

# Why not?

## Acceptance of different approaches to wind energy use among Austrian households

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# Overview

- The Framing: SmallWinds4Cities
- The Details
- Conclusions



# The Project “Small Wind 4 Cities”

- Long Title: Enabling Small Wind Power Systems to contribute to a resilient and sustainable future Energy System of Smart Cities
- Short Title: Small Wind 4 Cities
- Start date: 01.09.2021
- End date: 31.08. 2025
- Total cost: 544.526 €




# Goals of “Small Wind 4 Cities”

- Simplification of planning and approval process of SWT
  - » Certificate of structural stability
  - » Noise emission
  - » Ice-throwing
- Creation of a simplified site-assessment method for urban areas
- Enhance public awareness for SWT
  - » Survey for public acceptance of SWT in populated areas
  - » Survey: reservations of people on SWT



# Study setup

- What is the **general attitude** towards the use of wind energy among Austrian households?
  - » Exposure, urban-rural gradient, political orientation, conspiracy mentality
- Do Austrian households **discriminate** in their approval of **different approaches** to wind energy use?
  - » Type of plant, localisation, shareholdership
-  Preregistration: [doi.org/10.17605/OSF.IO/SU8H2](https://doi.org/10.17605/OSF.IO/SU8H2)

# Study setup

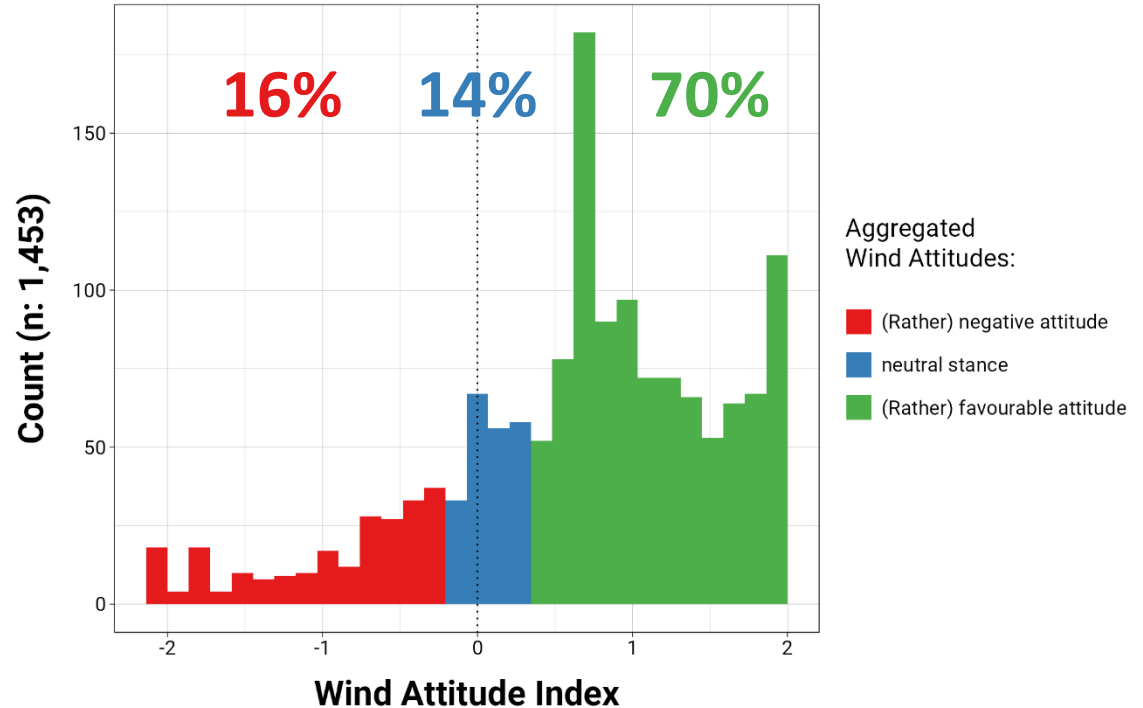
## Online survey:

- Sampling proportional to:
  - » age, gender, education, population distribution between Austrian federal states
- Field phase: 04/15/24 to 05/07/24
- 1.642 complete 👉 1.453 valid responses
  - » duration & uniform response behaviour
- Structural similarity sample-population: +/- 1%



# The general attitude towards wind energy




















- **Wind attitude index:**
  - » 8 5-point Likert-items
  - » Consistent ( $\alpha$ : 0.93)
  - » Aggregation by averaging
    - Min: -2 ... negative attitude
    - Max: 2 ... positive attitude



# Do households discriminate in their approval?

## ■ Conjoint-Experiment:

- » Type of plant: 3 levels
- » Location: 3 levels
- » Shareholder: 4 levels
  - 28 questions
- » 8 random pair-wise comparisons per participant

		Location ↓					
		outside		commercial areas resp. settlement edge		central	
Type →		horizontal	vertical	horizontal	vertical	horizontal	vertical
Shareholder ↓	external actors = local business = non-profit - public = citizens		×	×	×	×	×
	external actors = local business						
	non-profit resp. public entity						
	private						



# Conjoint-Experiment:

- Which of these two turbines would you prefer in your community?
  - » Incl. "none of them"

Auf dieser Seite sehen Sie in 4 Paarvergleichen, wie unterschiedlich Windräder umgesetzt werden können.

