

Do it yourself - PV for everybody!

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Technology
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Introduction

The implementation of photovoltaic systems in private households can make a significant contribution to promoting the sustainable energy transition and enable end consumers to become increasingly autonomous from rising energy costs [1]. In this context, three specific workshops were designed and held, namely those dealing with the topics "Balcony Power Plants," "Photovoltaic Island Systems" and "Photovoltaic Flat Roof Construction". Each of these workshops was held twice, free of charge and open to all. Due to an exceptionally high demand for the topic "Balcony Power Plants", this workshop was held six times on two consecutive days.

The primary objective of these workshops was to increase the participants' understanding of these technologies and to encourage them to install and practically test photovoltaic systems on their own. To quantify and analyse the impact of these workshops on the participants, surveys were conducted before the workshops began and four weeks after they ended.

Implementation and planning

The implementation of the PV workshop is divided into two parts. The workshop starts with a theoretical part, where everything about photovoltaic technology is explained. This is followed by a practical part, where the participants can try out the components.

Implementation:

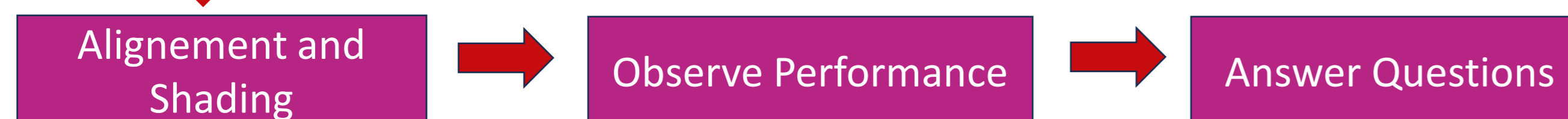
1. Introduction of Group & Project
2. Knowledge acquired
3. Presentations created
4. Procured materials
5. Materials tried out
6. Dates set
7. Room organized
8. Advertising and promotion
9. Registrations processed
10. Implementation of workshops



Theoretical part:



Practical part:



11. Evaluation of Workshops

Advertising

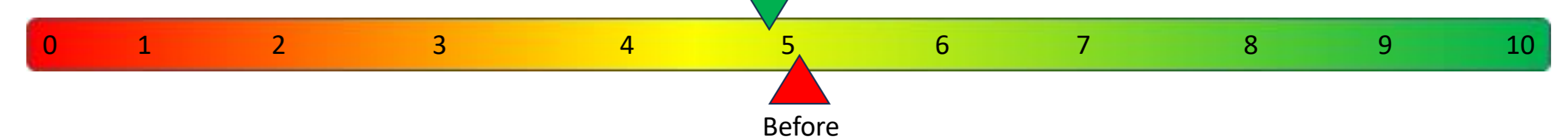


Evaluation of the surveys

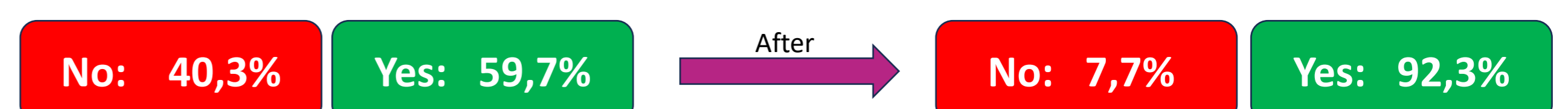
How would you rate your knowledge of photovoltaic technology?



