



Regional Policy Acceptance

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OESCHGER CENTRE
CLIMATE CHANGE RESEARCH



Schweizerische Eidgenossenschaft
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Swiss Federal Office of Energy SFOE

Sweet Edge is a research project sponsored by the Swiss Federal Office of Energy's SWEET programme and coordinated jointly by UNIGE and EPFL

sweet swiss energy research
for the energy transition
EDGE

“Enabling Decentralized renewable GEneration in the Swiss cities, midlands, and the Alps”



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Regional Policy Acceptance – Program:

- I. Why a regional perspective?
- II. The EDGE regions – the data
- III. Insights into regional policy acceptance
- IV. Conclusion



Why a regional perspective?



Why regional differences matter

- Different regions, different preferences?
- Polarization and political feasibility
- Need for targeted solutions
- **A broad conceptualization of policy acceptance**
 - General energy policy preferences
 - But also
 - Acceptance of energy technologies – Potential for measures to promote specific technologies
 - The perception the energy provider – A governance perspective

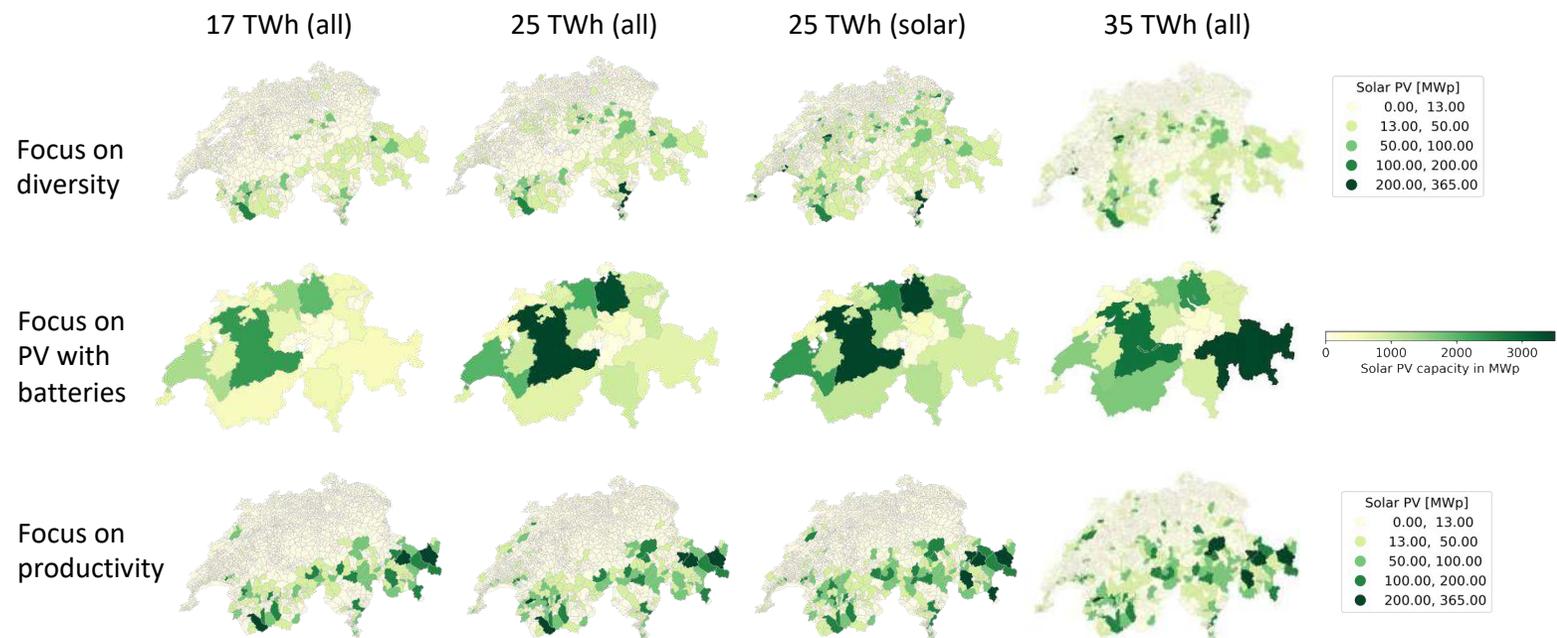


Potential drivers of regional disparities

«Natural»:

