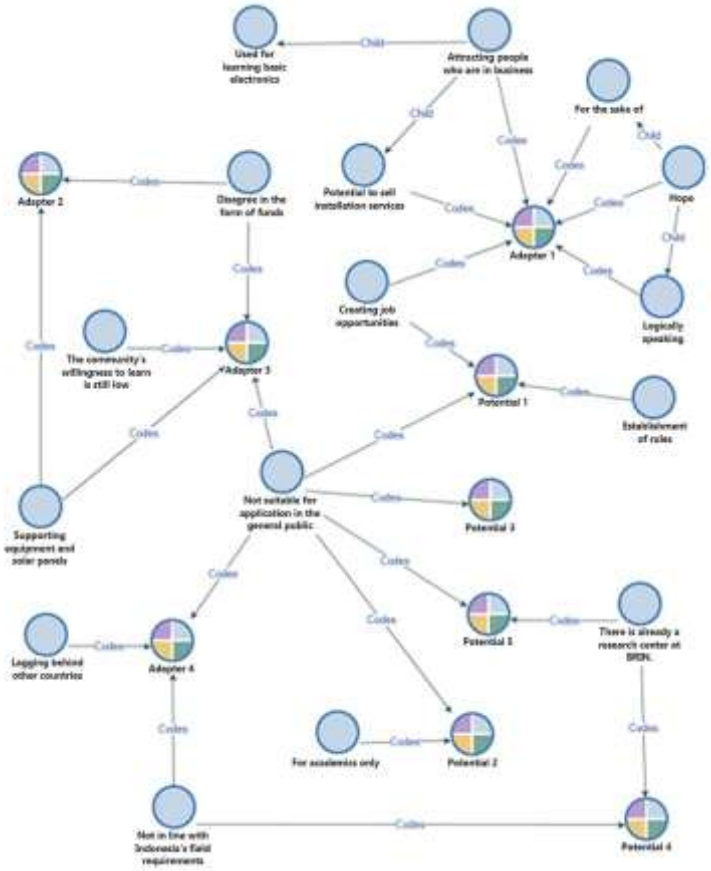
Specific description of the variables being studied

The core variable in these results was the public's perception of the five types of incentives asked in the interview, namely: feed-in tariff, R&D investment, net metering, green energy certification, and education programs. The perception of each incentive is captured through the informant's answers and then categorized into codes and nodes in NVivo; The number of nodes in each incentive can vary, reflecting the breadth/sharpness of the informant's view of each type of incentive.

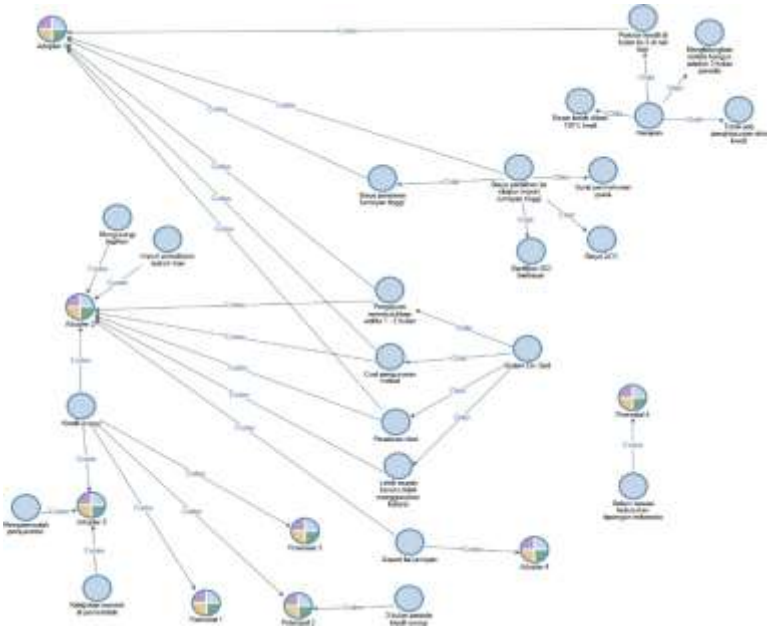
One of the important findings of the categorization process is that there are fewer nodes on net metering incentives than other types of incentives. This is explained because some informants (especially potential adopters) do not have a broad view of net metering, which is understood as a form that people have not fully used solar panels to meet their electricity needs, so their knowledge is still limited.



