



Financial participation as an opportunity to increase the overall acceptance of wind energy projects?

Dällenbach & Stauch & Vuichard

University of St. Gallen

Institute for the Economy and the Environment

Good Energies Chair for
Management of Renewable Energies



Agenda

1. Wind energy and acceptance issues
2. Glance into literature:
Procedural and distributive justice
3. Operationalization of our research project
4. Results: overall and in more detail
5. Special case:
Mobilizing center progressive parties
6. Conclusion and Q&A





Glance into literature I

The Not In My Backyard phenomena (NIMBY) offers an initial explanation (Wüstenhagen et al., 2007, Devine-Wright, 2009)

Theory supplemented by focusing on two institutional factors: procedural justice and distributive justice (Dimitropoulos & Kontoleon, 2009, Wolsink, 2007)

Distributive justice: how perceived benefits (e.g. profits from electricity sales) and costs (e.g. environmental & visual impact) are fairly allocated

- between project developers and local residents
- among the local community as a whole (Tabi & Wüstenhagen, 2015)



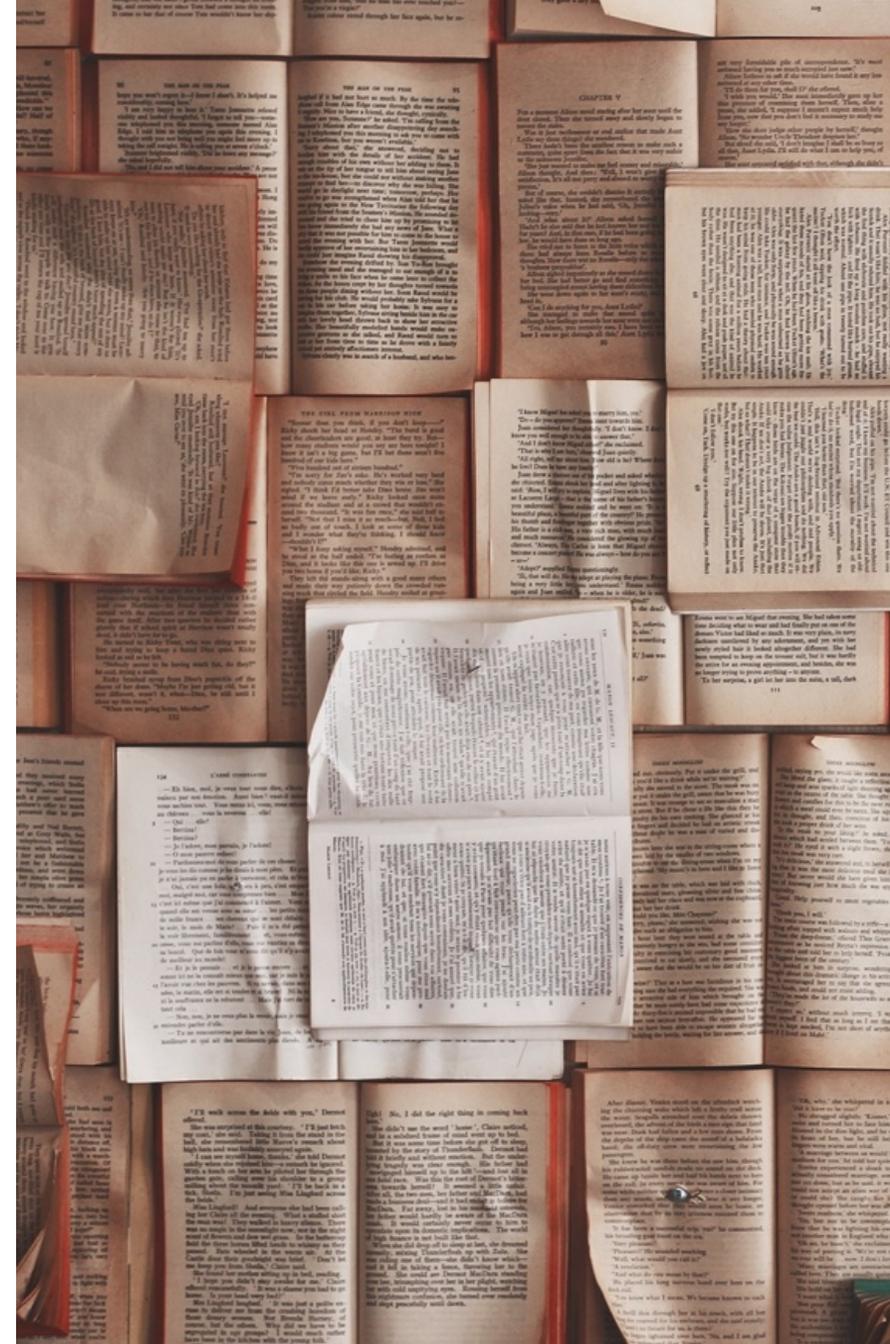
Glance into literature II

Previous research suggests that:

Financial participation of the local population and community ownership **can positively influence the social acceptance of a wind park** (Toke, 2005; Hübner et al., 2013; Aitken, 2010; etc.)