– Renewable potential

Solar PV locations



Source: Heinisch et al. (2023) *Applied Energy*



Solar PV locations

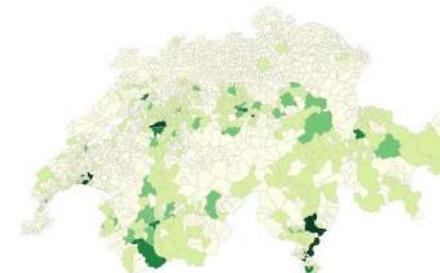
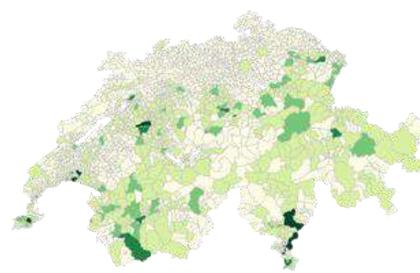
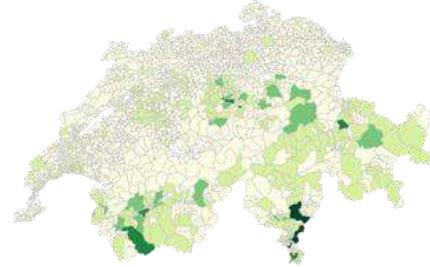
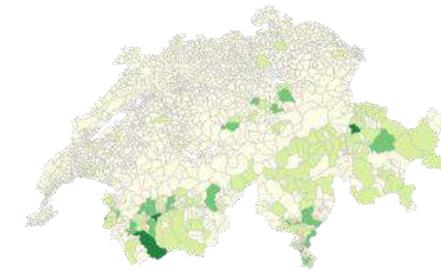
17 TWh (all)

25 TWh (all)

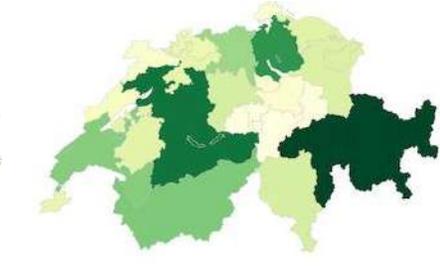
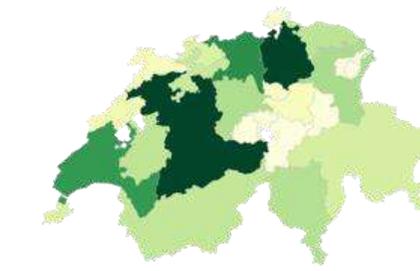
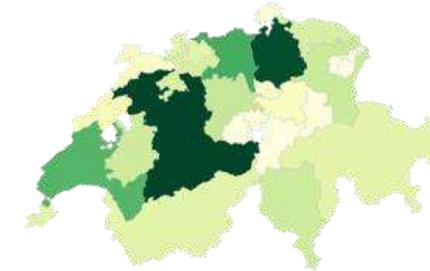
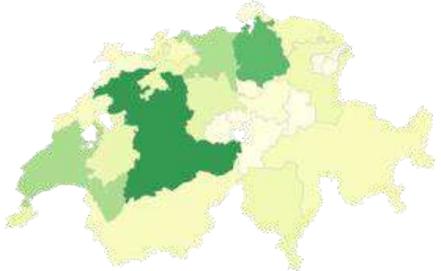
25 TWh (solar)

35 TWh (all)

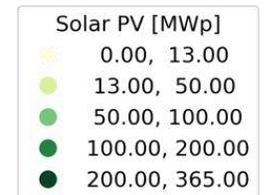
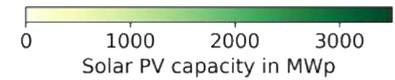
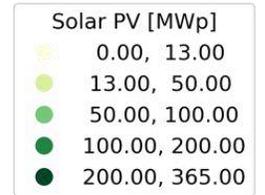
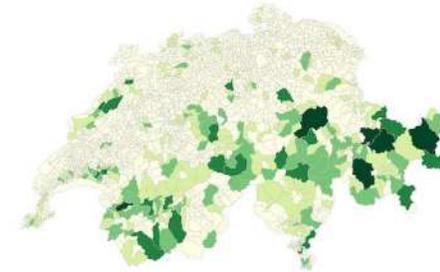
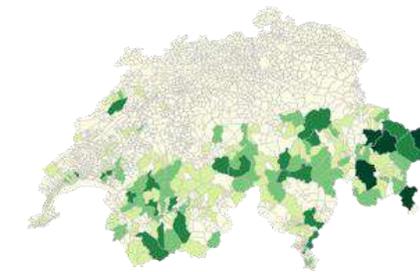
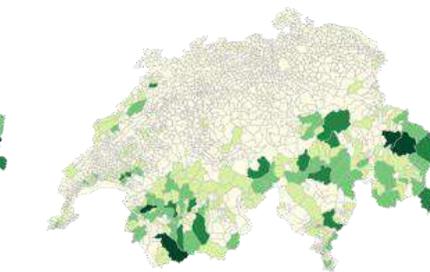
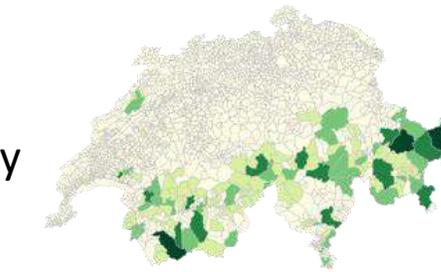
Focus on diversity