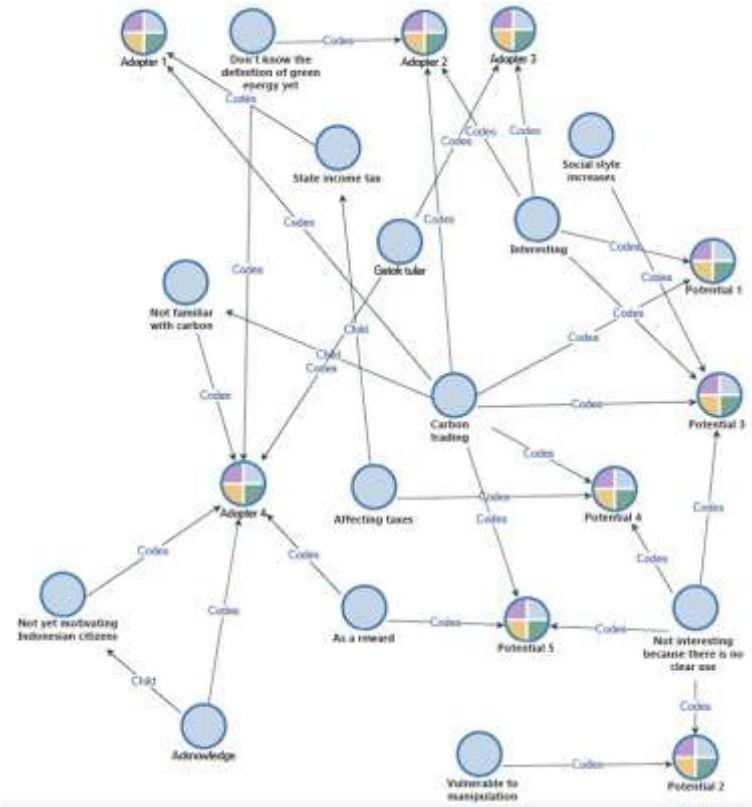
Picture 2. Project Map Feed-in Tariff



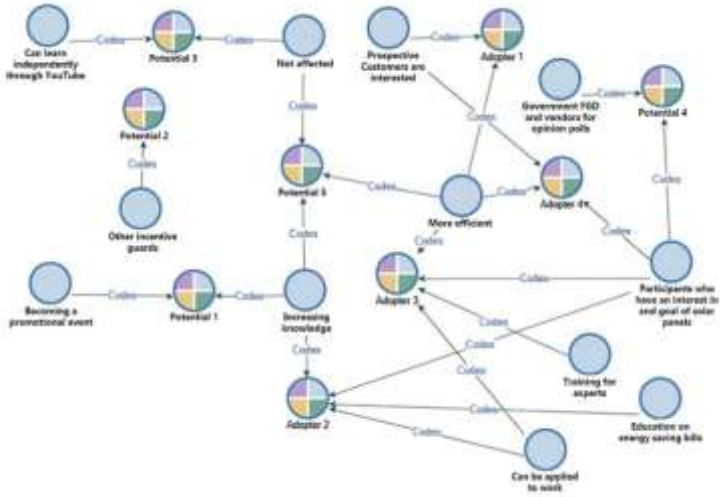
Picture 3. Project Map R&D Investment



Picture 4. Project Map Net Metering



Picture 5. Green Certification Project Map



Picture 6. Project Map Education Program

Findings by type of incentive

5.1) Feed-in Tariff (FiT): predominantly positive, but focused on policy certainty

The results of the project map show that there are differences of views between adopters and potential adopters regarding FiT, but in general, FiT tends to be perceived positively because it is considered to be able to cut household electricity operational costs, support independent energy production, and even open up the possibility of "selling value" of panels (e.g. the potential sale of used panels). The informant's quote also emphasized that FiT is seen

as attractive because it can increase the interest of the public/company to install solar panels when there is a form of subsidy/compensation that is felt.

