RUHR
ECONOMIC PAPERS

What's in It for Us? Moral Foundations, Co-Benefit Narratives and Preferences for Renewable Energy Investments

Zarah Thiel, Ivan Gonzalez-Gordon, and Andreas Löschel

RUHR UNIVERSITÄT BOCHUM RUB RWI #1216

Imprint

Ruhr Economic Papers

Ruhr Economic Paper #1216 "What's in It for Us? Moral Foundations, Co-Benefit Narratives and Preferences for Renewable Energy Investments"

Responsible Editor: Thomas Bauer

Jointly published by

RWI – Leibniz-Institut für Wirtschaftsforschung e.V.
Hohenzollernstr. 1-3, 45128 Essen, Germany

Ruhr-Universität Bochum (RUB), Department of Economics
Universitätsstr. 150, 44801 Bochum, Germany

Technische Universität Dortmund, Department of Economic and Social Sciences
Vogelpothsweg 87, 44227 Dortmund, Germany

Universität Duisburg-Essen, Department of Economics
Universitätsstr. 12, 45117 Essen, Germany

Bergische Universität Wuppertal, Schumpeter School of Business and Economics
Gaußstraße 20, 42119 Wuppertal, Germany

Series Coordination:
RWI Press Office, presse@rwi-essen.de, phone +49 (0) 201 8149-213
RWI – Leibniz Institute for Economic Research, Hohenzollernstr. 1–3, 45128 Essen, Germany
www.rwi-essen.de

RWI is funded by the Federal Government and the federal state of North Rhine-Westphalia.
The Institute has the legal form of a registered association; Vereinsregister, Amtsgericht Essen VR 1784

ISSN 1864-4872 (online)
ISBN 978-3-96973-401-8
DOI https://dx.doi.org/10.4419/96973401

What's in it for us? Moral foundations, co-benefit narratives and preferences for renewable energy investments

Zarah Thiel*†, Ivan Gonzalez-Gordon*, Andreas Löschel*‡

June 2026

Abstract

Scaling of renewable energy (RE) delivers global mitigation and local co-benefits, such as enhanced energy security. Narratives and policies in the energy transition differ in their advocacy of international cooperation or competition, reflecting different priorities in securing co-benefits for one's own country or others. We conduct a pre-registered information provision experiment with 4,000+ representative respondents in Germany and Spain analyzing two novel determinants of locational mitigation preferences: moral universalism—altruism towards strangers versus in-group members—and economic narratives about the energy transition. In our 2x2 design, treatments manipulate the location—home versus developing country—of required investments in renewables and resulting co-benefits. We identify a universalism gap, underpinning the moral universalism literature: universalist individuals show stronger support for foreign RE projects than communitarians. While co-benefit narratives shift average policy preferences, they do not close this moral divide in preferences, even under narratives targeting communitarian audiences. Despite notable differences between Germany and Spain with respect to their technical and institutional environment to scale RE, the effects of the narratives and the association between moral universalism and policy preferences are consistent across both countries. Overall, our results indicate that moral foundations strongly shape locational mitigation preferences, and that communicating positive spillovers to the home country from RE investments abroad is an effective narrative to build support for climate transfers.

Keywords: economic narratives, moral universalism, co-benefits, climate mitigation, renewable energy, survey experiment

*Faculty of Management and Economics, Ruhr University Bochum, Universitätsstraße 150, D-44801 Bochum
†Corresponding author, e-mail: zarah.thiel@rub.de
‡RWI - Leibniz Institute for Economic Research, Hohenzollernstraße 1-3, D-45128, Essen

1 Introduction

Different preconditions for the uptake of renewable energy (RE) systems between countries underscore the need for international cooperation. For example, technological knowledge and public spending on RE are presently concentrated in industrialized nations (IEA 2024; Touboul et al. 2023), whereas developing countries often possess favorable technical potentials for RE deployment (Franke et al. 2024). Thus, maximizing global benefits of climate mitigation from RE expansion implies transferring human and financial capital from developed to developing nations. In addition, such transfers may be motivated by concerns for cross-national climate justice and the broader goal of a "just energy transition" which resonates with many people (Gaikwad et al. 2022, 2025). However, public views on foreign-oriented policies, including climate transfers for sustainable energy development, remain polarized. Existing narratives[1] about the energy transition reflect contrasting views on cooperation versus competition with other nations (Müller 2018) and potentially shape the deployment of energy technologies (Malone et al. 2017). Policymakers, for example, may frame energy partnerships with developing countries either as altruistic efforts to support sustainable development, or as a self-serving strategy to secure domestic co-benefits, for example through diversified energy supply.

This paper investigates co-benefit narratives and their interaction with moral universalism as new potential drivers of preferences for local versus global investments in RE, using a pre-registered information provision experiment with more than 4,000 nationally representative individuals from Germany and Spain. It builds on the idea that individuals' preferences for the domestic versus abroad allocation of RE investments may reflect the universality of their moral concern, i.e., whether they strongly prioritize socially close persons or also care for distant others (Enke 2024). *Moral universalism*—the extent to which people exhibit equal altruism and trust toward strangers and in-group members, such as fellow citizens—has recently emerged as an important predictor of the support of policy domains including development aid, environmental protection, and redistribution (Cappelen et al. 2025; Enke, Rodríguez-Padilla, and Zimmermann 2023). These moral foundations may further interact with perceived local *co-benefits* of energy policies, such as reduced air pollution, technology leadership, or enhanced energy security (Karlsson et al. 2020). Accordingly, individuals who place greater moral weight on in-group members may favor energy policies expected to generate domestic co-benefits, whereas individuals with more universalist values may also support policies whose co-benefits accrue abroad. Because co-benefits can spill over borders, for example through energy trade or technology transfer, they provide an economic rationale linking foreign RE investments to domestic welfare. Communicating how energy transitions abroad can also serve domestic interests may therefore increase public support for climate transfers.

Germany and Spain were selected for this study because both countries are committed to the EU objective of climate neutrality by 2050, including ambitious political goals for the expansion of RE, yet differ in their technical, institutional, and policy environments. On the technical side, for instance, Spain has greater domestic RE potential and may become a future exporter, whereas Germany is expected to remain dependent on energy imports. Nevertheless, Germany exceeds Spain in RE investments, installed RE electricity capacity per capita, and the number of RE patents filed (IRENA 2025). These differences have been linked in part to regulatory volatility in the Spanish energy market (Sorman et al. 2019).

To assess locational preferences for RE investments, respondents are asked to allocate a specified government budget across different RE policy categories. We further capture support or opposition to these policies using standard survey-based measures of policy support. To investigate mechanisms driving locational preferences, we first measure moral universalism through a set of experimentally-validated allocation games. In these tasks, respondents split a hypothetical sum of 100 euros between an in-group member—such as a fellow citizen or someone sharing their religion or language—and a stranger living anywhere in the world. Respondents with a stronger preference for equal allocations between the two individuals are classified as universalists, while those who allocate more to their in-group members are identified as communitarians. We test whether universalist individuals show greater support for foreign energy policies than communitarians.

Second, we study the effect of economic narratives about the energy transition on demand for foreign versus domestic RE investments to shed light on effective communication strategies to foster policy support. Our experiment randomly assigns participants to one of five experimental conditions. All groups receive contextual information on the expansion of renewable energy to combat climate change. Additionally, four treatment groups receive an energy transition narrative based on the literature and energy transition stories told by politicians and business leaders. Our 2x2 factorial design manipulates the location (own country vs. developing country) (i) where RE investments are required and (ii) where

[1] Following Andre, Haaland, et al. (2025) and Barron and Fries (2024), we define narratives as sense-making stories which are shared within groups of people and provide a causal explanation of a series of events. Economic narratives causally relate economic actions and outcomes.

co-benefits resulting from the investment will accrue. We apply lever narratives (Eliaz and Spiegler 2020; Kendall and Charles 2022), which include intermediate variables to establish a causal story on how the investment translates to the co-benefit. We hypothesize that relative support for a policy increases when a narrative emphasizes its co-benefits and that this effect is stronger for home country co-benefits rather than co-benefits accruing abroad.

Finally, we investigate whether the treatment effects are moderated by moral universalism and other individual characteristics. We hypothesize that narratives that emphasize out-group (in-group) co-benefits affect locational preferences more strongly for universalists (communitarians). For example, we contrast narratives that highlight domestic versus foreign co-benefits of RE investments in developing countries to assess whether they can bridge systematic differences between individuals with divergent moral foundations.

Our main findings are as follows. We identify a *universalism gap*, where universalist individuals show stronger support for foreign RE projects than communitarians. This significant association between universalism in altruism and support of foreign-oriented energy policies underpins the moral universalism literature. While co-benefit narratives significantly affect average allocations, they do not attenuate this moral divide in mitigation preferences. Narratives highlighting co-benefits to the home country from climate investments in developing countries increase support for financial transfers to foreign energy projects the most. Despite notable differences between Germany and Spain with respect to their technical and institutional environment to scale RE, the effects of the narratives and the association between moral universalism and policy preferences are consistent across both countries. Overall, our results indicate that moral foundations are strongly connected to locational policy preferences, and that emphasizing positive spillovers to the home country from climate investments abroad is an effective narrative to build support for climate transfers.

Related literature and contribution Our study contributes to understanding preferences for global versus local environmental protection and connects to broader work on the determinants of global co-operative behavior. Previous studies show that social preferences and norms predict support for global climate change mitigation. For example, Jo and Carattini (2021) document a positive association between inherited trust and national CO_2 reductions. Bechtel et al. (2019) identify conditional cooperation and altruism as predictors of support for global climate policy, in addition to economic self-interest (e.g., sectoral exposure).

This line of research is closely related to empirical work on moral foundations and political views (Enke, Fisman, et al. 2024; Graham et al. 2009; Hatemi et al. 2019); see Enke (2024) for a recent review. In particular, this study builds on Enke, Rodríguez-Padilla, and Zimmermann (2023), who show that moral universalism strongly predicts support for broad policy domains across five Western countries, with universalist individuals exhibiting greater support for typically left-wing policies. Extending this evidence across 60 countries, Cappelen et al. (2025) also find that universalism predicts a wide range of left-wing views, although heterogeneously across cultures. Consistently, Andre, Boneva, et al. (2024) observe that universal moral values correlate positively with individual willingness to fight climate change, for a sample of US adults. We add to this literature by testing whether universalism in altruism predicts policy support in a novel domain: the global energy transition. Moreover, to the best of our knowledge, this study is the first to investigate whether moral universalism moderates the impact of economic narratives on policy preferences.

Furthermore, a growing literature shows that perceived co-benefits motivate mitigation and shape locational preferences. Artefactual field experiments by Feldhaus et al. (2026) find that co-benefit information increases donations to mitigation projects. A choice experiment suggests that communicating co-benefits raises voluntary carbon offsets among air travelers (MacKerron et al. 2009). Cross-country evidence in Bain et al. (2016) indicates development and social-capital co-benefits are as influential in driving public, private and financial engagement as beliefs about climate change. Regarding locational preferences, experiments in the US find a home bias in mitigation—strengthened by highlighting local co-benefits (Buntaine and Prather 2018) and reversed when foreign abatements are framed as more efficient (Anderson and Bernauer 2016). Conversely, Diederich and Goeschl (2018) report no home preference among German respondents, who are indifferent between CO_2 mitigation in the European Union or in a developing country. Furthermore, Löschel et al. (2021) show that concerns for local co-benefits explain a substantial share of the willingness to pay for voluntary CO_2 mitigation in China. Likewise, Abildtrup et al. (2024) document that perceived local co-benefits (e.g., improved air quality) correlate with support for domestic policy implementation across five European countries, including Germany and Spain.