Focus on PV with batteries



Focus on productivity



Potential drivers of regional disparities

«Natural»:

- Renewable potential

Techno-economic:

- Profitability,
- energy provider,
- suppliers of solutions/technologies,
- economic situation

Socio-political:

- Social acceptance,
- political ideology and party dynamics,
- institutional framework (e.g., participation)



The EDGE regions



Definition of EDGE regions

- Interdisciplinary definition of 9 categories
- EDGE regions:
 - Urban
 - Alps
 - Midlands

Figure: The EDGE Regions

	Jura	Midlands	Alps
Urban	Yellow	Yellow	Yellow
Suburbs	Green	Green	Pink
Rural	Green	Green	Pink

Note: Yellow = Urban; Pink = Alps, Green = Midlands



The EDGE survey

- An interdisciplinary project
- Fieldwork: August 26 to October 31, 2022
- Number of respondents: 4'948 «Finisher»
- Response rate: 36.6%
- Sample characteristics fit «quite well» the Swiss population's distribution regarding gender, age, education and – to a lesser extent – income
- Test of regional differences based on regression models



ETH

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A-PRIORITY 



Zürich, 25. August 2022

Nationale Betragung: Zukunft der Energieversorgung in der Schweiz

Sehr geehrte(r)

Eine funktionierende Energieversorgung ist für die Schweiz von grosser Bedeutung. Die Meinungen darüber, wie die Energieversorgung in Zukunft sichergestellt werden soll, gehen allerdings auseinander: Sollen die erneuerbaren Energien (Wind-, Solar- und Wasserkraft) ausgebaut werden? Wenn ja, mit welchen Instrumenten? Oder soll die Schweiz weiterhin auf Energiegewinnung aus Kohlekraftwerken setzen?

Die Bevölkerung soll mitreden können! Deshalb führen die Universitäten Bern, Lausanne und St. Gallen sowie die ETH Zürich in Kooperation mit dem Bundesamt für Energie (BFE) eine Betragung durch. Diese richtet sich an die gesamte Wohnbevölkerung der Schweiz ab 18 Jahren und in allen Regionen der Schweiz. Die Umfrage dauert ca. 25-30 Minuten und wurde von der Ethik-Kommission der ETH Zürich bewilligt (EK 2022-N-109).

Durch ein Zufallsverfahren wurden Sie aus dem Stichprobenregister des Bundesamts für Statistik für die Teilnahme an dieser Studie ausgewählt. Die rechtliche Grundlage ist Artikel 13c Absatz 2 der Statistik-erhebungsverordnung (SR 431.012.1). Ihre Meinung zusammen mit der anderer Befragten ergeben so ein gutes Abbild der Schweizer Bevölkerung. Ihre Teilnahme ist also äusserst wichtig!

Bitte füllen Sie den Fragebogen bis zum 31. Oktober 2022 online aus. Zur Umfrage gelangen Sie über untenstehenden Link oder indem Sie den QR-Code scannen.

www.edge.ethz.ch
Passwort: 0H2PL

Wir empfehlen:

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Signora _____



Zurigo, 25 agosto 2022

Sondaggio nazionale: il futuro dell'approvvigionamento energetico in Svizzera

Gentile signora Ginesi,

Un approvvigionamento energetico funzionante è di estrema importanza per la Svizzera. Tuttavia, le opinioni divergono su come garantire l'approvvigionamento energetico in futuro: Le energie rinnovabili (energia eolica, solare e idroelettrica) dovrebbero essere ampliate? Se sì, con quali strumenti? Oppure la Svizzera dovrebbe continuare a fare affidamento sulla produzione di energia da centrali nucleari?