On the other hand, there are findings that show FiT does not automatically change the decisions of some potential adopters. One potential adopter expressed objection if the incentive is limited to a certain age/benefit (for example, considered "short"), so that even though the FiT is considered "good", the decision to adopt solar panels is still influenced by the perception of the service life, the feasibility of investment, and how the electricity export mechanism is "used by PLN". This indicates that FiT needs to be designed with durations/rules that are understood by the public so that it is not perceived as detrimental.

Another finding that emerged as a "common node" (adopter and potential adopter) is that the implementation of FiT clashes with government policy and requires clarity of implementation. This means that even though FiT is seen as potential and provides economic benefits, regulatory uncertainty is a factor holding back FiT's push for adoption decisions.

5.2) R&D Investment: tends to be negative for the general public, more suitable for academics/research ecosystems

The perception of R&D investment shows a relatively consistent pattern: these incentives are considered inappropriate when given directly to the general public, because the "willing to install" community needs a scheme that is cheap and relevant to installation, rather than a complicated research grant mechanism. Potential adopters say that R&D is more suitable for academics and there are already research forums (e.g. BRIN), making it less relevant as an incentive for household adoption.

From the adopter side, there is a view that if R&D Investment is used as an incentive, the form should not be funds, but in the form of tools/supporting goods because financial assistance is considered vulnerable to insufficient/ineffective real implementation. However, adopters also see R&D opportunities as a trigger for people to enter the solar panel sector business, such as opening installation services or job opportunities, but not as the main driver of household adoption decisions.

The summary of the project map confirms that R&D Investment is perceived as "unsuitable" because it is not in line with Indonesia's field needs, is more suitable for academics, and there is an assumption that Indonesia's research is lagging behind other countries. However, in terms of opportunities, R&D Investment is still considered to have the potential to open jobs and business land/solar panel installation services.

5.3) Net Metering: understood as "energy credit" and bill reduction, but burdened with export-import costs/complexities

The results of net metering show two layers of meaning. Of the potential adopters, net metering is perceived as an energy credit (energy "stored" for the next period) and there is an understanding of the periodization of the credit (e.g. three months) associated with the regulations that have been in force. This interpretation shows that net metering is considered reasonable conceptually because it provides the advantage of more flexible energy use.

However, potential adopters also stated that net metering is not in accordance with the needs of the field in Indonesia. On the adopter side, net metering is understood through the practice of export-import electricity (sending kWh to the grid and importing at night). Here comes a strong barrier: adopters consider that there are high export-import costs when

switching to export-import meters and there are also significant licensing fees, which make on-grid/net metering schemes less attractive.

Additional findings reinforce the "process burden" aspect: there are licensing and certification cost components (e.g. Certificate of Operational Fitness / LSO) as well as handling costs that bring the total cost closer to other options (e.g. off-grid with batteries). This suggests net metering is not conceptually rejected, but "falls" due to cost, bureaucratic and implementation complexity in the field.

The conclusion of this section (based on the project map) is: net metering is perceived to be able to reduce bills and function as energy credits, but is considered to have high costs in export-import activities, "sticking" in government policies, and not yet in accordance with Indonesia's field needs.

5.4) Green Certification: attractive to some adopters, but considered "no obvious benefit" and prone to manipulation according to potential adopters

In green certification, adopters see this incentive as attractive because certificates can be traded and perceived to affect taxes and state revenue. At the same time, adopters also attribute these incentives to the low level of environmental awareness in Indonesia, so the acceptance of the wider community may not be strong.

On the other hand, potential adopters tend to view green certification as unattractive because it is considered not to provide special benefits that are immediately felt for them as a society. In addition, potential adopters consider this kind of scheme to be vulnerable to manipulation/trade, so its added value is increasingly questioned if there is no clear and trustworthy mechanism.

Thus, the results of green certification show a perception gap: adopters can see potential economic value/"green" attributes, but potential adopters need more concrete benefits and systems that do not raise suspicions of manipulation in order for these incentives to influence adoption decisions.

5.5) Education Program: considered the most efficient as a "gatekeeper" of other incentives, but not always a trigger for early decisions

The results of the project map show that education programs are perceived as more efficient incentives and can even be a "guard" for other types of incentives. However, there is an important note: educational programs do not necessarily directly make people interested in adopting solar panels (meaning not a single "trigger"), but rather serve to strengthen public understanding, readiness, and capacity so that other incentives (e.g. FiT or net metering) are more acceptable.