Studies conducted so far:

No specification of the term financial participation. But: literature suggests that the specifications of a financial participation model may decisively define **whether it is perceived to contribute to the distributive justice of a project** (Adams, 1963; Fehr & Schmidt, 1999)



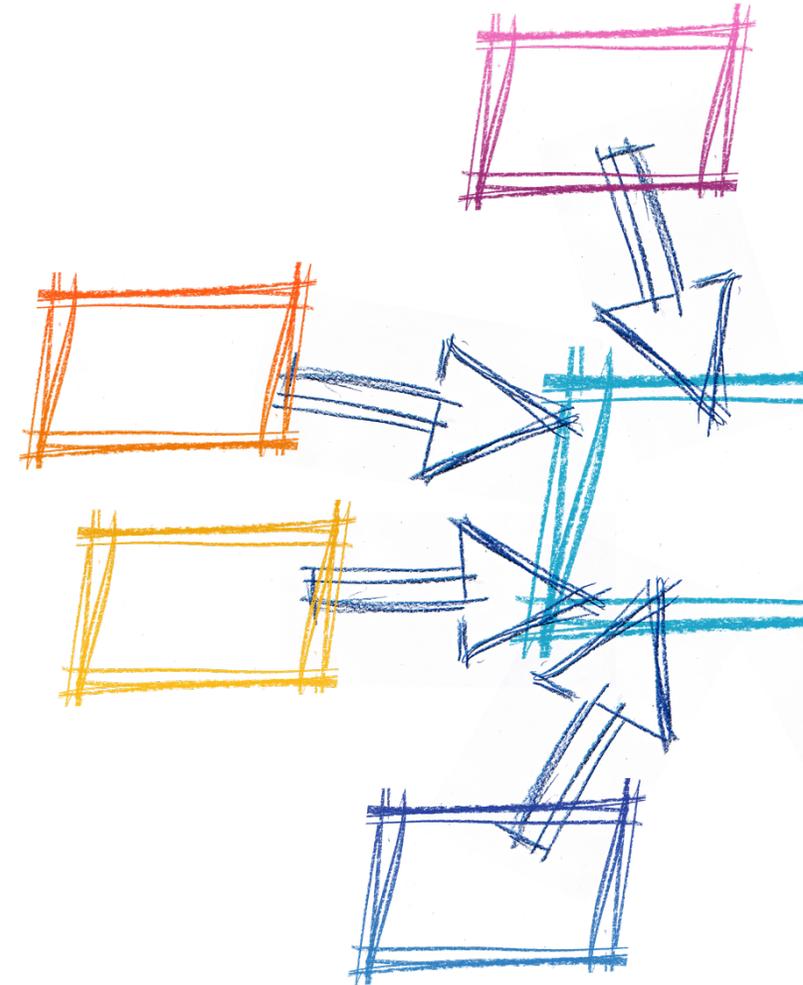
Operationalization

Our research project uses an **experimental survey setting** where every participant gets put into a situation where there is a wind farm planned within their community.

The **wind farm presented is a prototype wind farm for Switzerland**. Additional information was given on annual electricity production of the wind farm, the project partner, procedural justice issues and environmental issues.

Sample configuration:

- N=1200
- Total of 4 groups (1 control group, 3 groups with financial treatment)
- Overall sample as well as specific groups adjusted for age, gender, political party preference and income



Wind share

Becoming a co-owner of the wind farm:

At the price of CHF 500 per share you benefit from full profit sharing and must also bear the project risks. You will receive an average dividend of 5% per share.

The shares are issued by the local utility and can be sold back to the utility at any time for the amount of CHF 500. You can purchase a maximum of 20 shares. The project duration is 20 years.

-  500 CHF per share – maximum amount 10'000 CHF
-  Full profit sharing but also bearing of risks
-  Average of 5% dividend



Wind bond

Participating financially without direct ownership:

At the price of CHF 500 you can purchase wind park bonds. As a lender you bear only low project risks and benefit from an annual fixed and guaranteed interest rate of 2%.

The wind farm bond is callable at the end of each year. After the end of the project term (20 years) your bonds will be reimbursed to you at the initial purchase price of CHF 500.