La popolazione deve poter dire la propria opinione! È per questo motivo che le Università di Berna, Lausanne e San Gallo insieme al Politecnico federale di Zurigo realizzano un sondaggio nazionale, in collaborazione con l'Ufficio federale dell'energia (UFE). Tale sondaggio si rivolge all'intera popolazione residente in Svizzera di età pari o superiore ai 18 anni, e in tutte le regioni della Svizzera. Il sondaggio dura circa 25-30 minuti ed è stato approvato dal Comitato etico del Politecnico di Zurigo (EK 2022-N-109).

Lei è stata selezionata/a in modo casuale dal registro di campionamento dell'Ufficio federale di statistica per partecipare allo studio. Come base legale vale l'articolo 13c, capoverso 2, dell'Ordinanza sulle rilevazioni statistiche (RS 431.012.1). La Sua opinione, insieme a quella di tutti gli altri intervistati, fornisce quindi una buona rappresentazione della popolazione svizzera. La Sua partecipazione è dunque estremamente importante.

l'approvisionnement énergétique en Suisse

l'approvisionnement énergétique en Suisse. En revanche, les opinions divergent sur la manière d'assurer l'approvisionnement énergétique à l'avenir. Les énergies renouvelables (éolien, solaire et hydraulique) doivent-elles être renforcées? Si oui, avec quels instruments? Ou la Suisse devrait-elle continuer à miser sur la production d'énergie à partir de centrales nucléaires?

C'est pour cette raison que les Universités de Berne, Lausanne et Saint-Gall, en coopération avec l'Office fédéral de l'énergie, mènent une enquête en coopération avec l'Office fédéral de l'énergie de la population résidant en Suisse, dès 18 ans révolus, dans le but de recueillir l'avis de la population suisse. Votre participation est donc extrêmement importante.

Il registro di campionamento dell'Ufficio federale di statistica è stato selezionato/a in modo casuale dal registro di campionamento dell'Ufficio federale di statistica per partecipare allo studio. Come base legale vale l'articolo 13c, capoverso 2, dell'Ordinanza sulle rilevazioni statistiche (RS 431.012.1). La Sua opinione, insieme a quella di tutti gli altri intervistati, fornisce quindi una buona rappresentazione della popolazione svizzera. La Sua partecipazione è dunque estremamente importante.

122. Vous pouvez accéder à l'enquête



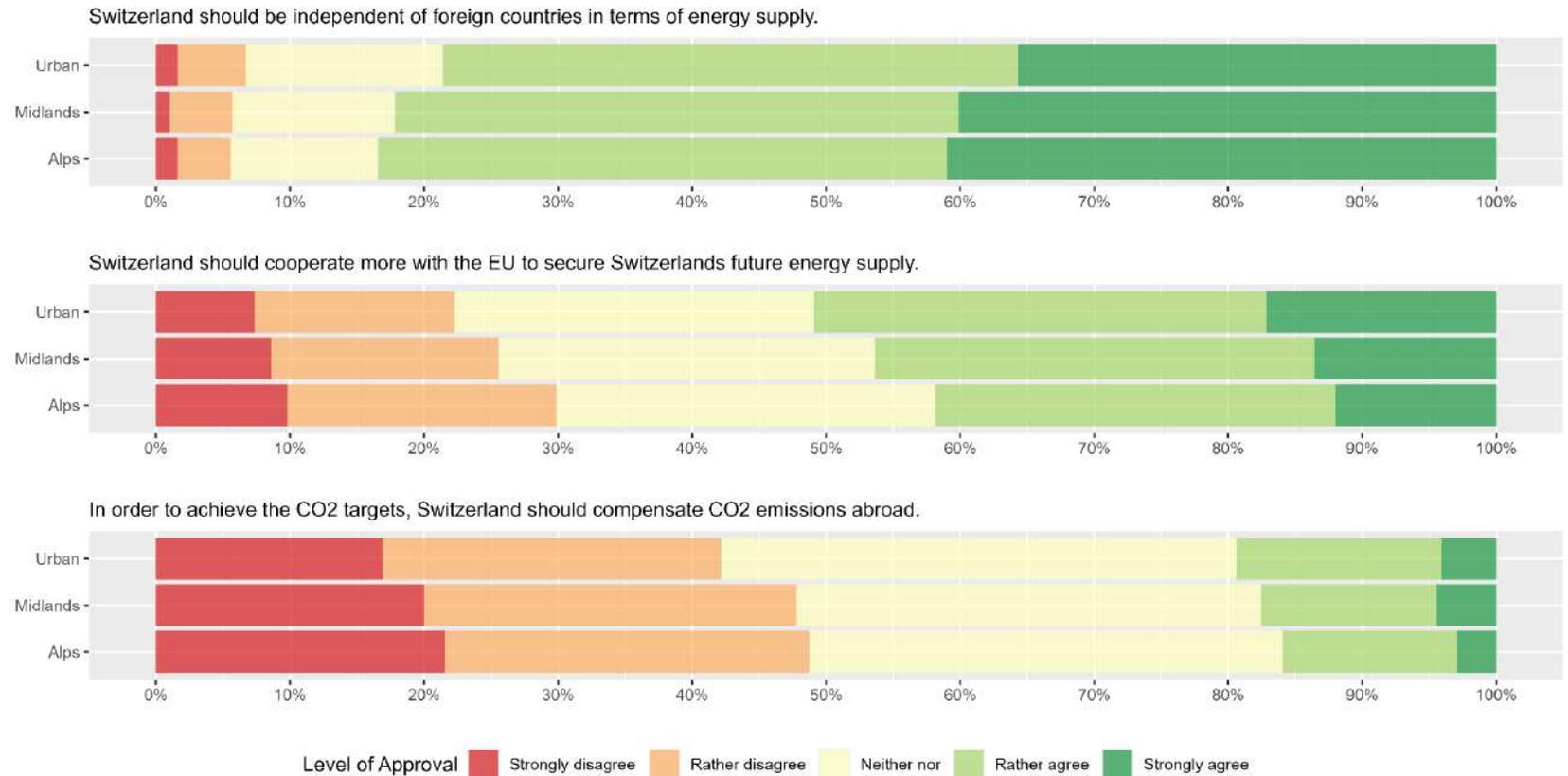
Insights into regional policy acceptance