Adopters emphasize that education is very important because solar panel installation tends to be chosen by people who are "educated" on technology and understand the benefits of green technology; Adopter experience shows that the lack of technological literacy makes people not interested even though they have resources. This affirms the role of education as a prerequisite for the acceptance of technology and policy.

Meanwhile, some potential adopters think that education programs do not influence decisions too much, indicating that education does not necessarily change behavior if their main obstacle is the economic/regulatory aspect. Even so, other adopters see education as useful for work and competency improvement (for example, understanding the variations in

systems between countries), as well as to train experts so that access to solar panels can be cheaper in the future.

This finding is also affirmed in the part of the manuscript that says that education should be a unit with other incentives such as net metering and feed-in tariff because it plays a role in helping the community understand the benefits, potential, and operational mechanisms of solar energy.

6) Cross-findings synthesis

6.1) The pattern of "incentives that feel direct" vs "incentives that feel abstract"

Cross-incentive, the findings show that the incentives that are perceived to be stronger are those whose benefits are directly felt by households (e.g. cuts in operating costs, reduced bills, flexibility in energy consumption), such as FiT and net metering. This can be seen from the narrative that FiT is understood to be able to cut household operational/production costs, and net metering is understood as energy credit and bill reduction.

Conversely, more "abstract" incentives for the general public (e.g. R&D investment, green certification) tend to be perceived as less targeted because their benefits are indirect, require a special understanding/ecosystem, or pose a risk of mistrust (prone to manipulation). This can be seen in R&D which is considered more suitable for academics/BRIN, and green certification which is considered by potential adopters to not provide specific benefits and is vulnerable to manipulation.

6.2) Dominant barriers: regulatory uncertainty and "transaction costs" of implementation

The results also show that the strength of incentives can "decrease" when two dominant barriers are encountered: (1) policy uncertainty/impasse, and (2) transaction costs (management, licensing, certification, and technical process costs). In FiT, the narrative of "hitting government policies" emerged as a point that held back FiT's influence on adoption decisions.

In net metering, the barriers to transaction costs are much more pronounced: high export-import fees, expensive licensing, and complicated processes make this scheme less attractive even though it is conceptually understood to be beneficial. This reinforces the conclusion that incentive design must be accompanied by simplification of procedures and a reduction in management costs for the impact to be real.

6.3) Education Program as a "strengthener" of market stability (not just a campaign)

Although education programs are not always considered to be a direct trigger for decisions, the findings show their role as "other incentive guards" and as a means of building social-technical readiness. This is relevant to the logic of the need for stable policies and in harmony with market dynamics as illustrated by the policy implications in Figure 1 which emphasizes the importance of strategies that do not trigger boom-busts and can maintain the sustainability of uptake.

CONCLUSION

This study aims to understand the perception of the people of Yogyakarta towards the five rooftop solar panel incentive schemes and their relationship with adoption decisions, in order to identify the most relevant and realistic incentives applied in the household context. The results show that incentives whose benefits are perceived as "direct" to users, especially

feed-in tariffs and net metering, are more readily accepted as incentives, but their impetus can weaken when faced with policy uncertainty, complicated procedures, and high transaction costs (licensing and export-import). On the other hand, incentives whose benefits are not seen as immediately felt by households such as R&D investment and green certification tend to be considered less on target because they are considered more relevant to the academic/industrial ecosystem or have the potential to raise doubts related to accountability. Among all options, education and awareness-raising programs emerged as the most strategic reinforcing factors because they were able to build literacy, minimize technical misconceptions, and increase social readiness to receive other incentives, thus having more potential to maintain the sustainability of adoption. The contribution of this study lies in the perception-based mapping of adopters and potential adopters using the SODA approach and NVivo categorization, which enriches the renewable energy adoption literature by emphasizing the dimension of "incentive suitability" to field needs, rather than simply the existence of incentives. The limitations of the study include a limited number of informants and the coverage of specific areas in Yogyakarta, so generalizations to other regions need to be cautious. Further research is recommended to expand the location and number of participants, test simulated incentive designs (e.g. scenarios of lowering licensing costs/standardization of procedures), and combine perception data with economic-technical data (costs, payback periods, and administrative burdens) to generate more precise policy recommendations

REFERENCES

Agustar, Ari, & Prawiraatmadja, Widhyawan. (2024). A System Dynamics Model for Rooftop Solar PV System Development in Indonesia. *Int. J. Curr. Sci. Res. Rev*, *7*(06), 4440–4452.