👉 Zu jeder Umsetzungsvariante finden Sie unter dem Bild Informationen zu den Besitzer\*innen und zum Standort der Anlage(n).

\* Welches dieser beiden Windräder würden sie eher in ihrer Gemeinde befürworten?



im Besitz von Bürger\*innen

außerhalb der Siedlung



im Besitz von Bürger\*innen

im Siedlungszentrum



Keines  
von  
beiden

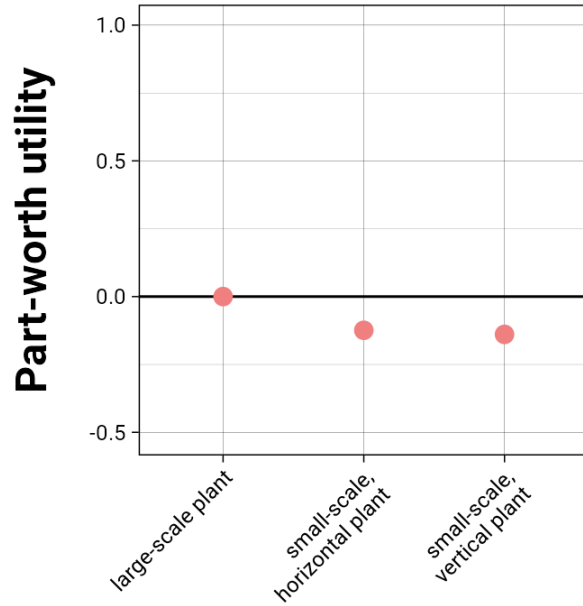


# Do households discriminate in their approval?

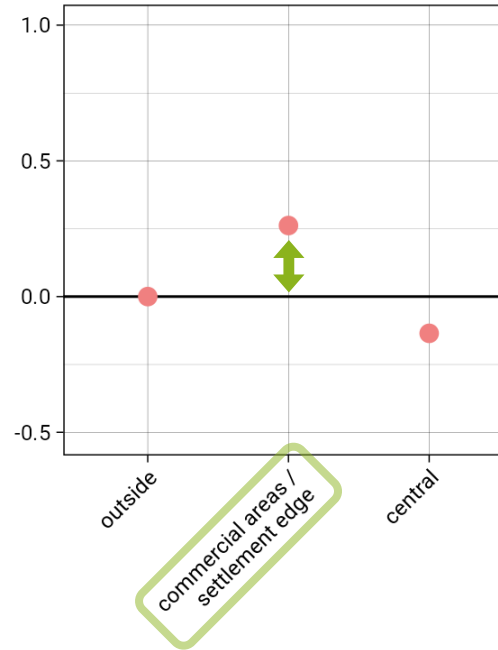
Attribute (rel. importance)	Label part-worth utilities	Estimate	Std. Error	z-value	p	Sig.
<b>Power plant type (9%)</b>	large-scale wind-power plant, vertical rotor	0	-	-	-	-
	small wind-power plant, horizontal rotor	-0.12	0.04	-2.95	3.22E-03	**
	small wind-power plant, vertical rotor	-0.14	0.04	-3.19	1.41E-03	**
<b>Location (27%)</b>	outside	0	-	-	-	-
	commercial areas / Settlement edge	0.26	0.04	6.82	9.04E-12	***
	central	-0.14	0.03	-3.92	8.69E-05	***
<b>Shareholders (64%)</b>	external actors	0	-	-	-	-
	Non-profit / public entities	0.95	0.04	24.06	0	***
	local business	0.6	0.04	16.79	0	***
	citizens	0.54	0.04	14.95	0	***
	None-option	-1.17	0.05	-23.13	0	***

# Do households discriminate in their approval?

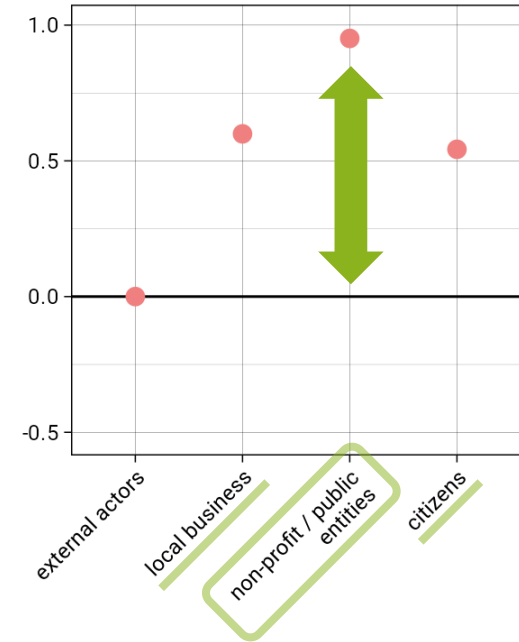
## Form



## Location



## Shareholder



# Conclusions

- ~ 85% of households neutral & positive wind attitude
- **Clear discrimination** among different approaches to use wind power in AUT:
  - » **Shareholdership:** strong preference for local and especially **public & non-commercial entities**
    - 👉 proxy for locally synced gains & burdens
  - » preference for small wind power in **commercial areas & edge of settlements**
    - 👉 Spaces that do not create local or regional identity
  - » **Less relevant:** form of power plant (horizontal vs. vertical)



# Thank you!

FH  
TECHNIKUM  
WIEN



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