Energy policy preferences

- Strong relevance of energy independence
- Statistical variation regarding
 - EU Cooperation
 - CO2 Compensation abroad
- However: no real regional split!

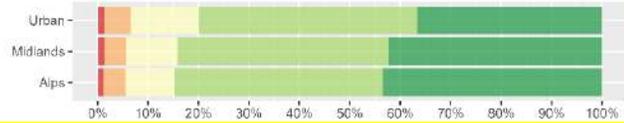
Please indicate how much you agree or disagree with the following statements about Swiss energy policy.



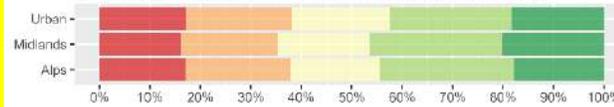
Future energy mix

In order to guarantee Switzerland's electricity supply in the future,...

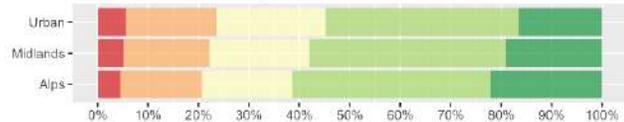
...large hydroelectric power plants, i.e. river power plants or reservoirs, should be upgraded or expanded.



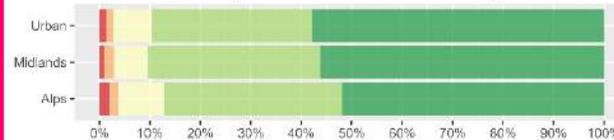
...nuclear power plants should continue to be used.
Info: Nuclear power refers to nuclear electricity production, i.e., the Beznau, Gösgen and Leibstadt power plants in Switzerland.



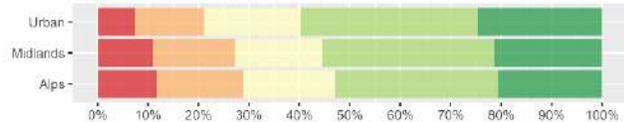
...medium and small rivers and water bodies should be equipped with small hydroelectric power plants.



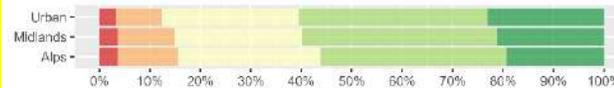
...more solar power systems are to be installed on buildings.



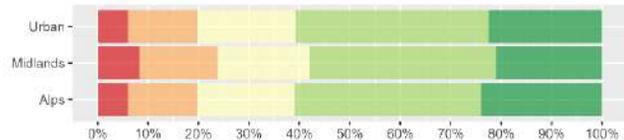
...more solar power systems are to be installed on open spaces (e.g. meadows, fields, etc.).