Afif, F., & Martin, A. (2022). Tinjauan potensi dan kebijakan energi surya di Indonesia. Jurnal Engine: Energi, Manufaktur, dan Material, 6(1), 43. doi:10.30588/jeemm.v6i1.997

Apriandi Zuhir, M. A. Z., Nurlinda, I., Imami, A. D., & Idris, I. (2017). Indonesia pasca ratifikasi Perjanjian Paris 2015: Antara komitmen lingkungan, 1*(2), 231–248. doi:10.24970/jbhl.v1n2.18

Armansyah, Husna, J., & Harahap, K. I. (2023). Penggunaan sistem solar sel pada rumah sederhana sebagai penerangan. Journal of Electrical Technology, 8.Bagaskara, A., Kurniawan, D., Bintang, H. M., Suryadi, R. J., Firdausi, S. N., & Tumiwa, F. (2022). *Indonesia Solar Energy Outlook 2023.

Budiarto, R., Widhyarto, D. S., & Sulaiman, M. (Eds.). (2019). Transisi energi berbasis komunitas di kepulauan dan wilayah terpencil. Yogyakarta: Universitas Gadjah Mada.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? Qualitative Research, 6(1), 97–113.

Castaneda, M., Zapata, S., Cherni, J., Aristizabal, A. J., & Dyner, I. (2020). The long-term effects of cautious feed-in tariff reductions on photovoltaic generation in the UK residential sector. Renewable Energy, 155, 1432–1443. https://doi.org/10.1016/j.renene.2020.04.051

Cang, Y., Fang, Z., & Li, Y.** (2016). Renewable energy policies in promoting financing and investment among the East Asia Summit countries. Energy Policy, 95, 427–436. doi:10.1016/j.enpol.2016.02.017

Chowdhury, M. F. (2015). Coding, sorting and sifting of qualitative data analysis. Quality & Quantity, 49(3), 1135–1143.

Chrysikopoulos, S. K., Chountalas, P. T., Georgakellos, D. A., & Lagodimos, A. G. (2024). Green certificates research: Bibliometric assessment. Sustainability, 16(3), 1129.

Comello, S., & Reichelstein, S. (2017). Cost competitiveness of residential solar PV: The impact of net metering restrictions. Renewable and Sustainable Energy Reviews, 75, 46–57.

Cunningham, P., Gok, A., & Lareda, P. (2016). The impact of direct support to R&D and innovation in firms.

Do, T. N., Burke, P. J., Baldwin, K. G. H., & Nguyen, C. T. (2020). Underlying drivers and barriers for solar photovoltaics diffusion: The case of Vietnam. Energy Policy, 144, 111561.

Dunia Energi. (2022, 23 Februari). Insentif Sustainable Energy Fund peluang capai target 450 MW PLTS Atap. Dunia-Energi.com.

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research. British Dental Journal, 204(6), 291–295.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? Field Methods, 18(1), 59–82.

Gunawan, R. M. B. (2021). GRC (Good governance, risk management, and compliance). PT RajaGrafindo Persada.

Halimatussadiah, A., et al. (2023). The impact of fiscal incentives on the feasibility of solar photovoltaic projects. Journal of Sustainable Development of Energy, Water and Environment Systems, 11(1).

Hasjanah, K. (2022). Peluncuran ISEO 2023: Memacu pemanfaatan energi surya di Indonesia. IESR.

Hasnain, S. M., Alawaji, S. H., & Elani, U. A. (1998). Solar energy education—A viable pathway for sustainable development. Renewable Energy, 14(1–4), 387–392.

Held, A., Ragwitz, M., & Haas, R. (2006). On the success of policy strategies for renewable electricity in the EU. Energy & Environment, 17(6), 849–868.

Hsu, C.-W. (2012). Using a system dynamics model to assess the effects of capital subsidies and feed-in tariffs. Applied Energy, 100, 205–217.

Lerman, L. V., Gerstlberger, W., Lima, M. F., & Frank, A. G. (2021). Triple helix and renewable energy development. Energy Research & Social Science, 71.