By designing information treatments that establish a causal path from public RE investments to co-benefits, we link the literature on co-benefits to a growing body of studies on economic narratives.

Historical and theoretical work suggests narratives can shape policy views (Eliaz and Spiegler 2020; Shiller 2017). Thus far, narratives have been shown to affect economic expectations (Andre, Haaland, et al. 2025), and behavior (Hillenbrand and Verrina 2022; Kendall and Charles 2022), often exceeding the impact of "hard facts" (Alesina et al. 2021; Graeber et al. 2022). Additionally, there is growing interest in the importance of narratives for energy production (Vestrelli et al. 2025) and consumption behavior (Brown 2017). Yet, causal evidence on the effect of narratives on policy preferences remains scarce, and the conditions under which narratives resonate are not well understood. We address this gap by testing whether moral universalism moderates the effect of narratives.

The remainder of this paper is structured as follows. Section 2 presents details of the survey experiment, describing the experimental design and the variables of interest. Section 3 describes the data collection process and provides some basic descriptive statistics. We present our main results in section 4 and discuss them in section 5. Section 6 concludes.

2 Method

This study was registered prior to data collection and ethics approval was obtained in May 2024.[2] This section details the key elements and experimental design embedded in our questionnaire. Figure 1 depicts the survey flow.

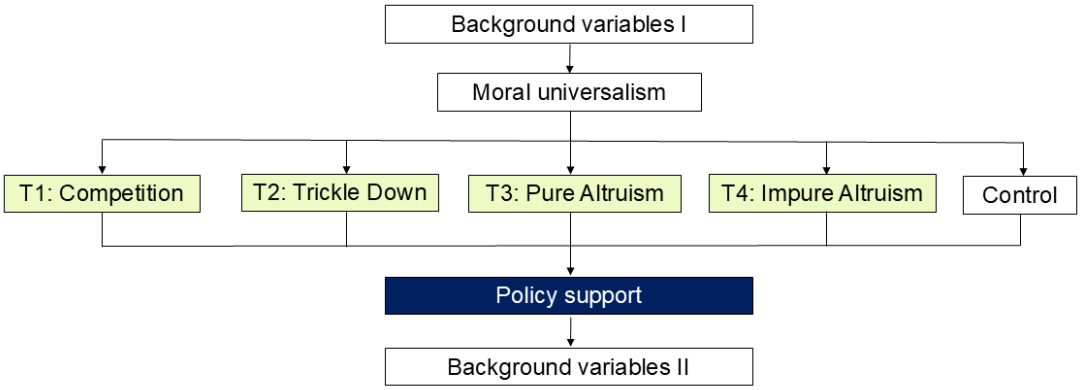


Figure 1: Survey flow

Screening and initial background variables Consistent with our pre-registration, we implement quotas for age, gender, and income to obtain representative samples across these dimensions, and an attention check at the beginning of the survey to screen out inattentive subjects. After survey questions on climate change attitudes and knowledge, based on Dechezleprêtre et al. (2025), we elicit prior beliefs about how much the respondent's country would benefit from investments in RE in their own country and in developing countries.

Moral universalism We measure moral universalism through a set of experimentally validated money allocation games, closely following Enke, Rodríguez-Padilla, and Zimmermann (2023). Respondents are told that they are endowed with a hypothetical sum of 100 euros and asked to allocate this money between two individuals. The participants are asked to assume that these individuals have the same income (with every additional euro yielding the same welfare gain to either person) and that they will not find the identity of the respondent who sent the money. Specifically, we recover the measures of foreign and global moral universalism (ibid.). Global moral universalism is elicited in five allocation tasks with respect to a socially-close person who lives anywhere in the world, such as a person who shares the respondent's religious beliefs, language or ethnicity. To measure foreign moral universalism, the respondents split 100 euros between a stranger who lives in their home country and a randomly selected person who lives

[2]The pre-registration in the AEA RCT Registry (trial 12860) detailed the experimental design, measures of universalism and policy preferences, as well as hypotheses regarding (i) the association between universalism and locational policy preferences (ii) the effects of narrative treatments on these preferences, and (iii) moderators of the treatment effects. A pre-analysis plan, covering the main analyses reported here, was also submitted. We present our preregistered hypotheses alongside the results in section 4 and indicate any analyses that extend beyond the pre-analysis plan. Ethics approval was obtained from the German Association for Experimental Economic Research (certificate number NqbxZsu).

anywhere in the world. The complete questionnaire can be found in appendix E, including all universalism tasks. Before making their allocation decisions, an understanding check verifies that the respondents have understood the instructions of the game.

Following the approach in Enke, Rodríguez-Padilla, and Zimmermann (2021), we create a summary statistic of universalism in altruism, averaging each respondent's allocation decisions.[3] To facilitate the interpretation of results, including interaction coefficients in a heterogeneous treatment analysis, we create a binary universalism indicator for our main specifications. It is equal to one if the respondent has an above-median value in the aggregate universalism measure and zero otherwise. Provided a right-tail distribution of the aggregate moral universalism measure (see appendix fig. 4), the binary indicator equal to one captures respondents with a stronger preference for equal giving to other individuals, regardless of how socially distant they are.

Narrative treatments (experimental design) Participants are randomly assigned to one of five experimental conditions. All groups receive contextual information on the need to expand renewable energy to combat climate change. A control group does not receive additional information, while four treatment groups each receive a different written energy transition narrative. To design the treatments, we first considered the social science and techno-economic literature on energy transition narratives (e.g. Leipprand et al. 2017; Müller 2018; Ohlendorf et al. 2023) and on drivers of RE technology expansion and cost reductions (e.g. Baker et al. 2015; Franke et al. 2024). Second, we reviewed common narratives of German, Spanish and EU politicians and business representatives on the energy transition based on public statements, reports, and speeches from 2019 to 2024.

Our narratives establish a causal story of how an investment in RE translates into the co-benefit of improved RE supply, through mediators such as scaling and learning effects. Our 2x2 factorial design, summarized in table 1, manipulates the location (own country vs. developing country) (i) where RE investments are required and (ii) where co-benefits resulting from the investment will occur.

Table 1: Treatment groups in the 2x2 factorial design

		Investment location	
		Own country	Developing countries
Co-benefit location	Own country	Competitiveness	Impure Altruism
	Developing countries	Trickle Down	Pure Altruism

All narratives follow the same structure and a single manipulation is applied for each treatment. Each narrative text begins with a headline that summarizes a take-home message, stating where RE investments are required and who would predominantly benefit from them. The following sentence specifies an enhanced renewable energy supply as one overarching co-benefit stemming from the investment. Then, the text explains the causal chain from investments to improved energy supply. The main mediators – scaling and learning effects from expanding RE – are also held constant across all treatment groups. Finally, respondents are reminded of the take-home message in a paraphrased way.

To illustrate, appendix fig. 3 shows the *Competitiveness* narrative. It promotes investments in the home country by explaining how such investments can strengthen domestic energy security through scaling and learning effects. This narrative aligns closely with policy strategies like the Spanish Integrated National Energy and Climate Plan, which argues that the energy transition serves as a catalyst for modernizing the domestic economy, increasing competitiveness, and promoting sustainable employment (MITECO 2024). The *Trickle Down* narrative incorporates the concept of innovation spillovers (Baumol 2010) and motivates domestic investments to allow a cascade of benefits to developing countries, for instance through transfer of technological knowledge. Applying energy imports from developing countries as an additional mediator, the *Impure Altruism* narrative accounts for transfers of RE from locations with favorable RE conditions to locations with high energy demand but less favorable conditions, which can then profit from improved RE supply. For example, this idea is reflected in Germany's hydrogen import strategy (Bundesministerium für Wirtschaft und Klimaschutz 2024). Finally, the *Pure Altruism*

[3] We focus on global and foreign universalism measures, considering them particularly relevant for the locational policy preferences. Enke, Rodríguez-Padilla, and Zimmermann (2021, 2023) also applied measures of domestic universalism, with allocations between two individuals within the home country, and of universalism in trust. After a careful consideration of survey complexity and length, we decided to keep the universalism in altruism measure. Furthermore, previous studies found that universalism in altruism and universalism in trust are highly correlated (Enke, Rodríguez-Padilla, and Zimmermann 2023).

treatment explains how investments in developing countries can benefit them through scaling and learning effects abroad. This narrative is inspired by the literature on the effects of foreign direct investment on economic development (e.g. Iamsiraroj 2016) and considerations of cross-national climate justice, where developing countries tend to be more exposed to adverse impacts of climate change despite their lower historical contributions to global warming (Dolšak and Prakash 2022; Mattoo and Subramanian 2012). The questionnaire in appendix E includes the full text of each experimental group.

Policy support: locational RE preferences Our main outcome is relative policy demand for foreign (versus domestic) RE investments, measured via a budget allocation task. Respondents distribute a federal budget of 100 euros million among three mutually exclusive RE policy options with differentiated in-group orientation: (1) public funding for domestic RE projects, (2) public funding for RE projects in developing countries, conditional on energy agreements with these countries, (3) unconditional public funding for RE projects in developing countries. A comparison of policy 1 against policies 2 and 3 captures the trade-off between home versus foreign investment. All the money must be exhausted, either split between the three options or spent entirely on one category.

For complementarity and robustness, we additionally measure support for government spending on the same three policies on a Likert scale from 0 (strongly oppose) to 10 (strongly support). This outcome is used to validate the budget allocation task, accounting for the possibility that some respondents may oppose all renewable energy policies and to consider the tradeoffs of government fund allocations to other policy areas. The survey instructions included a disclaimer acknowledging a certain complexity in the budget allocation task, which should be simplified in the Likert elicitation. The instructions also reminded participants that public funds are scarce and come at a cost through tax contributions and opportunity costs, as the money could be spent on other RE policies or other policy sectors.

Additional background variables Following the treatment stage and outcome elicitation, we measure posterior beliefs about benefits from RE investments. To avoid confusion or experimenter demand effects by asking the same question twice, we follow the idea to assess a related, yet different, outcome in our prior and posterior belief elicitation (Haaland et al. 2023). Then, we elicit age, gender, and income, followed by birthplace and current agglomeration of residence (urbanity). Thereafter, ten-point Likert scales are used to elicit desired income redistribution (Fehr et al. 2022), stated trust towards a stranger (Falk et al. 2022), a rating of efficiency of the national government, and left versus right political leaning.

3 Data

3.1 Data collection

A sample of 4,210 respondents (around 2,100 per country) from Norstat's market research panel completed our online questionnaire between July 26 and August 9, 2024. The period July 26–29, 2024 served as a soft launch to test the questionnaire's technical functionality and collect respondent feedback. As no issues emerged, data collection proceeded seamlessly, and responses from this phase are included in the analysis.