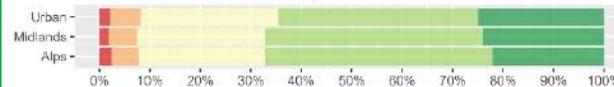
...geothermal plants shall be built. Info: Geothermal energy refers to the use of the earth's heat to produce electricity and heat. Typically, this involves deep drilling to take advantage of the higher earth temperature from deeper layers.



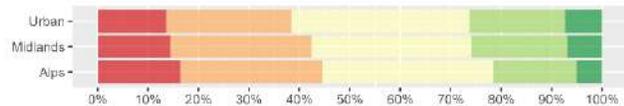
...more wind turbines and wind farms shall be built.



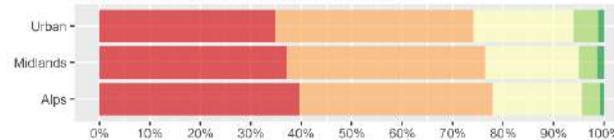
...more biomass combined cycle power plants shall be built. Info: Biomass combined cycle plants produce electricity and heat simultaneously from, in particular, plant and animal products such as waste wood, wood pellets, or biogas.



...gas-fired combined cycle power plants are to be built. Info: Gas-fired combined cycle power plants simultaneously produce electricity as well as heat from natural gas.



...more electricity is to be imported from abroad.



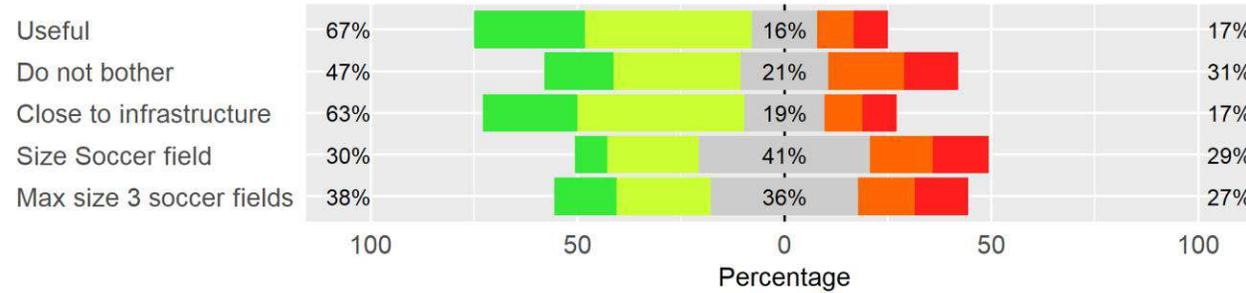
Level of Approval: Strongly disagree, Rather disagree, Neither nor, Rather agree, Strongly agree

- Overall: little variation
- But some statistically significant differences
 - *Urban*: More larger PV, less large hydro
 - *Alps*: more small hydro, less imports, less gas
 - *Midlands*: less wind

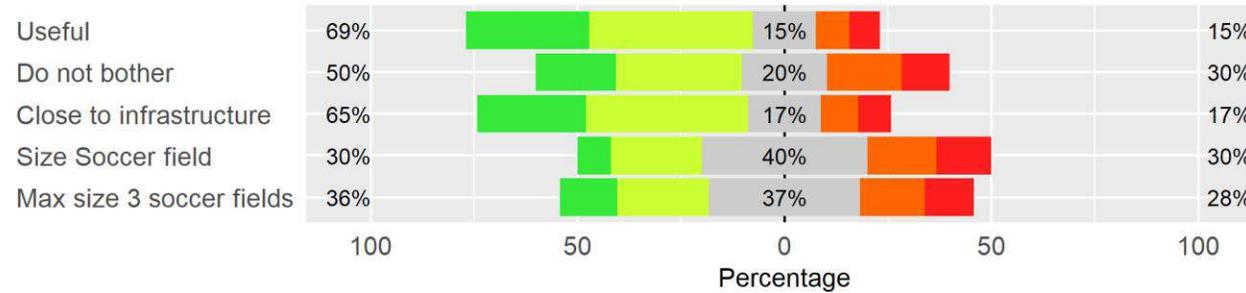
Facilitating open-space PV

- No relevant regional differences!
- Open-space PV is perceived as useful
- It does rather not bother if close to infrastructure
- But also: no enthusiasm!