500 CHF per bond– maximum amount 10'000 CHF



Low project risk and low but guaranteed interest rate of 2%



Bonds are callable at the end of every year



Wind resource tax

Financial participation as a community:

Participants are presented with the information that their municipality is introducing a wind resource tax. The income is transferred into an earmarked fund designated for climate change / leisure projects.

Specifically, the project owners would pay a wind resource tax in the amount of CHF 10,000 per turbine and year. The project duration is 20 years.

-  Income from wind resource tax transferred into earmarked fund
-  10'000 CHF per turbine and year
-  Procedure comparable to the practice of the water resource tax



Results

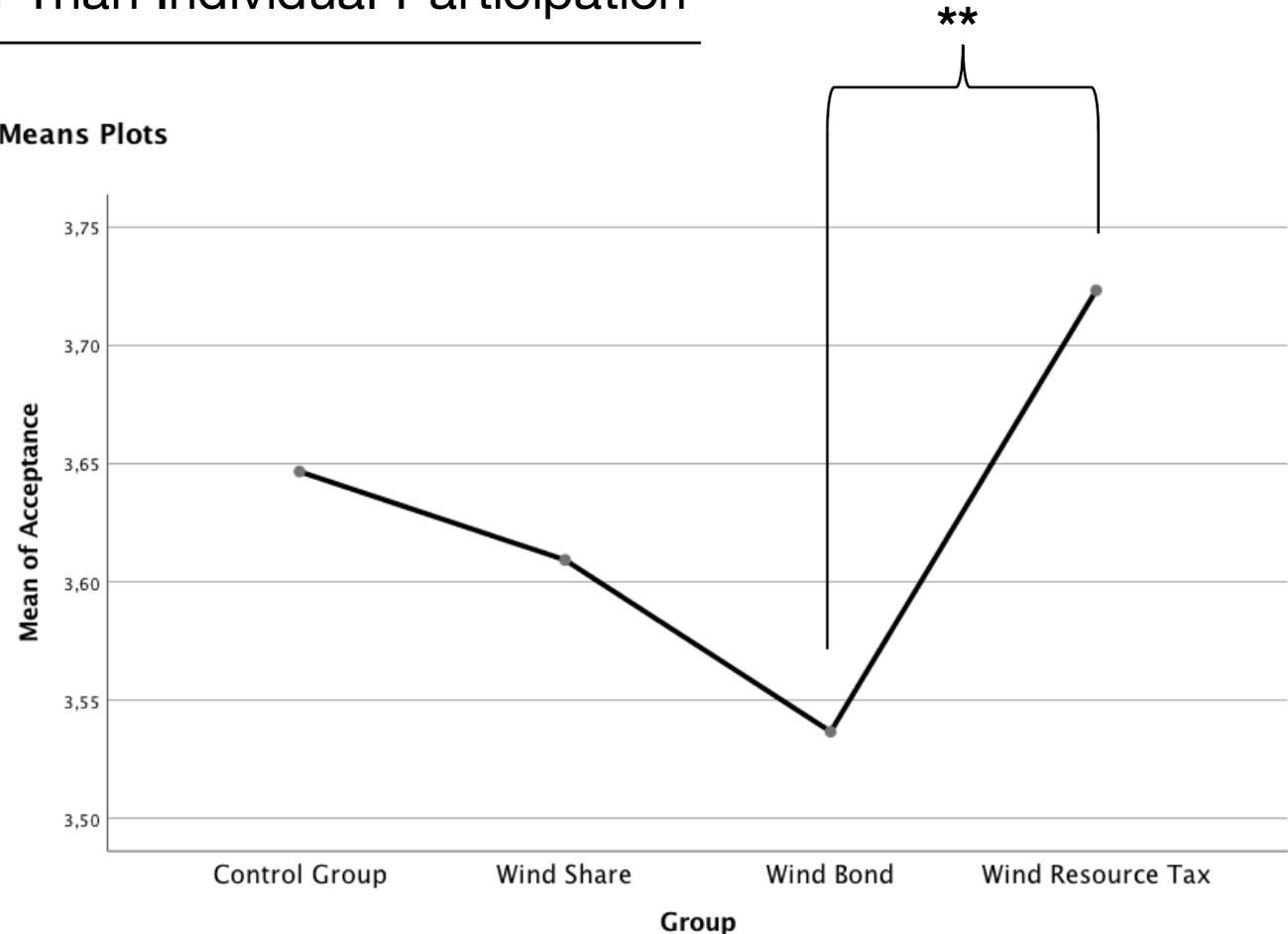
Overall – Collective Participation More Popular Than Individual Participation