The average time to complete the survey was 15 minutes (median 12 minutes)[4]. We applied stratified sampling, using quotas for age, gender, and net household income. As demonstrated in appendix table 5, the sample is approximately representative of each national population between 17 and 74 years of age in terms of these three characteristics.

3.2 Descriptive statistics

Regarding the elicitation of moral universalism, individuals allocate more than half of the money to their in-group members, on average, but the extent of universalism is subject to heterogeneity. These patterns are consistent with findings in Enke, Rodríguez-Padilla, and Zimmermann (2021, 2023). However, in our data, the distribution is less skewed to the left and the mode at 50–indicating an equal division of the money between the in-group and out-group member–is more pronounced. Appendix fig. 4 displays histograms of the moral universalism measures.

As a baseline for people's locational preferences, we consider relative support for our three RE policy categories in the *Control* group. Respondents who are not exposed to one of our energy transition narratives express the highest support for domestic RE projects, allocating just more than half of the

[4]The average time is calculated based on the Spanish sample as the time was not recorded for the German sample due to a technical error. However, pre-tests of the questionnaire suggested a similar duration for the German and Spanish versions.

given government budget to this policy category. This is followed by transfers to developing countries conditional on energy trade agreements. Subjects in the *Control* group express the lowest support for unconditional giving to developing countries, but still allocate around one-fifth of the budget to this option, on average. Appendix B.2 provides descriptive statistics on the average support measured via the budget allocation task (table 7) and Likert scale measurements (table 8) for each policy category and experimental condition. In appendix table 6, we provide additional descriptive statistics of background characteristics of our sample and demonstrate that the experimental groups are balanced in terms of these observables (including moral universalism).

4 Results

In this section, we analyze the role of universalism for policy preferences and narrative effects using an OLS regression framework, which we also apply for heterogeneity analyses. Our primary outcome is relative support for foreign versus domestic RE investments, measured as the share of a 100 euros million budget allocated to RE projects in developing countries. Appendix D.1 shows that the results are robust to treating this money allocation as a censored dependent variable. For complementarity and robustness, we measure support for government spending across the three RE policy categories on a Likert scale. Appendix D.2 demonstrates that the main findings are largely replicated with this measure.

4.1 Moral universalism and locational RE preferences

Moral universalism in altruism measures the degree to which individuals show equal altruistic behavior towards socially close in-group members, such as people who share the same customs or nationality and strangers. Our narrative treatments relate to this concept by highlighting co-benefits from RE investments either for the respondents' home country (understanding fellow citizens as an in-group) or for developing countries (the out-group). Building on prior evidence that links moral universalism to support for broad policy domains (Enke, Rodríguez-Padilla, and Zimmermann 2021, 2023), we test whether this association extends to locational preferences in the energy transition. Specifically, we hypothesized that universalist individuals demand more foreign-oriented RE policies than communitarians, who share a greater concern for their in-group members.

In this section, we present results based on the aggregate measure of moral universalism as defined in section 2, pooling the data for all experimental groups. To facilitate interpretation, the main explanatory variable is an indicator equal to one for respondents with an above-median moral universalism score and zero otherwise. The results are robust to applying a continuous universalism measure (see appendix D.3.2).

As displayed in table 2, moral universalism is positively associated with the amount of allocated to foreign RE projects. Without controlling for further background characteristics, respondents who are in the upper half of the distribution of our moral universalism measure allocate 11 million euros more to RE projects in developing countries than individuals with more communitarian traits, on average. The association persists even when accounting for potential confounders such as country of birth. When considering the two subcategories of foreign-oriented RE policies separately, i.e. providing public funds for RE projects in developing countries (i) conditional on energy trade agreements, or (ii) unconditionally, we observe that moral universalism is positively associated with both categories, but stronger for unconditional than conditional investments abroad (see appendix D.3.1). We thus conclude:

Result 1 (Moral universalism predicts locational preferences) *Individuals who display higher universalist behavior show a greater demand for foreign-oriented RE policies than communitarians.*

Additional data from the survey questions underpin ideological differences associated with moral universalism. For example, universalist individuals share attitudes in favor of development aid, climate justice, and redistribution. Furthermore, universalists report higher levels of general trust, which supports a large body of literature suggesting a strong relationship between trust and (global) cooperative behavior (Carattini and Roesti 2025; Jo and Carattini 2021). In turn, we observe that communitarian individuals express a higher willingness to return a favor (positive reciprocity), which some studies link to conditional cooperation behavior (see e.g. Bechtel et al. 2019). See appendix table 11 for an overview of significant differences in attitudes and beliefs by the universalism subgroups.

Table 2: Regression of money allocated to foreign RE on moral universalism

	Dependent variable:			
	Million euros allocated to foreign RE projects			
	(1)	(2)	(3)	(4)
Constant	45.996***	43.524***	38.362***	45.167***
	(0.521)	(0.892)	(2.449)	(2.477)
Above-median moral universalism	11.198***	11.420***	8.735***	8.578***
	(0.739)	(0.731)	(0.748)	(0.736)
Treatment indicators		Yes	Yes	Yes
Controls			Yes	Yes
Country FE				Yes
Observations	4,209	4,209	4,025	4,025
R^2	0.052	0.074	0.139	0.167
Adjusted R^2	0.052	0.073	0.135	0.164
F Statistic	229.896***	67.157***	43.038***	50.293***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. The main explanatory variable is a moral universalism indicator as defined in section 2. Controls include age, net household income (in quintiles), redistribution preferences, government efficiency belief, and indicators for being male, being born in the data collection country, living in an urban area.

4.2 Narrative effects on locational policy preferences

In this section, we analyze the effects of our narrative treatments on locational preferences for RE investments.

4.2.1 Co-benefits and RE investment preferences

Our treatments specify co-benefits from domestic (*Competitiveness*, *Trickle Down*) or foreign (*Pure Altruism*, *Impure Altruism*) investment in RE. Our pre-registered hypothesis is based on the assumption that policy support is driven, among others, by the perceived co-benefits of the policy in question (building on previous research, e.g. Abildtrup et al. 2024). Specifically, we hypothesized that relative support for investments in domestic or foreign RE is higher among subjects who are exposed to a narrative that emphasizes co-benefits of the respective policy as compared to the *Control* group that only receives contextual information.

In support of this hypothesis, we observe that respondents exposed to a narrative that explains how RE investments in developing countries can lead to energy security co-benefits, allocate a larger share of the 100 million euros budget to foreign RE projects compared to the *Control* group. As displayed in table 3, the average treatment effect (ATE) is stronger in magnitude for the *Impure Altruism* treatment (ATE around 8 million euros) than the *Pure Altruism* treatment (ATE around 5.5 million euros). The first emphasized co-benefits from foreign RE investment for the home country, while the latter underlined the same co-benefits for developing countries.

Table 3: Impure Altruism and Pure Altruism narrative effects on money allocated to foreign RE

	Dependent variable:		
	Million euros allocated to foreign RE projects		
	(1)	(2)	(3)
Constant	49.301***	37.718***	44.940***
	(0.813)	(3.624)	(3.700)
Impure Altruism	7.508***	8.164***	7.989***
	(1.162)	(1.131)	(1.118)
Pure Altruism	5.207***	5.828***	5.548***
	(1.160)	(1.132)	(1.118)
Controls		Yes	Yes
Country FE			Yes
Observations	2,489	2,375	2,375
R^2	0.017	0.118	0.140
Adjusted R^2	0.017	0.113	0.134
F Statistic	22.034***	22.593***	25.586***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. Reference group: Control (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

Result 2 (Co-benefits matter) *Communicating co-benefits from climate investments abroad increases support for foreign RE projects. The treatment effect is strongest when the narrative emphasizes domestic co-benefits.*

This finding implies that the narratives establish a causal link[5] between the policy measure and the co-benefit, positively affecting the share of government funds allocated to foreign RE projects. The result aligns with cross-country evidence that individuals support climate policies more when informed about how the policies work and who can benefit from them (Dechezleprêtre et al. 2025).

Although we also observe effects in the expected direction for *domestic* RE projects, these effect sizes are smaller and at best weakly significant (see appendix table 12). One potential explanation is that respondents already expected high co-benefits from domestic investments in RE prior to the narrative treatment, while they anticipated fewer benefits from foreign RE investments (see appendix fig. 5).

4.2.2 Location of co-benefits and RE preferences

We further hypothesized that relative support for domestic or foreign RE investment is higher among subjects who are exposed to a narrative that emphasizes the in-group benefits (versus the out-group benefits) of the respective policy. The hypothesis builds on previous evidence from western countries suggesting that most individuals show stronger altruistic behavior towards socially close individuals (Enke 2024; Enke, Rodríguez-Padilla, and Zimmermann 2021, 2023). Consequently, we expected a higher relative support for domestic RE investments from the subjects treated with the *Competitiveness* narrative – emphasizing home country co-benefits– compared to the *Trickle Down* narrative which highlights co-benefits for developing countries.

We observe in table 4 that relative support for domestic RE projects in the *Competitiveness* group is around 6% higher than in the *Trickle Down* group, on average. This difference is statistically significant and robust to controlling for sociodemographic background, political leaning, and country fixed effects. We observe a similar, albeit slightly smaller, effect when contrasting allocations to foreign RE projects between the *Impure* and the *Pure Altruism* groups (see appendix table 13). These groups learned about energy security co-benefits in their home country versus in developing countries, respectively. We summarize these findings as follows.

[5]Appendix C.2.2 provides additional evidence in favor of the causal link established by the narrative treatments.

Result 3 (In-group benefits matter more) *Support for RE projects is stronger when narratives emphasize home country co-benefits rather than co-benefits accruing abroad.*

Table 4: Competitiveness (vs. Trickle Down) narrative effect on money allocated to domestic RE

	Dependent variable:		
	Million euros allocated to domestic RE projects		
	(1)	(2)	(3)
Constant	49.603***	59.186***	50.510***
	(0.849)	(4.431)	(4.508)
Competitiveness	3.240***	3.661***	3.880***
	(1.219)	(1.187)	(1.167)
Controls		Yes	Yes
Country FE			Yes
Observations	1,720	1,646	1,646
R^2	0.004	0.111	0.141
Adjusted R^2	0.004	0.104	0.134
F Statistic	7.063***	15.729***	19.137***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. Reference group: Trickle Down (data of other groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

4.3 Narrative effect heterogeneity

Applying heterogeneity analysis, we investigate whether moral universalism and other individual factors moderate the effect of narratives on domestic or foreign co-benefits from RE investments in shaping locational RE preferences.

We pre-registered the hypothesis that narratives that communicate co-benefits for developing countries (*Trickle Down*, *Pure Altruism*) affect locational preferences more strongly for universalist individuals compared to communitarians. Conversely, communitarian individuals were expected to respond more strongly to the *Competitiveness* and *Impure Altruism* narratives that stress domestic co-benefits.