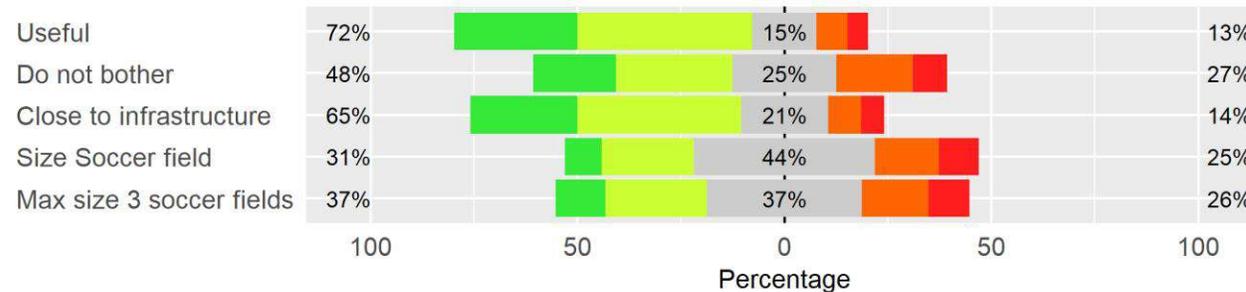
Alps



Midlands



Urban



■ Strongly agree
 ■ Rather agree
 ■ Neither nor
 ■ Rather disagree
 ■ Strongly disagree

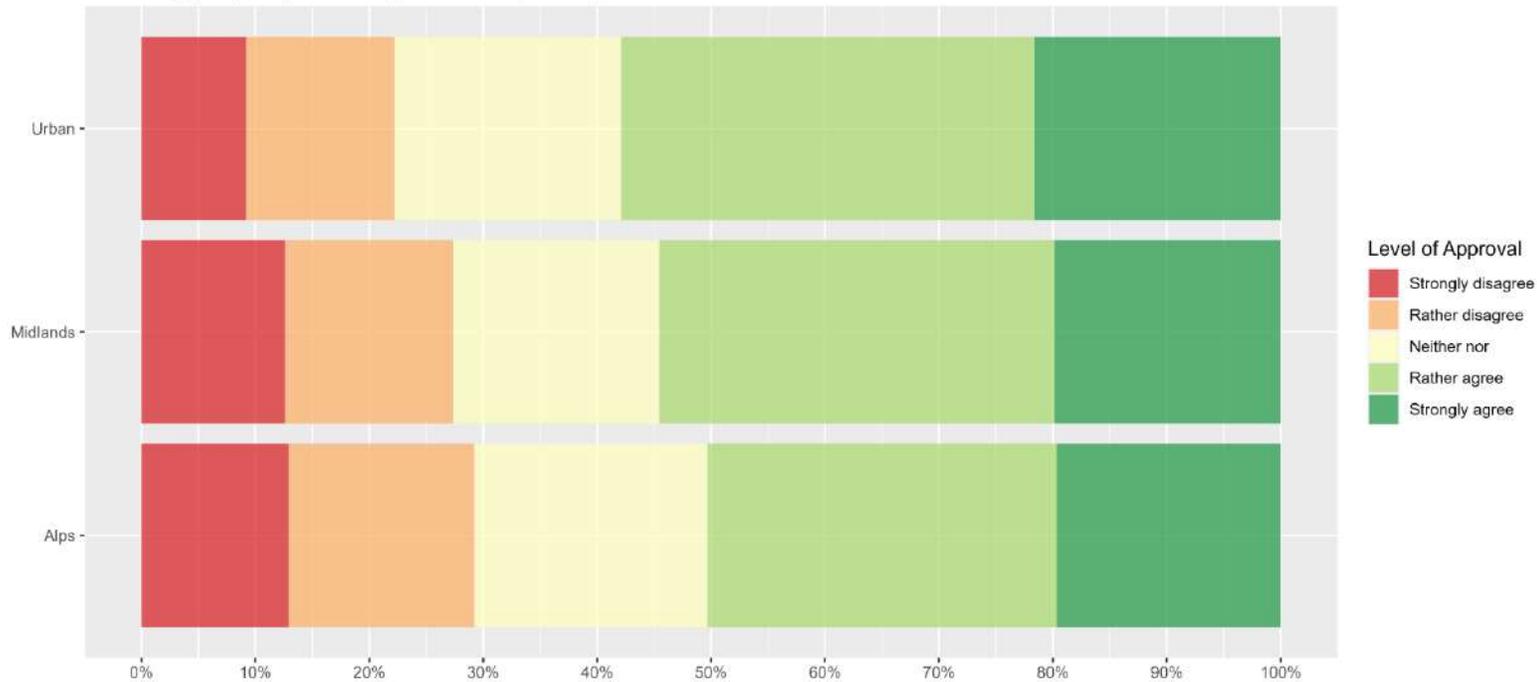


Facilitate PV on farmland

In addition to direct supply from solar power, open space solar power systems on agricultural zones also bring other benefits such as frost protection (see photo)



How strongly do you agree or disagree that solar power systems should be built on farmland?