If financial participation is available, a **collective participation scheme** is better suited than individual schemes of financial participation (with regard to project acceptance)

Wind resource tax as collective financial participation scheme **increases the overall acceptance** of the wind park

Compared to the wind resource tax, wind bonds **decrease the overall acceptance** significantly

Means Plots



** | $p < 0.05$

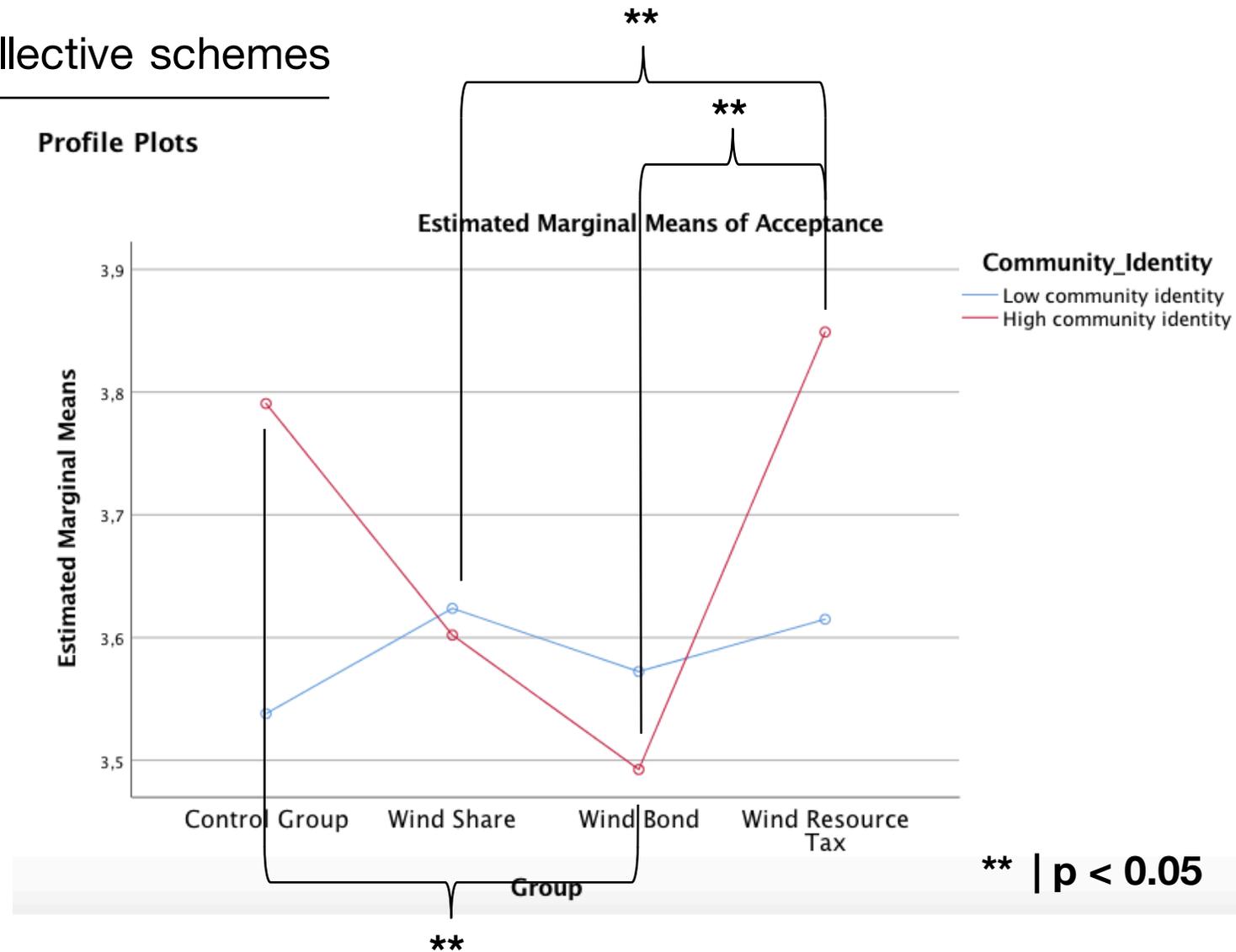
Results

Community attached people support collective schemes

Community attached people are ready to **actively support their community**, which is why it is important that they **are not opponents**

Acceptance of community attached people decreases when **individual financial participation** is in place, which could **lead to a countermovement**