For a descriptive overview, fig. 2 displays the average amount of the 100 million euros budget that respondents with an above-median and lower moral universalism score allocated to foreign RE projects for each experimental condition. It depicts an *universalism gap* in locational RE preferences that persists regardless of the narrative to which the respondents are exposed. In line with this picture, a subgroup analysis that separately estimates the treatment effects for the high- and low-universalism stratum shows that there are similar treatment patterns for individuals with above-median and lower moral universalism (see appendix table 20). This finding contrast with Enke, Rodríguez-Padilla, and Zimmermann (2023), who show that the left–right divide on redistribution, environmental protection, and foreign aid diminishes or even reverses when policies are framed in more in-group–oriented, less universalist terms.

At most, we observe some evidence aligned with our hypothesis concerning the *Competitiveness* condition. While universalists in this condition do not allocate significantly more to domestic projects than universalists in the *Control* group, the *Competitiveness* narrative increases allocations to domestic RE projects among communitarians (see appendix table 20). According to a regression-based moderation analysis, the average effect of the *Competitiveness* narrative on funds allocated to domestic RE projects is around 3.6 million euros higher for communitarians than for universalists (see appendix table 21). This result suggests a *confirmation effect*: Communitarian individuals have higher baseline support for domestic RE investments, thus welcoming a narrative that justifies and confirms their preference by highlighting in-group co-benefits. Supporting this interpretation, we also find that prior belief about

domestic benefits is a significant moderator of the *Competitiveness* treatment (see appendix table 16)[6]. We summarize these findings as follows.

Result 4 (Narratives do not close the universalism gap) *Emphasizing domestic co-benefits of foreign RE investments and foreign co-benefits of domestic investments does not meaningfully attenuate differences in locational RE preferences between universalists and communitarians.*

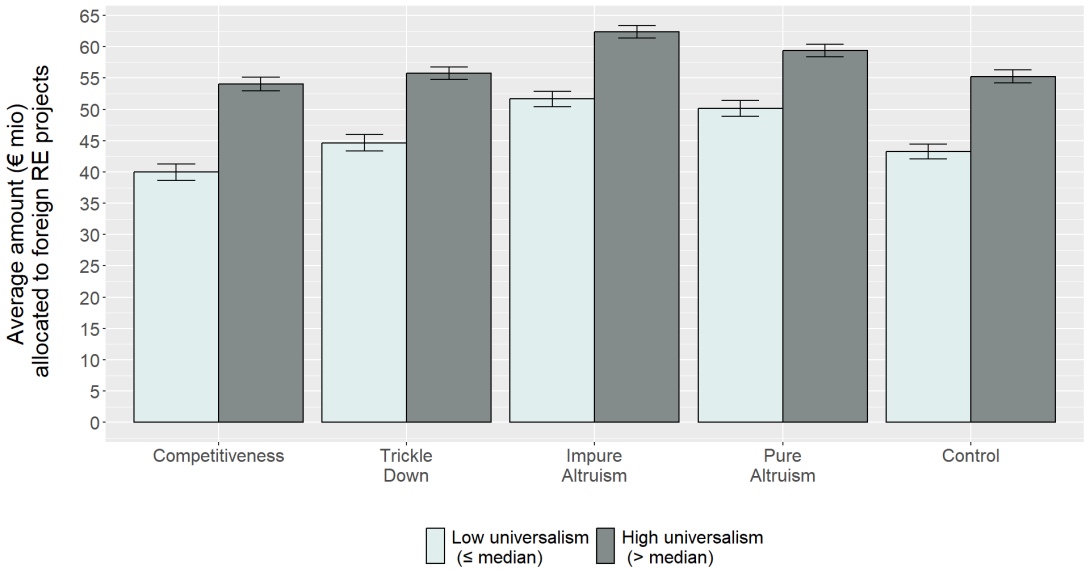


Figure 2: Allocation to foreign RE projects by universalism subgroups and experimental conditions

In addition, we pre-registered to test for treatment moderation by variables that are conceptually related to moral universalism (such as political leaning and altruism), as well as by climate change beliefs and sociodemographic variables.[7] Overall, moderation analysis of social preferences widely aligns with our findings for moral universalism, while perceptions about investment efficiency and institutions do not moderate narrative effects on locational policy preferences. To assess heterogeneity of the treatment effects across these and sociodemographic variables, we estimate separate OLS regressions, each interacting the treatment indicator with one potential moderator. The tables 16 to 19 in the appendix report the corresponding estimates.

5 Discussion

Although our main outcome is a stated measure with known limitations (e.g., potentially susceptible to experimenter demand effects), we are confident that it provides insights into the relative policy preferences of the respondents. Our elicitation of policy preferences is designed to mimic trade-offs between different policy domains which policymakers generally translate to respective public budget allocations. Additional survey data (including an open feedback question) do not suggest that respondents perceived the money allocation task as artificial, with 88% of respondents stating that they were at least somewhat confident in their allocation decision. Moreover, the main results are widely consistent with the support elicited with a Likert scale that is commonly used to measure policy support in the literature (see e.g. Alesina et al. 2021; Enke, Rodríguez-Padilla, and Zimmermann 2023).

The interest of this study was to understand relative demand for broad climate policy categories, but we recognize that the specific design of the policy measures will be relevant to public acceptance (see e.g.

[6] As pre-registered, we also measure posterior beliefs about the benefits of investing in renewable hydrogen (after treatment manipulations) and compare them with prior beliefs about general RE investments. Roughly half the sample differed in their stated prior and posterior beliefs, but no statistically significant differences in belief updates emerged between groups (see appendix table 9). To mitigate experimenter demand effects, we did not elicit the same belief outcome twice (Haaland et al. 2023). Still, as respondents generally perceive lower benefits from renewable hydrogen than from RE in general (as observed in the Control group), and prior beliefs significantly moderated narrative effects on policy demand, this paper refrains from further analysis of belief updates.

[7] Motivated by conference comments, we additionally test for interactions by variables such as perceived institutional strength or potential of RE scaling and technolgy transfer.

Gaikwad et al. 2025).

One concern regarding the narrative effects presented in this study may be that our results could be driven by different perceptions of the credibility of information between the treatment groups. To rule this out, appendix table 10 shows that there are no major differences between the experimental groups in terms of the perceived credibility of information provided in our study. In real-world contexts, the credibility and effect of narratives might depend on the source of information, medium, and communicator of the message, which we did not make explicit in our design. In addition, all narratives feature energy security as the same co-benefit. We decided this in order to ensure that we could isolate only the impact of our variation dimensions (location of RE investments and co-benefits) on policy preferences. It is possible that the results vary with other co-benefits such as health, or geopolitical stability. A recent study by Feldhaus et al. (2026) finds that social and environmental co-benefits are most effective in mobilizing individual contributions to climate mitigation. Furthermore, our study setup does not allow us to test the long-term effects of the treatments. However, previous studies indicate that story-style information affects people more persistently than statistical facts (Graeber et al. 2022).

Our data refer to two democratic western countries. While we observe consistent patterns and effects between Germany and Spain despite differences in their technical and institutional conditions, it cannot be ruled out that the results for nations with a different political system or religious background may differ. Using survey data from 60 countries, Cappelen et al. (2025) demonstrate how universalism and its relation to policy views are linked to the cultural, political, economic, and religious characteristics of different societies.

6 Conclusion

This pre-registered survey experiment, conducted with 4,210 households from a representative online panel in Germany and Spain, offers the first experimental evidence on novel drivers of locational preferences in energy policy, demonstrating how moral universalism and co-benefit narratives can shape support for pathways toward net-zero emissions.

Using a series of experimentally validated money allocation tasks, we measure moral universalism in the sense of altruism as a function of social distance. Furthermore, our randomized controlled trial assigns respondents to a pure control group or one of four narrative treatments. Each narrative presents a causal link between a renewable energy investment decision and improved energy security. Following a 2x2 factorial design, the narratives vary the location (domestic or foreign) of required RE investments and the location of the resulting co-benefit. Support for different RE policies is elicited via a budget allocation task and a Likert scale.

We observe that narratives on co-benefits significantly affect average locational RE preferences. Communications that causally link public RE investment in developing countries with co-benefits for the giving country, such as improved energy supply, are most effective in increasing relative support for foreign-oriented RE policies. Communitarians, who care more about socially close individuals, prefer domestic investments in RE, while universalists, who do not (or less) discriminate by social distance, support foreign RE projects more strongly. Heterogeneity analysis shows that the narrative effects differ only partly by moral universalism and related social preferences such as altruism, trust, and justice concerns. Highlighting in-group co-benefits from domestic RE investments tends to increase the observed *universalism gap* in policy demand, increasing relative support for these investments among communitarians only. In turn, narratives on co-benefits from foreign renewable energy policies mobilize both universalists and communitarians.

Consequently, framing RE policies as more universalist or communitarian does not strongly attenuate the moral divide in mitigation preferences, at least in the short term. The effects and patterns are robust across two Western countries with different techno-economic and institutional preconditions for the energy transition. Our findings also remain consistent for different estimation approaches, as well as after controlling for sociodemographic background and general political views.

Overall, this study underpins and links literature on moral universalism, economic narratives, and the role of co-benefits for environmental policy views. The results highlight that moral convictions matter strongly for preferences for local versus global RE investments. Still, our findings imply that communicating co-benefits of climate policies such as energy security improvements can increase public support for these policies compared to only highlighting the benefit of climate mitigation. In particular, foreign climate investments may be promoted to domestic audiences by highlighting their domestic gains.

Future research could examine the scalability and persistence of narratives across communication channels and over long time horizons. Another extension would be to investigate how the interaction

between universalism, perceived co-benefits, and RE support unfolds in non-Western and developing contexts, where cultural and institutional conditions for climate cooperation differ.

Appendix

A Narrative example

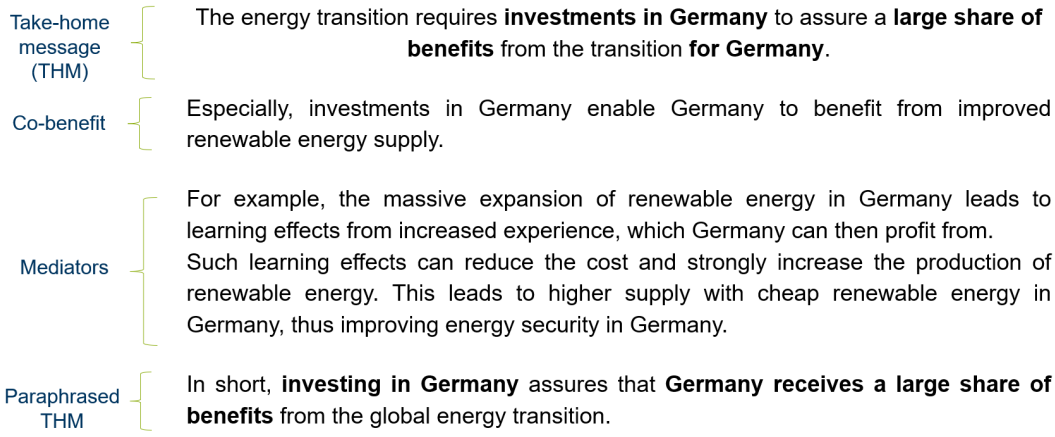


Figure 3: Competitiveness treatment

Notes: Competitiveness narrative treatment in the German survey. The original text was in German. The explanations of the structure on the left (such as "Take-home message (THM)") were not shown to participants.