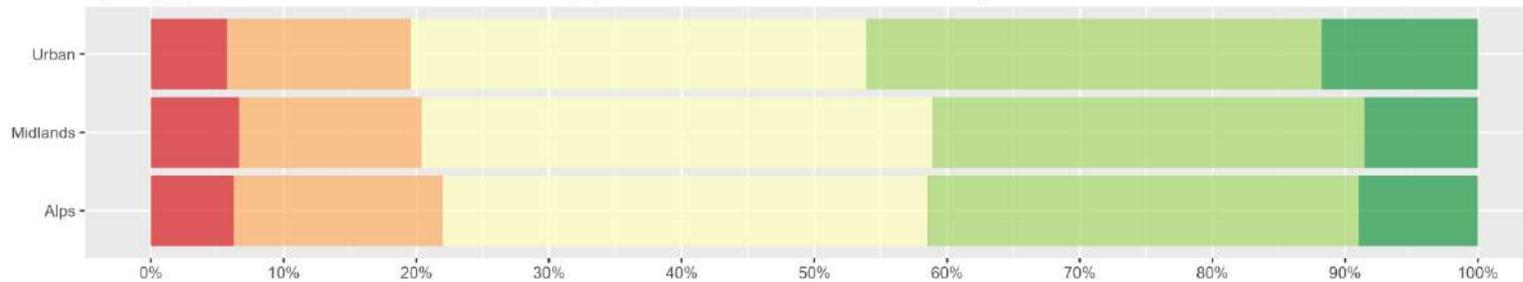
Acceptance is not very high given the positive framing in the survey question!



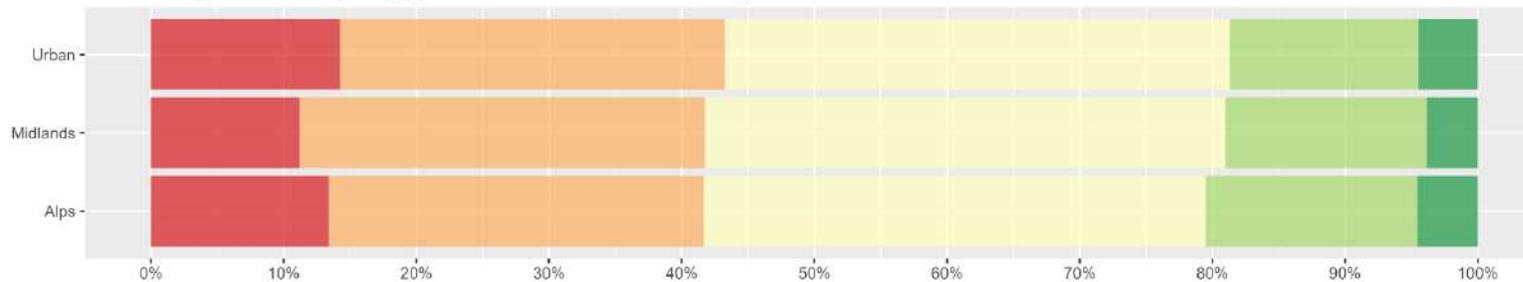
Perception of energy provider

Depending on where you live, a different electricity company is responsible for your power supply.
When you think about your energy provider, how strongly do you agree with the following statements?

My energy provider often addresses the climate issue (e.g., in cover letters or information documents).



I have the impression that my energy provider is not committed to climate protection.



Level of Approval: Strongly disagree, Rather disagree, Neither nor, Rather agree, Strongly agree

In urban areas, respondents perceive the energy provider as more active





Conclusions

- Regional disparities in policy acceptance can matter!
- Our results show – overall – surprisingly little variation!
- This is good news in the first place!
 - No fundamental splits with polarization potential!
- However: regional differences could become more prevalent when moving from socio-political to community or market acceptance!