Community attached people are most supportive if a wind resource tax is in place



Results

Risk averse people prefer collective participation

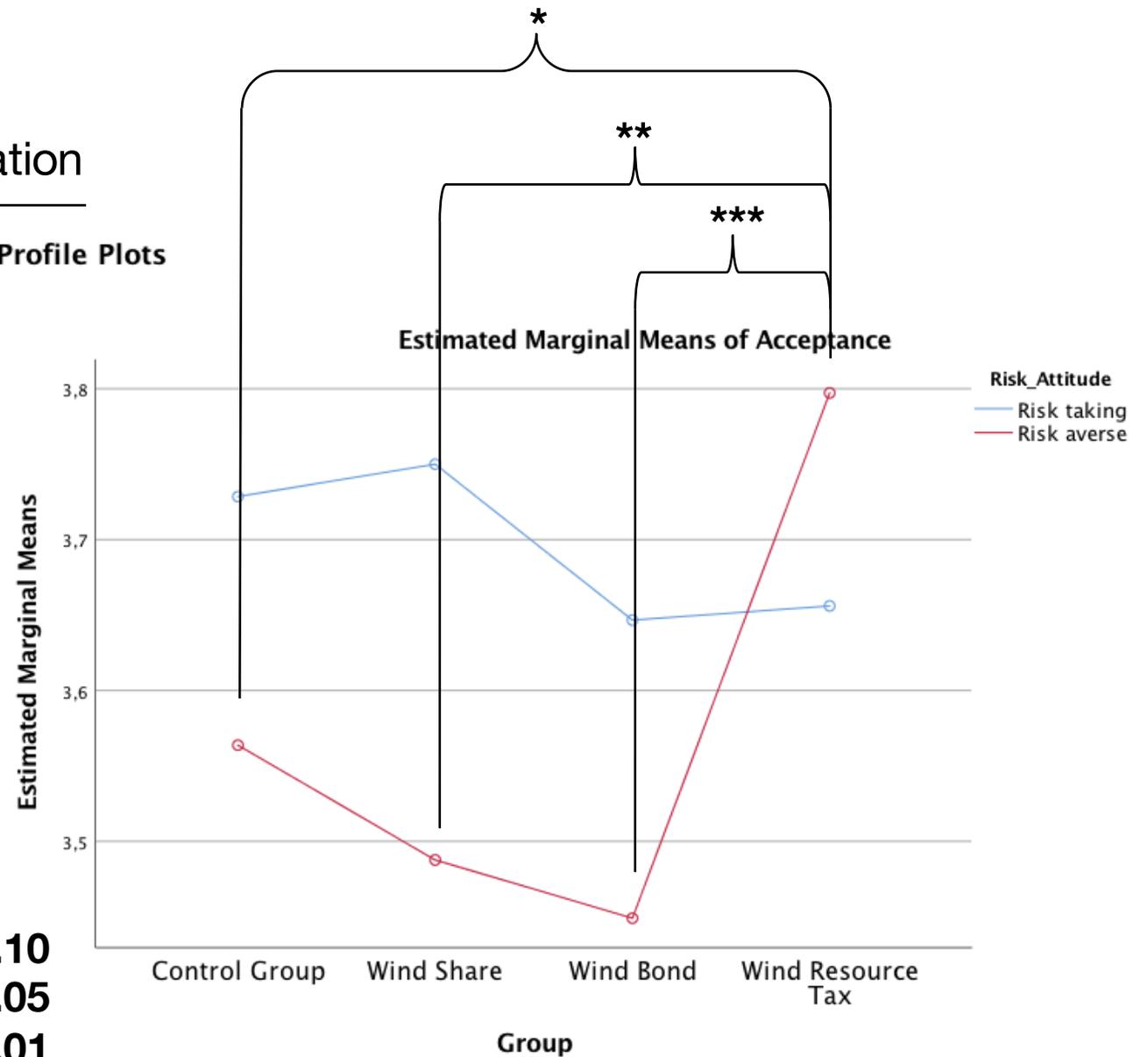
Risk averse people are another important target group with regard to acceptance, as they are **rather reluctant to changes** in their community

Risk averse people have **significantly more acceptance** for the project when a **wind resource tax** is in place

Risk taking people **experience no meaningful increase in their acceptance** when **wind share** schemes are available

* | $p < 0.10$
 ** | $p < 0.05$
 *** | $p < 0.01$

Profile Plots



Conclusion and Q & A



In general: our results show the importance of the role of distributive justice within the field of social acceptance of a wind energy.



The implementation of a collective financial participation scheme **does no harm** and can **increase the overall acceptance in relevant target groups** (risk averse, community attached).



Our results do not necessarily represent local public opinion in other countries. However, the **challenges are similar to other densely populated countries** where wind turbines are located near settlements.



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