B Descriptive statistics

B.1 Sample characteristics

Representativeness

Table 5: Representativeness of German and Spanish samples

Germany		
	Share in	
Variable	Population	Sample
Gender		
Male	0.494	0.501
Female	0.506	0.494
Diverse or no indication	not reported	0.005
Age		
15-29 years	0.211	0.180
30-39 years	0.176	0.180
40-49 years	0.165	0.180
50-59 years	0.193	0.220
60-74 years	0.255	0.240
Income		
Less than 1.500 EUR	0.18	0.18
1,500 until below 2,500 EUR	0.26	0.26
2,500 until below 3,500 EUR	0.19	0.18
3,500 until below 5,000 EUR	0.19	0.18
5,000 EUR or more	0.18	0.17
No indication	-	0.04
Spain		
	Share in	
Variable	Population	Sample
Gender		
Male	0.490	0.490
Female	0.510	0.509
Other	not reported	0.001
Age		
15-29 years	0.192	0.190
30-39 years	0.170	0.175
40-49 years	0.221	0.220
50-59 years	0.200	0.200
60-74 years	0.216	0.215
Income		
Until 1000 EUR	0.11	0.11
1000 until 1500 EUR	0.17	0.17
1500 until 2000 EUR	0.15	0.15
2.000 until 3.000 EUR	0.29	0.29
3000 or more	0.28	0.24
No indication	-	0.04

Notes: The population shares for Germany are taken from the 2023 and 2024 Microcensus (Statistisches Bundesamt 2025). The values for Spain are based on data from the 2021 census of the Instituto Nacional de Estadística (2025). The shares in the third column refer to the samples of individuals in Germany (N=2,101) and Spain (N=2,108) who completed the survey experiment.

Table 6: Integrity of randomization

	Mean						p-value									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Variable	Full sample	Control	Competitive-ness	Trickle Down	Impure Altruism	Pure Altruism	(2) vs. (3)	(2) vs. (4)	(2) vs. (5)	(2) vs. (6)	(3) vs. (4)	(3) vs. (5)	(3) vs. (6)	(4) vs. (5)	(4) vs. (6)	(5) vs. (6)
Age	46.02	45.53	45.65	46.12	46.31	46.52	0.87	0.42	0.30	0.18	0.51	0.37	0.23	0.79	0.58	0.78
Male	0.50	0.48	0.48	0.50	0.49	0.52	0.88	0.35	0.57	0.08	0.44	0.68	0.12	0.73	0.40	0.25
Income Q1	0.15	0.16	0.14	0.16	0.17	0.13	0.48	0.85	0.49	0.09	0.37	0.17	0.32	0.60	0.06	0.02
Income Q2	0.22	0.23	0.23	0.22	0.20	0.24	0.86	0.43	0.16	0.84	0.55	0.22	0.70	0.52	0.33	0.11
Income Q3	0.17	0.16	0.17	0.19	0.17	0.15	0.49	0.11	0.67	0.73	0.36	0.80	0.31	0.24	0.05	0.45
Income Q4	0.24	0.24	0.26	0.23	0.24	0.25	0.47	0.74	0.80	0.60	0.29	0.34	0.85	0.94	0.39	0.44
Income Q5	0.21	0.21	0.20	0.20	0.23	0.23	0.55	0.60	0.51	0.34	0.94	0.22	0.12	0.24	0.14	0.76
Employed	0.70	0.69	0.71	0.71	0.67	0.71	0.32	0.32	0.38	0.19	0.98	0.06	0.75	0.06	0.73	0.03
Bachelor's degree or higher	0.43	0.43	0.43	0.41	0.44	0.46	1.00	0.50	0.64	0.24	0.50	0.64	0.25	0.25	0.07	0.50
Lives in urban area	0.56	0.58	0.57	0.56	0.56	0.55	0.60	0.26	0.32	0.19	0.55	0.64	0.43	0.90	0.84	0.75
Moral Universalism (aggregate)	42.90	43.25	43.18	42.95	42.64	42.44	0.94	0.71	0.46	0.32	0.77	0.50	0.35	0.71	0.53	0.81

Notes: Columns (1) to (6) show sample means for the denoted subgroups. Columns (7) to (16) show p-values from t-tests that compare the mean of each variable between two experimental conditions. For example, column (7) shows the p-values from a t-test comparing the mean of the respective variable between respondents in the Control group and the Competitiveness treatment group.

B.2 Policy preferences

Table 7: Average budget allocation by policy category and experimental group

			Narrative treatments			
Amount allocated to	Full sample	Control	Competitive-ness	Trickle Down	Impure Altruism	Pure Altruism
Domestic RE	48.4 (24.64)	50.7 (23.86)	52.84 (25.34)	49.49 (25.41)	43.19 (23.64)	45.49 (23.65)
Foreign RE	51.6 (24.64)	49.3 (23.86)	47.16 (25.34)	50.51 (25.41)	56.81 (23.64)	54.51 (23.65)
Foreign RE, conditional on energy trade agreements	30.36 (19.66)	28.25 (17.55)	28.46 (19.82)	29.55 (20.74)	34.13 (19.67)	31.6 (19.79)
Foreign RE (unconditional)	21.24 (16.49)	21.06 (16.16)	18.7 (15.94)	20.96 (16.97)	22.68 (16.28)	22.9 (16.73)

Note: Standard deviation in parentheses.

Table 8: Average support (Likert) by policy category and experimental group

Support (0-10 Likert) for	Full sample	Control	Competitive-ness	Trickle Down	Impure Altruism	Pure Altruism
Domestic RE	7.47 (2.28)	7.65 (2.11)	7.68 (2.29)	7.5 (2.33)	7.22 (2.24)	7.3 (2.39)
Foreign RE, conditional on energy trade agreements	5.99 (2.61)	5.97 (2.55)	5.73 (2.65)	5.89 (2.62)	6.2 (2.54)	6.19 (2.64)
Foreign RE (unconditional)	4.96 (2.77)	4.97 (2.71)	4.65 (2.79)	4.85 (2.77)	5.14 (2.73)	5.2 (2.8)

Note: Standard deviation in parentheses.

B.3 Moral Universalism

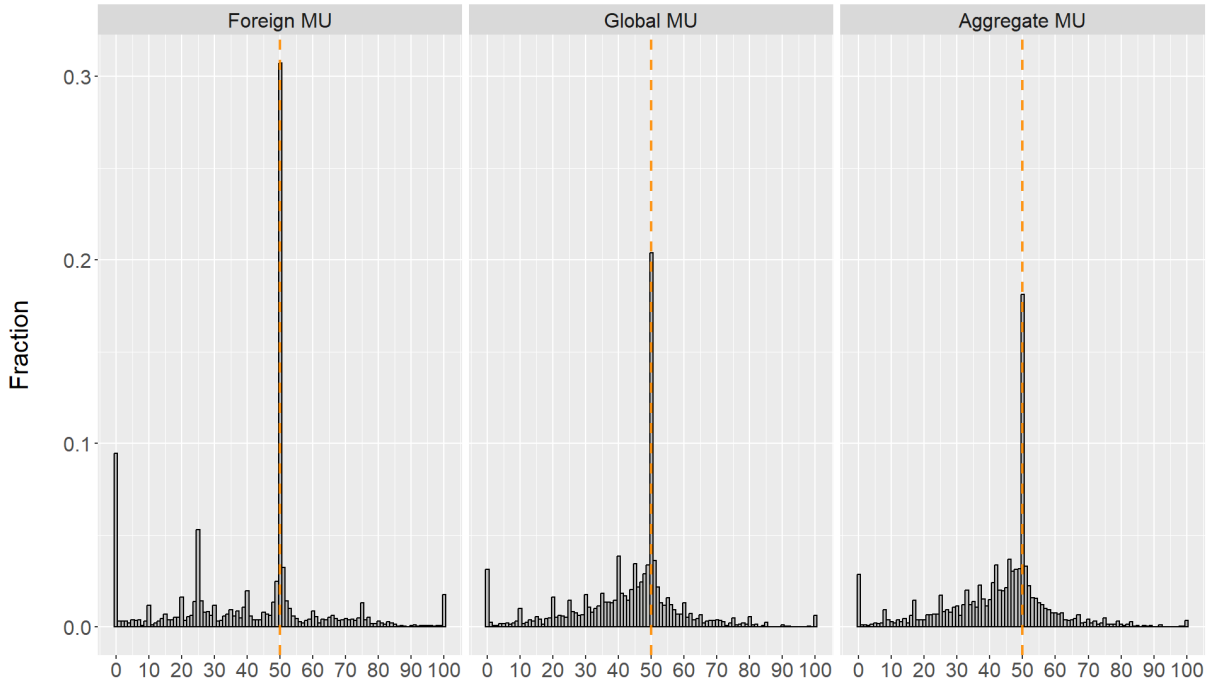


Figure 4: Histograms of global, foreign, and aggregate moral universalism measure

Notes: Moral universalism (MU) measures based on pooled data for Germany and Spain. The orange line indicates an equal allocation of the €100 budget between in-group and out-group members. Foreign MU measures altruistic giving to a foreign stranger (versus a domestic stranger). Global MU averages altruistic giving to foreign strangers with respect to foreign individuals who share in-group characteristics (same race/ ethnicity, values, religious beliefs, occupation/ profession, language). Aggregate MU averages the Foreign and Global MU measures.

B.4 Prior and posterior beliefs

Prior beliefs

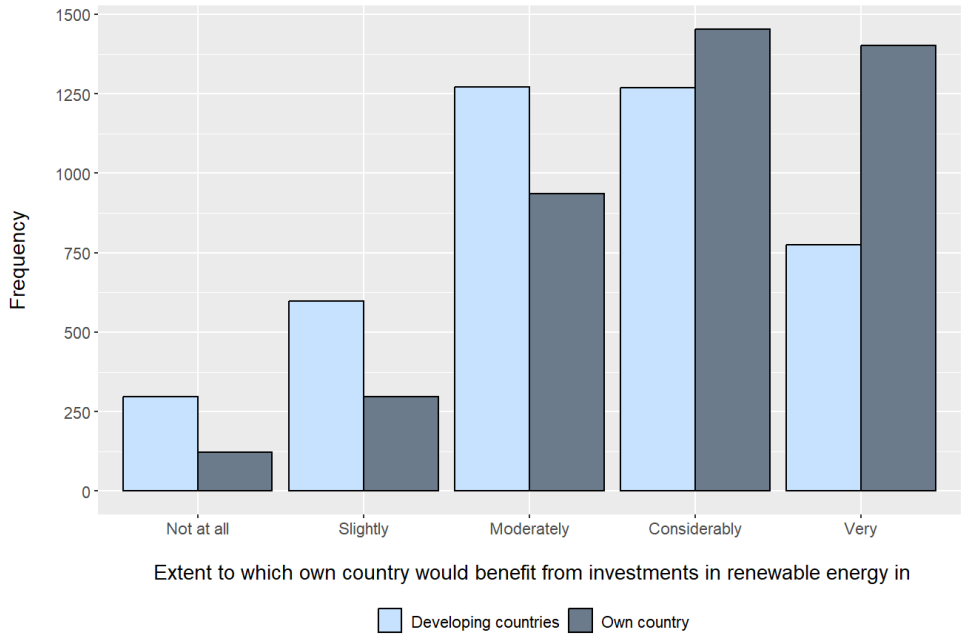


Figure 5: Histogram of prior beliefs about benefits from RE investments

Differences in prior and posterior beliefs

Table 9: Changes in belief on benefits from RE by group

	Full sample	Control	Competitive-ness	Trickle Down	Impure Altruism	Pure Altruism
(A) Share of change in beliefs						
(a) Extent of benefits for own country						
Positive update	0.22	0.21	0.22	0.24	0.25	0.19
Negative update	0.28	0.27	0.29	0.27	0.27	0.29
No update	0.50	0.51	0.49	0.49	0.48	0.52
(b) Extent of benefits for developing countries						
Positive update	0.20	0.20	0.17	0.23	0.23	0.19
Negative update	0.35	0.34	0.39	0.34	0.35	0.32
No update	0.45	0.46	0.44	0.43	0.42	0.48