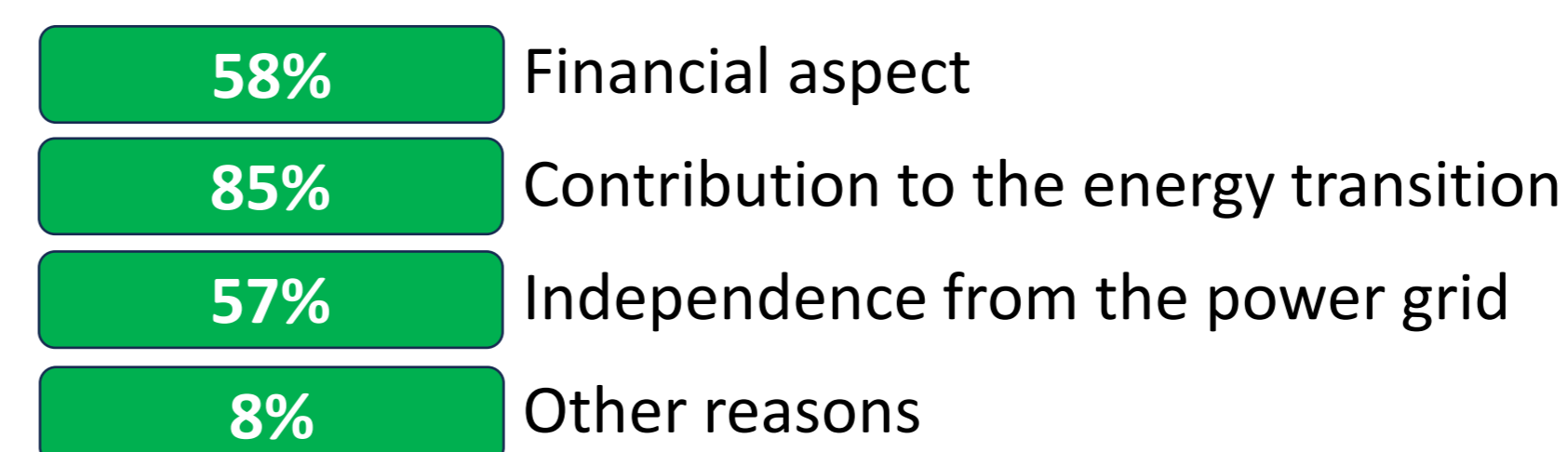
How do you rate the likelihood of building your own PV system in the foreseeable future?