Luna-Reyes, L. F., & Andersen, D. L. (2003). Collecting and analyzing qualitative data for system dynamics. System Dynamics Review, 19(4), 271–296.

Majid, M. A. A., et al. (2017). Piloting for interviews in qualitative research. International Journal of Academic Research in Business and Social Sciences, 7(4).

Manahara, S., & Putri, S. K. (2023). Tantangan transisi energi terbarukan di Indonesia. Journal of Innovation Materials, Energy, and Sustainable Engineering, 1(1).

Manongga, A., Pangemanan, S., & Kairupan, J. (2018). Implementasi program keluarga harapan.

Morthorst, P. E. (2000). The development of a green certificate market. Energy Policy, 28(15), 1085–1094.

Noll, D., Dawes, C., & Rai, V. (2014). Solar community organizations and peer effects. Energy Policy, 67, 330–343.
Nugraha, I. (2020). Bagaimana perkembangan pemanfaatan energi surya atap? Mongabay.
Pazheri, F. R., Othman, M. F., & Malik, N. H. (2014). A review on global renewable electricity scenario. Renewable and Sustainable Energy Reviews, 31, 835–845.
Perdana, A. P. (2023). Pemanfaatan energi surya di Indonesia masih sulit berkembang. Kompas.id.
Poudineh, R., Rubino, A., & Weston, J. (2015). Electricity reform in Europe.
Rahmawati, S., & Salam, R. (2021). The effectiveness of Indonesia's feed-in-tariff implementation. IPTEK Journal of Proceedings Series.
Ramli, M. A. M., & Twaha, S. (2015). Analysis of renewable energy feed-in tariffs. Renewable and Sustainable Energy Reviews, 45, 649–661.
Rezaei, R., & Ghofranfarid, M. (2018). Rural households' renewable energy usage intention. Renewable Energy, 122, 382–391.
Ridwan, M. (2020). Pemanfaatan potensi PLTS terhambat masalah ini. Bisnis.com.
Rigter, J., & Vidican, G. (2010). Cost and optimal feed-in tariff for small scale photovoltaic systems in China. Energy Policy, 38(11), 6989–7000.
Roubelat, F. (2006). Scenarios to challenge strategic paradigms. Futures, 38(5), 519–527.
Saunders, B., et al. (2018). Saturation in qualitative research. Quality & Quantity, 52, 1893–1907.
Sugirianta, I. B. K., et al. (2016). Analisa keekonomian tarif penjualan listrik PLTS. Majalah Ilmiah Teknologi Elektro, 15(2).
Sukmajati, S., & Hafidz, M. (2015). Perancangan dan analisis PLTS 10 MW on grid di Yogyakarta. Jurnal Energi & Kelistrikan.
Sun, P., & Nie, P. Y. (2015). Comparative study of feed-in tariff and renewable portfolio standard. Renewable Energy, 74, 255–262.
Timilsina, G. R., Kurdgelashvili, L., & Narbel, P. A. (2012). Solar energy: Markets, economics and policies. Renewable and Sustainable Energy Reviews, 16(1), 449–465.
Weber, M., & Rohracher, H. (2012). Legitimizing research and innovation policies for transformative change. Development and Learning in Organizations, 26(6).
Yana, S., & Mauliza, P. (2024). Energi terbarukan dalam perspektif bio-ekonomi. Jurnal Serambi Engineering, 9(2).
Yearworth, M., & White, L. (2013). The uses of qualitative data in multimethodology. European Journal of Operational Research, 231(1), 151–161.
Yildiz, Ö., et al. (2015). Renewable energy cooperatives as gatekeepers or facilitators? Energy Research & Social Science, 6, 59–73.
Zaelani, I. R. (2019). Peningkatan daya saing UMKM Indonesia.
Zhang, D., Zheng, M., Feng, G. F., & Chang, C. P. (2022). Environmental policy and green innovation. Renewable Energy, 195, 1113–1124.
Zhang, S., Andrews-Speed, P., & Zhao, X. (2013). Political and institutional analysis of China's wind power policy. Energy Policy, 56, 331–340.
Zhou, X., & Xu, Z. D. (2018). System dynamic model and policy optimized simulation of energy conservation. Systems Engineering Theory & Practice.