(B) Wilcoxon rank-sum test p-value	(a) Update benefits own	(b) Update benefits developing
Control vs. Competitiveness	0.685	0.034
Control vs. Trickle Down	0.410	0.474
Control vs. Impure Altruism	0.413	0.454
Control vs. Pure Altruism	0.174	0.628
Competitiveness vs. Trickle Down	0.237	0.006
Competitiveness vs. Impure Altruism	0.238	0.006
Competitiveness vs. Pure Altruism	0.350	0.006
Trickle Down vs. Impure Altruism	0.955	0.946
Trickle Down vs. Pure Altruism	0.029	0.819
Impure Altruism vs. Pure Altruism	0.033	0.800

Notes: The belief update is defined as the difference between the prior belief (on domestic benefits from investments in RE) and the posterior beliefs (on domestic benefits from investments in renewable hydrogen) for investments (a) in the home country or (b) in developing country. Each belief was elicited on a 1-5 Likert scale. Panel (A) reports the shares of respondents in the denoted subgroups with increased, decreased, or unchanged perceived benefits. Panel (B) reports p-values from Wilcoxon rank-sum tests to analyze whether the belief updates differ significantly between the experimental conditions.

B.5 Credibility of information

Table 10: Means and rank-sum tests of credibility of information by group

(A) Mean credibility (1-5 Likert)					
Full sample	Control	Competitiveness	Trickle Down	Impure Altruism	Pure Altruism
3.81	3.78	3.83	3.79	3.78	3.85

(B) Wilcoxon rank-sum test p-value	
Control vs. Competitiveness	0.15
Control vs. Trickle Down	0.83
Control vs. Impure Altruism	0.93
Control vs. Pure Altruism	0.05
Competitiveness vs. Trickle Down	0.20
Competitiveness vs. Impure Altruism	0.18
Competitiveness vs. Pure Altruism	0.64
Trickle Down vs. Impure Altruism	0.91
Trickle Down vs. Pure Altruism	0.08
Impure Altruism vs. Pure Altruism	0.07

Notes: Panel (A) shows sample means of the perceived credibility of the information provided in the survey for the denoted subgroups. Panel (B) presents p-values from Wilcoxon rank-sum tests, each comparing the perceived credibility between two experimental conditions.

C Additional results

C.1 Moral universalism

C.1.1 Differences in background characteristics by universalism

Table 11: Differences in background variables by universalism (Control group)

Variable	Scale	Mean		p-value
		High Universalism (>median)	Low Universalism (≤ median)	rank-sum test
Political views & perceptions				
Demand for development aid	1-5	3.81	3.43	<0.001
Perceived government efficiency	1-11	5.76	4.39	<0.001
Desired extent of income redistribution	1-11	7.17	6.41	<0.001
Left vs. right political leaning	1-11	5.59	5.99	0.02
Climate change				
Demanding climate justice	1-5	3.78	3.41	<0.001
Climate change is an important problem	1-5	4.36	4.11	<0.001
Current climate change is human-made	1-5	4.19	4.02	0.04
Beliefs on benefits from RE investments				
Domestic benefits from domestic H_2 investments	1-5	3.74	3.98	<0.001
Domestic benefits from foreign H_2 investments	1-5	3.29	3.03	<0.001
Domestic benefits from foreign RE investments	1-5	3.52	3.27	0.002
Social preferences				
Trust	1-11	7.06	6.37	<0.001
Positive reciprocity	1-11	9.05	9.42	0.004
Personal background				
Migration background (parents born abroad)	0, 1	0.87	0.95	<0.0001

Notes: The table lists variables from the survey module with differences between Control group respondents with an above-median versus lower value of the aggregate moral universalism measure (as defined in section 2) that are at least significant at a 5% confidence level, according to Wilcoxon rank-sum tests. For the exact wording of all survey items see appendix E.

C.2 Narratives and policy demand

C.2.1 Additional treatment effects

Table 12: Competitiveness and Trickle Down narrative effects on money allocated to domestic RE

	Dependent variable:		
	Million euros allocated to domestic RE projects		
	(1)	(2)	(3)
Constant	50.699***	61.573***	53.821***
	(0.850)	(3.604)	(3.661)
Competitiveness	2.144*	1.586	1.869
	(1.208)	(1.170)	(1.153)
Trickle Down	−1.096	−2.060*	−1.983*
	(1.191)	(1.150)	(1.133)
Controls		Yes	Yes
Country FE			Yes
Observations	2,572	2,466	2,466
R^2	0.003	0.115	0.142
Adjusted R^2	0.002	0.110	0.136
F Statistic	3.768**	22.773***	26.932***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. Reference group: Control (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

Table 13: Impure Altruism (vs. Pure Altruism) narrative effect on money allocated to foreign RE

	Dependent variable:		
	Million euros allocated to foreign RE projects		
	(1)	(2)	(3)
Constant	54.508***	43.837***	51.365***
	(0.825)	(4.543)	(4.649)
Impure Altruism	2.302**	2.318**	2.414**
	(1.169)	(1.155)	(1.141)
Controls		Yes	Yes
Country FE			Yes
Observations	1,637	1,555	1,555
R^2	0.002	0.098	0.120
Adjusted R^2	0.002	0.091	0.112
F Statistic	3.878**	12.935***	15.065***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. Reference group: Pure Altruism (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, a scale of left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

Table 14: Trickle Down (vs. Pure Altruism) narrative effect on money allocated to domestic RE

	Dependent variable:		
	Million euros allocated to domestic RE projects		
	(1)	(2)	(3)
Constant	45.492***	56.481***	48.648***
	(0.854)	(4.604)	(4.691)
Trickle Down	4.111***	3.798***	3.576***
	(1.186)	(1.167)	(1.152)
Controls		Yes	Yes
Country FE			Yes
Observations	1,706	1,630	1,630
R^2	0.007	0.098	0.123
Adjusted R^2	0.006	0.091	0.115
F Statistic	12.021***	13.522***	16.104***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. Reference group: Pure Altruism (data of other groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

C.2.2 Role of causal explanation

Recent work in economics shares the understanding that economic narratives are characterized by a causal component. By establishing causal links between economic actions and outcomes they may affect people's beliefs about such variables and their relationship (see, e.g. Barron and Fries 2024; Kendall and Charles 2022). The results presented in section 4.2 suggest that policy preferences are affected consistent with the causal stories provided in our narrative treatments. To investigate whether the causal explanation actually is the element that explains the narrative effects, this appendix presents an additional test of whether subjects adapt their policy demand based on the causal chain established in our narratives.

To that end, we compare pairs of treatment groups that received narratives with different causes for the same co-benefits. For example, the *Competitiveness* and *Impure Altruism* narratives emphasize identical energy security benefits for the home country. However, only the *Competitiveness* narrative explains how domestic RE investments can realize these co-benefits, while the *Impure Altruism* narrative draws a causal path from foreign investments to these co-benefits. Therefore, respondents in the *Competitiveness* group are expected to show higher relative support for the domestic RE policy. In line with this hypothesis, table 15 shows statistically significant and sizable differences, with respondents allocating 22% more money to domestic RE projects in the *Competitiveness* than in the *Impure Altruism* condition, on average. We observe a similar, albeit less pronounced, difference of support to domestic investments between the *Trickle Down* and *Pure Altruism* conditions (see appendix table 14).

Table 15: Competitiveness (vs. Impure Altruism) narrative effect on money allocated to domestic RE

	Dependent variable:		
	Million euros allocated to domestic RE projects		
	(1)	(2)	(3)
Constant	43.191***	52.061***	43.562***
	(0.858)	(4.374)	(4.457)
Competitiveness	9.652***	9.961***	10.028***
	(1.207)	(1.182)	(1.162)
Controls		Yes	Yes
Country FE			Yes
Observations	1,651	1,571	1,571
R^2	0.037	0.144	0.173
Adjusted R^2	0.037	0.137	0.165
F Statistic	63.986***	20.219***	23.213***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. Reference group: Impure Altruism (data of other groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

C.2.3 Moderation analysis

Table 16: Moderation of Competitiveness (vs. Control) narrative effect on money allocated to foreign RE

Moderator	**Moderator x Treatment** Coefficient (std. error)	p-value	Treatment Coefficient (std. error)	Moderator Coefficient (std. error)	N	R^2
Moral universalism and related variables						
Above-median universalism, binary	2.93 (2.25)	0.19	-3.66** (1.6)	8.41*** (1.61)	1616	0.17
Above-median altruism, binary	2.54 (2.28)	0.27	-3.23** (1.63)	4.55*** (1.62)	1616	0.15
Demands climate justice, binary	3.58 (2.76)	0.20	-4.72* (2.46)	10.84*** (2.02)	1616	0.17
Demands development aid, binary	2.91 (2.82)	0.30	-4.47* (2.54)	13.9*** (2.04)	1616	0.19
Positive reciprocity (1-11)	0.41 (0.61)	0.50	-5.77 (5.76)	-1.52*** (0.43)	1616	0.14
Negative reciprocity (1-11)	0.56 (0.44)	0.20	-4.56* (2.41)	0.23 (0.31)	1616	0.13
Trust (1-11)	0.31 (0.45)	0.50	-4.09 (3.24)	0.6* (0.32)	1615	0.14
Desired extent of redistribution (1-11)	-0.23 (0.45)	0.60	-0.24 (3.19)	1.12*** (0.33)	1615	0.14
Left political leaning, binary	1.42 (2.35)	0.55	-2.56* (1.47)	1.16 (1.66)	1616	0.13
Investment efficiency & strength of institutions						
Agrees that develop. countries have better RE potential than own country, binary	0.6 (3.28)	0.85	-2.57 (3.04)	3.67 (2.29)	1616	0.13
Agrees that own country has stronger institutions than develop. countries	-2.15 (3.41)	0.53	-0.13 (3.18)	2.48 (2.49)	1616	0.13
Energy independence: Agrees domestic RE production can meet own demand, binary	-0.09 (2.67)	0.97	-1.96 (2.32)	2.98 (1.92)	1616	0.13
Sociodemographics						
Above-median age (binary)	0.22 (2.33)	0.92	-2.12 (1.5)	-1.76 (2.48)	1616	0.13
Male (binary)	-0.34 (2.3)	0.88	-1.85 (1.61)	-3.53** (1.62)	1616	0.13
Household income approx. in 5th income quintile, binary	-0.16 (2.83)	0.95	-1.98 (1.29)	-5.56** (2.39)	1616	0.13
Household income approx. in 4th or 5th income quintile, binary	-1.19 (2.31)	0.61	-1.48 (1.56)	-5.07** (2.25)	1616	0.13
Is employed, binary	1.3 (2.53)	0.61	-2.89 (2.12)	0.24 (1.87)	1608	0.13
Lives in urban area, binary	0.75 (2.33)	0.75	-2.45 (1.77)	0.49 (1.65)	1616	0.13
Parents have nationality of studied country (DE/ ES), binary	1.4 (3.89)	0.72	-3.23 (3.69)	-3.25 (3.2)	1611	0.13
Ethnicity: self-identifies as White European, binary	-2.19 (4.48)	0.62	0.04 (4.32)	-2.44 (3.21)	1616	0.13
Climate change (CC)						
Agrees CC is an important problem, binary	-3.98 (3.05)	0.19	1.14 (2.78)	8.89*** (2.13)	1616	0.14
Agrees CC is mostly human made, binary	-0.7 (2.79)	0.80	-1.53 (2.47)	4.58** (1.95)	1616	0.14
Prior beliefs						
Belief on domestic benefits from domestic RE investments (1-5)	-2.38** (1.12)	0.03	7.32 (4.52)	0.3 (0.8)	1616	0.14
Belief on domestic benefits from foreign RE investments (1-5)	-0.52 (1)	0.60	-0.45 (3.59)	4.49*** (0.71)	1616	0.17