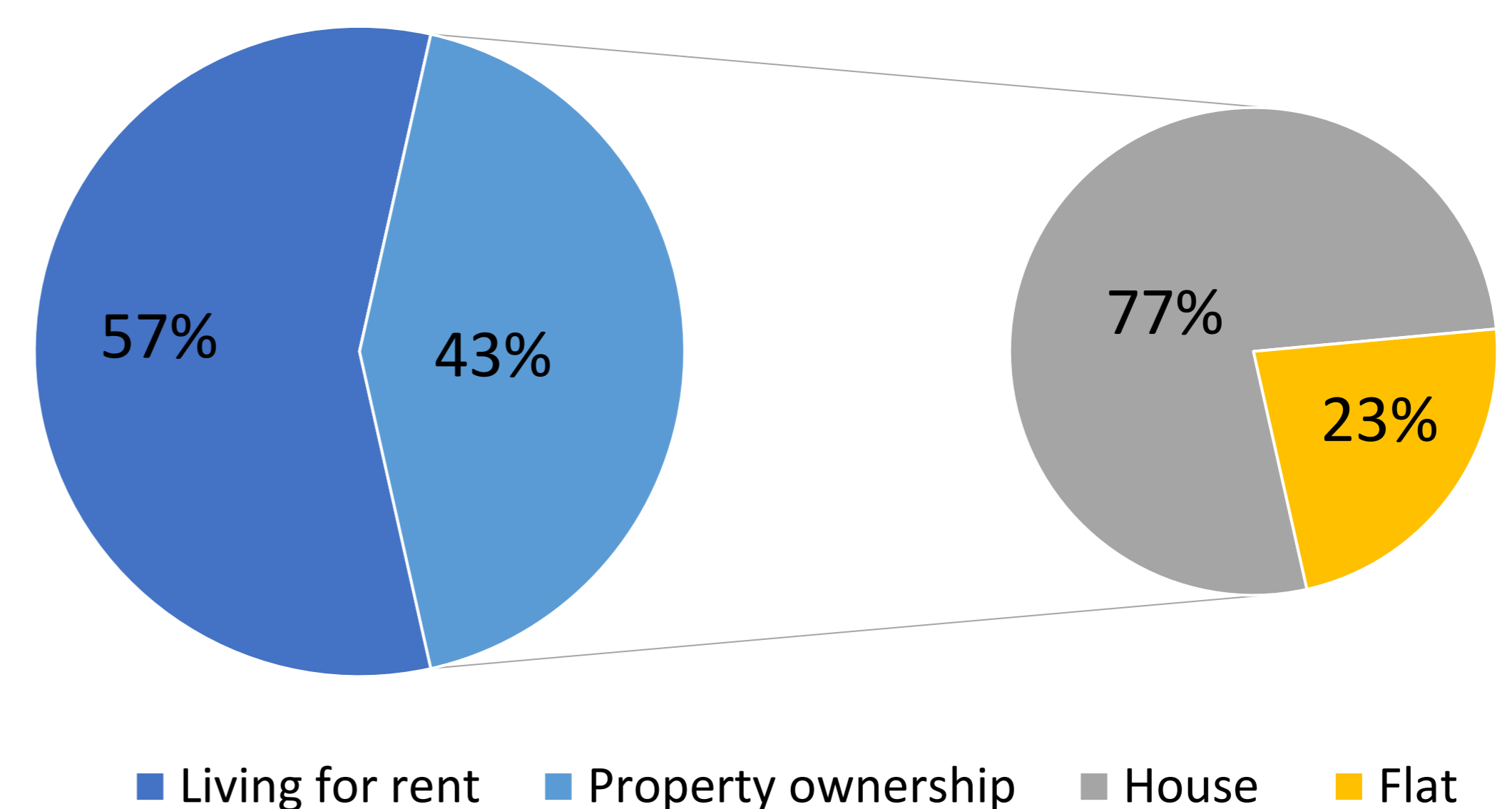
Do you currently have the confidence to build your own PV system?



What are reasons for purchasing your own PV-system?



Housing situation of participants



Conclusion

Planning

- Three workshop topics were developed: Balcony Power Plants, off-grid PV Systems and PV Flat Roof Construction

Advertising

- Initial difficulties with advertising the workshop due to lack of a large mailing list
- Mailing list of the university and the city of Cologne proved effective for the workshop
- Social media such as TikTok or Instagram advertising did not result in many registrations, as it was difficult to target the local audience
- Paid ads on the internet needs to be considered for future workshops

Implementation

- The implementation worked well from the beginning.
- The optimal group size was set at 10 to 20 people to allow for discussions and practical support.
- The time allocation of about 1 hour for the theoretical and practical part proved to be sufficient.

Survey and Evaluation

- The surveys were a valuable tool to obtain results and suggestions for improvement.
- Concerns about the low response rate for the second survey.
- The free survey tool used may not be optimal for scientific evaluation.

Overall success

- The workshop series was successful and well received by both presenters and participants
- A recommendation for the continuation of the workshop series, driven by the growing interest in residential solar.

References

- [1] Harry Wirth, Fraunhofer ISE, „Aktuelle Fakten zur Photovoltaik in Deutschland“, 27.09.2023
- [2] Christian Gutsche, „Handbuch Gemeinschaftlicher Solar-Selbstbau in Deutschland, 2023
- [3] Vese (Bern), „Handbuch PV Selbstbau – Unterlagen zum organisierten Selbstbau von Photovoltaikanlagen, 2018
- [4] Bundesministerium für Wirtschaft und Klimaschutz (BMWK), „Photovoltaik-Strategie Handlungsfelder und Maßnahmen für einen beschleunigten Ausbau der Photovoltaik“, May 2023