Notes: OLS estimates from separate regressions of million euros allocated to foreign RE projects on the *Competitiveness* treatment indicator, indicated moderator, and their interaction. The models further include country fixed effects, and control for the following variables: age, net household income (in quintiles), government efficiency belief, and indicators for being male, being born in the data collection country, and living in an urban area. Significance is indicated by $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$.

Table 17: Moderation of Trickle Down (vs. Control) narrative effect on money allocated to foreign RE

Moderator	**Moderator x Treatment** Coefficient (std. error)	p-value	Treatment Coefficient (std. error)	Moderator Coefficient (std. error)	N	R^2
Moral universalism and related variables						
Above-median universalism, binary	-0.6 (2.22)	0.79	2.05 (1.58)	8.43*** (1.62)	1675	0.15
Above-median altruism, binary	5.55** (2.22)	0.01	-0.79 (1.59)	4.66*** (1.6)	1675	0.15
Demands climate justice, binary	4.63* (2.71)	0.09	-1.67 (2.41)	10.72*** (2.01)	1675	0.17
Demands development aid, binary	0.69 (2.82)	0.81	1.13 (2.54)	13.25*** (2.04)	1675	0.17
Positive reciprocity (1-11)	0.23 (0.59)	0.70	-0.15 (5.59)	-1.54*** (0.42)	1675	0.14
Negative reciprocity (1-11)	-0.22 (0.42)	0.60	3 (2.33)	0.28 (0.3)	1675	0.13
Trust (1-11)	0.4 (0.44)	0.36	-0.88 (3.16)	0.55* (0.32)	1674	0.13
Desired extent of redistribution (1-11)	-0.37 (0.43)	0.40	4.55 (3.09)	1.1*** (0.32)	1674	0.13
Left political leaning, binary	-2.35 (2.32)	0.31	2.77* (1.44)	1.1 (1.66)	1674	0.13
Investment efficiency & strength of institutions						
Agrees that develop. countries have better RE potential than own country, binary	2.55 (3.21)	0.43	-0.32 (2.97)	3.5 (2.28)	1675	0.13
Agrees that own country has stronger institutions than develop. countries	2.37 (3.49)	0.50	-0.24 (3.28)	2.4 (2.48)	1675	0.13
Energy independence: Agrees domestic RE production can meet own demand, binary	-0.88 (2.61)	0.74	2.53 (2.27)	2.95 (1.91)	1675	0.13
Sociodemographics						
Above-median age (binary)	1.92 (2.28)	0.40	1.08 (1.48)	-1.22 (2.45)	1675	0.13
Male (binary)	0.57 (2.25)	0.80	1.61 (1.59)	-3.65** (1.61)	1675	0.13
Household income approx. in 5th income quintile, binary	0.71 (2.77)	0.80	1.74 (1.27)	-4.88** (2.35)	1675	0.13
Household income approx. in 4th or 5th income quintile, binary	0.21 (2.27)	0.93	1.8 (1.51)	-4.63** (2.22)	1675	0.13
Is employed, binary	-1.8 (2.47)	0.47	3.21 (2.07)	-0.3 (1.85)	1664	0.13
Lives in urban area, binary	3.27 (2.27)	0.15	0.02 (1.72)	0.58 (1.64)	1675	0.13
Parents have nationality of studied country (DE/ ES), binary	0.76 (3.95)	0.85	1.16 (3.77)	-2.3 (3.17)	1667	0.13
Ethnicity: self-identifies as White European, binary	-2.66 (4.48)	0.55	4.39 (4.32)	-1.94 (3.2)	1675	0.13
Climate change (CC)						
Agrees CC is an important problem, binary	-4.14 (2.9)	0.15	5.33** (2.62)	8.71*** (2.13)	1675	0.14
Agrees CC is mostly human made, binary	-1.36 (2.67)	0.61	2.98 (2.35)	4.34** (1.95)	1675	0.13
Prior beliefs						
Belief on domestic benefits from domestic RE investments (1-5)	-0.91 (1.08)	0.40	5.42 (4.34)	0.18 (0.8)	1675	0.13
Belief on domestic benefits from foreign RE investments (1-5)	-0.37 (0.96)	0.70	3.44 (3.39)	4.45*** (0.71)	1675	0.16

Notes: OLS estimates from separate regressions of million euros allocated to foreign RE projects on the *Trickle Down* treatment indicator, indicated moderator, and their interaction. The models further include country fixed effects, and control for the following variables: age, net household income (in quintiles), government efficiency belief, and indicators for being male, being born in the data collection country, and living in an urban area. Significance is indicated by $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$.

Table 18: Moderation of Impure Altruism (vs. Control) narrative effect on money allocated to foreign RE

Moderator	**Moderator x Treatment** Coefficient (std. error)	p-value	Treatment Coefficient (std. error)	Moderator Coefficient (std. error)	N	R^2
Moral universalism and related variables						
Above-median universalism, binary	0.64 (2.2)	0.77	7.63*** (1.54)	8.51*** (1.57)	1601	0.18
Above-median altruism, binary	0.59 (2.23)	0.79	7.78*** (1.56)	4.59*** (1.57)	1601	0.15
Demands climate justice, binary	4.42* (2.67)	0.10	4.51* (2.37)	10.8*** (1.95)	1601	0.19
Demands development aid, binary	1.96 (2.81)	0.49	5.91** (2.55)	13.37*** (1.98)	1601	0.19
Positive reciprocity (1-11)	0.89 (0.58)	0.12	-0.49 (5.46)	-1.55*** (0.41)	1601	0.15
Negative reciprocity (1-11)	-0.44 (0.42)	0.30	9.94*** (2.37)	0.34 (0.3)	1601	0.14
Trust (1-11)	0.76* (0.43)	0.08	2.86 (3.06)	0.62** (0.31)	1599	0.16
Desired extent of redistribution (1-11)	-0.36 (0.44)	0.41	10.43*** (3.11)	1.12*** (0.32)	1600	0.15
Left political leaning, binary	0 (2.29)	1.00	7.76*** (1.44)	1.29 (1.61)	1600	0.14
Investment efficiency & strength of institutions						
Agrees that develop. countries have better RE potential than own country, binary	3.27 (3.27)	0.32	4.83 (3.05)	3.64 (2.22)	1601	0.15
Agrees that own country has stronger institutions than develop. countries	2.22 (3.36)	0.51	5.87* (3.14)	2.23 (2.41)	1601	0.15
Energy independence: Agrees domestic RE production can meet own demand, binary	-3.33 (2.59)	0.20	10.27*** (2.24)	3.33* (1.86)	1601	0.15
Sociodemographics						
Above-median age (binary)	5.87*** (2.26)	0.01	5.32*** (1.47)	-0.57 (2.41)	1601	0.15
Male (binary)	-1.12 (2.24)	0.62	8.32*** (1.57)	-3.84** (1.57)	1601	0.14
Household income approx. in 5th income quintile, binary	2.06 (2.7)	0.44	7.32*** (1.27)	-5.74** (2.3)	1601	0.14
Household income approx. in 4th or 5th income quintile, binary	-0.45 (2.25)	0.84	7.98*** (1.52)	-4.48** (2.18)	1601	0.14
Is employed, binary	-1.47 (2.41)	0.54	8.96*** (1.99)	0.41 (1.81)	1589	0.15
Lives in urban area, binary	4.48** (2.26)	0.05	5.2*** (1.71)	0.59 (1.59)	1601	0.15
Parents have nationality of studied country (DE/ ES), binary	-5.89 (4.06)	0.15	13.24*** (3.89)	-5.94* (3.13)	1595	0.15
Ethnicity: self-identifies as White European, binary	-3 (4.7)	0.52	10.65** (4.56)	-2.4 (3.11)	1601	0.15
Climate change (CC)						
Agrees CC is an important problem, binary	0.78 (2.84)	0.78	7.3*** (2.57)	8.85*** (2.06)	1601	0.16
Agrees CC is mostly human made, binary	5.72** (2.66)	0.03	3.36 (2.34)	4.53** (1.88)	1601	0.16
Prior beliefs						
Belief on domestic benefits from domestic RE investments (1-5)	0.31 (1.08)	0.77	6.58 (4.32)	0.2 (0.78)	1601	0.14
Belief on domestic benefits from foreign RE investments (1-5)	-0.38 (0.96)	0.69	8.91*** (3.45)	4.48*** (0.69)	1601	0.18

Notes: OLS estimates from separate regressions of million euros allocated to foreign RE projects on the *Impure Altruism* treatment indicator, indicated moderator, and their interaction. The models further include country fixed effects, and control for the following variables: age, net household income (in quintiles), government efficiency belief, and indicators for being male, being born in the data collection country, and living in an urban area. Significance is indicated by $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$.

Table 19: Moderation of Pure Altruism (vs. Control) narrative effect on money allocated to foreign RE

Moderator	**Moderator x Treatment** Coefficient (std. error)	p-value	Treatment Coefficient (std. error)	Moderator Coefficient (std. error)	N	R^2
Moral universalism and related variables						
Above-median universalism, binary	-2.31 (2.22)	0.30	6.83*** (1.55)	8.75*** (1.58)	1600	0.15
Above-median altruism, binary	0.93 (2.23)	0.68	5.02*** (1.6)	4.66*** (1.57)	1600	0.14
Demands climate justice, binary	-2.5 (2.78)	0.37	7.46*** (2.49)	10.61*** (1.98)	1600	0.15
Demands development aid, binary	0.26 (2.84)	0.93	5.07** (2.56)	13.58*** (1.99)	1600	0.17
Positive reciprocity (1-11)	0.81 (0.58)	0.16	-2.06 (5.48)	-1.55*** (0.41)	1600	0.14
Negative reciprocity (1-11)	-0.49 (0.43)	0.25	7.89*** (2.41)	0.29 (0.3)	1600	0.13
Trust (1-11)	-0.03 (0.43)	0.95	5.63* (3.15)	0.59* (0.31)	1599	0.13
Desired extent of redistribution (1-11)	-1.11** (0.44)	0.01	12.99*** (3.16)	1.14*** (0.32)	1599	0.13
Left political leaning, binary	-1.78 (2.31)	0.44	6.13*** (1.43)	1.19 (1.62)	1600	0.13
Investment efficiency & strength of institutions						
Agrees that develop. countries have better RE potential than own country, binary	2.41 (3.21)	0.45	3.31 (2.98)	3.42 (2.22)	1600	0.13
Agrees that own country has stronger institutions than develop. countries	-1.61 (3.42)	0.64	6.85** (3.2)	2.21 (2.42)	1600	0.13
Energy independence: Agrees domestic RE production can meet own demand, binary	-3.09 (2.65)	0.24	7.77*** (2.31)	3.42* (1.86)	1600	0.13
Sociodemographics						
Above-median age (binary)	3.08 (2.28)	0.18	4.12*** (1.48)	-2.61 (2.42)	1600	0.13
Male (binary)	-1.2 (2.25)	0.59	6.05*** (1.61)	-3.8** (1.57)	1600	0.13
Household income approx. in 5th income quintile, binary	0.87 (2.7)	0.75	5.24*** (1.28)	-4.99** (2.34)	1600	0.13
Household income approx. in 4th or 5th income quintile, binary	1.64 (2.25)	0.47	4.66*** (1.55)	-5.34** (2.21)	1600	0.13
Is employed, binary	-1.27 (2.48)	0.61	6.32*** (2.09)	0.28 (1.81)	1592	0.13
Lives in urban area, binary	-0.21 (2.28)	0.93	5.56*** (1.72)	0.77 (1.6)	1600	0.13
Parents have nationality of studied country (DE/ ES), binary	1.38 (3.93)	0.73	4.18 (3.75)	-5.5* (3.15)	1593	0.13
Ethnicity: self-identifies as White European, binary	-1.78 (4.5)	0.69	7.14 (4.35)	-3.39 (3.12)	1600	0.13
Climate change (CC)						
Agrees CC is an important problem, binary	-2.28 (2.9)	0.43	7.38*** (2.62)	8.84*** (2.07)	1600	0.14
Agrees CC is mostly human made, binary	-1.76 (2.73)	0.52	6.78*** (2.41)	4.52** (1.9)	1600	0.13
Prior beliefs						
Belief on domestic benefits from domestic RE investments (1-5)	0.01 (1.1)	0.99	5.39 (4.47)	0.21 (0.78)	1600	0.13
Belief on domestic benefits from foreign RE investments (1-5)	-0.88 (0.98)	0.37	8.37** (3.51)	4.48*** (0.69)	1600	0.16

Notes: OLS estimates from separate regressions of million euros allocated to foreign RE projects on the *Pure Altruism* treatment indicator, indicated moderator, and their interaction. The models further include country fixed effects, and control for the following variables: age, net household income (in quintiles), government efficiency belief, and indicators for being male, being born in the data collection country, and living in an urban area. Significance is indicated by $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$.

C.3 Narratives and universalism

C.3.1 Subgroup analysis

Table 20: Stratum-specific treatment effects (compared to Control)

(A) High Universalism

	Dependent variable:			
	Million euros allocated to domestic RE projects		Million euros allocated to foreign RE projects	
	(1)	(2)	(3)	(4)
Constant	49.574***	50.996***	41.287***	50.343***
	(5.530)	(5.364)	(5.618)	(5.622)
Competitiveness	0.848			
	(1.513)			
Trickle Down		−1.481		
		(1.456)		
Impure Altruism			8.325***	
			(1.450)	
Pure Altruism				4.702***
				(1.447)
Observations	820	853	786	775
R^2	0.075	0.073	0.110	0.079
Adjusted R^2	0.059	0.058	0.094	0.062
F Statistic	4.654***	4.741***	6.800***	4.652***

(B) Low Universalism

	Dependent variable:			
	Million euros allocated to domestic RE projects		Million euros allocated to foreign RE projects	
	(1)	(2)	(3)	(4)
Constant	57.820***	65.886***	48.953***	37.691***
	(6.850)	(7.232)	(6.531)	(7.201)
Competitiveness	3.300**			
	(1.651)			
Trickle Down		−1.969		
		(1.663)		
Impure Altruism			7.795***	
			(1.643)	
Pure Altruism				6.546***
				(1.671)
Observations	794	819	811	823
R^2	0.186	0.170	0.178	0.153
Adjusted R^2	0.171	0.155	0.164	0.138
F Statistic	12.717***	11.722***	12.336***	10.392***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimations of treatment effects (compared to the Control group) for a subgroup analysis of individuals with an above-median value of the aggregate moral universalism measure (panel A) and those with a lower value (panel B). All regression models include country fixed-effects and the following control variables: age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

C.3.2 Competitiveness narrative: heterogeneity by moral universalism

Table 21: Competitiveness (vs. Control) narrative effect on money allocated to domestic RE, moderated by universalism

	Dependent variable:		
	Million euros allocated to domestic RE projects		
	(1)	(2)	(3)
Constant	52.562***	52.984***	47.199***
	(0.578)	(2.248)	(2.255)
Competitiveness x Above-median universalism	−3.472*	−3.685**	−3.588**
	(1.844)	(1.837)	(1.803)
Competitiveness	7.480***	7.637***	7.732***
	(1.316)	(1.309)	(1.284)
Above-median universalism	−10.574***	−8.042***	−7.845***
	(0.821)	(0.839)	(0.824)
Controls	No	Yes	Yes
Country FE	No	No	Yes
Observations	4,209	4,026	4,026
R^2	0.061	0.119	0.151
Adjusted R^2	0.061	0.116	0.149
F Statistic	91.344***	45.056***	55.072***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. Reference group: Control. The control variables include age, net household income (in quintiles), government efficiency belief, and indicators for being male, being born in the data collection country, and living in an urban area.

D Robustness checks

D.1 Censored regressions

The following censored regressions were estimated in R using the censReg package (Henningsen 2024).

D.1.1 Narrative effects

Co-benefits

Table 22: Censored regression: Impure Altruism and Pure Altruism narrative effects on money allocated to foreign RE

	Dependent variable:		
	Million euros allocated to foreign RE projects, censored at 0 (left) and 100 (right)		
	(1)	(2)	(3)
Impure Altruism	7.837***	8.543***	8.344***
	(1.274)	(1.236)	(1.221)
Pure Altruism	5.570***	6.215***	5.916***
	(1.273)	(1.237)	(1.222)
Controls	No	Yes	Yes
Country FE	No	No	Yes
Constant	48.661***	35.415***	43.019***
	(0.892)	(3.962)	(4.044)
Observations	2,489	2,375	2,375

*p<0.1; **p<0.05; ***p<0.01

Notes: Reference group: Control (data of other treatment groups not included in regression). The control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

Table 23: Censored regression: Competitiveness and Trickle Down narrative effects on money allocated to domestic RE

	Dependent variable:		
	Million euros allocated to domestic RE projects, censored at 0 (left) and 100 (right)		
	(1)	(2)	(3)
Competitiveness	2.348*	1.771	2.080
	(1.343)	(1.296)	(1.277)
Trickle Down	−1.123	−2.171*	−2.080*
	(1.324)	(1.273)	(1.254)
Controls	No	Yes	Yes
Country FE	No	No	Yes
Constant	51.400***	64.482***	56.234***
	(0.945)	(3.993)	(4.055)
Observations	2,572	2,466	2,466

*p<0.1; **p<0.05; ***p<0.01

Notes: Reference group: Control (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

In-group vs. out-group co-benefits

Table 24: Censored regression: Competitiveness (vs. Trickle Down) narrative effect on money allocated to domestic RE

	Dependent variable:		
	Million euros allocated to domestic RE projects, censored at 0 (left) and 100 (right)		
	(1)	(2)	(3)
Competitiveness	3.478**	3.967***	4.205***
	(1.362)	(1.321)	(1.299)
Controls	No	Yes	Yes
Country FE	No	No	Yes
Constant	50.302***	61.838***	52.484***
	(0.949)	(4.930)	(5.012)
Observations	1,720	1,646	1,646

*p<0.1; **p<0.05; ***p<0.01

Notes: Reference group: Trickle Down (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

Table 25: Censored regression: Impure Altruism (vs. Pure Altruism) narrative effect on money allocated to foreign RE

	Dependent variable:		
	Million euros allocated to foreign RE projects, censored at 0 (left) and 100 (right)		
	(1)	(2)	(3)
Impure Altruism	2.267*	2.295*	2.388*
	(1.280)	(1.260)	(1.244)
Controls	No	Yes	Yes
Country FE	No	No	Yes
Constant	54.233***	42.460***	50.471***
	(0.904)	(4.951)	(5.065)
Observations	1,637	1,555	1,555

*p<0.1; **p<0.05; ***p<0.01

Notes: Reference group: Trickle Down (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

D.1.2 Moral universalism and policy preferences

Table 26: Censored regression of money allocated to foreign RE on moral universalism

	Dependent variable:			
	Million euros allocated to foreign RE projects, censored at 0 (left) and 100 (right)			
	(1)	(2)	(3)	(4)
Above-median Moral Universalism	12.226***	12.454***	9.469***	9.289***
	(0.817)	(0.808)	(0.824)	(0.811)
Treatment indicators	No	Yes	Yes	Yes
Controls	No	No	Yes	Yes
Country FE	No	No	No	Yes
Constant	44.907***	42.331***	35.706***	42.980***
	(0.578)	(0.986)	(2.702)	(2.732)
Observations	4,209	4,209	4,025	4,025

*p<0.1; **p<0.05; ***p<0.01

Notes: Ordered probit estimation. The main explanatory variable is a moral universalism indicator as defined in section 2. Controls include age, net household income (in quintiles), redistribution preferences, government efficiency belief, and indicators for being male, being born in the data collection country, living in an urban area.

D.2 Likert outcome

D.2.1 Moral Universalism and policy preferences

Table 27: Ordered probit regression of support for domestic RE on moral universalism

	Dependent variable:			
	Support domestic RE (0-10 Likert)			
	ordered logistic		*ordered probit*	
	(1)	(2)	(3)	(4)
Above-median moral universalism	−0.347***	−0.174***	−0.165***	−0.161***
	(0.055)	(0.032)	(0.034)	(0.034)
Treatment indicators	No	Yes	Yes	Yes
Controls	No	No	Yes	Yes
Country FE	No	No	No	Yes
				(0.035)
Observations	4,209	4,209	4,025	4,025

*p<0.1; **p<0.05; ***p<0.01

Notes: Ordered probit estimation. The main explanatory variable is a moral universalism indicator as defined in section 2. Controls include age, net household income (in quintiles), redistribution preferences, government efficiency belief, and indicators for being male, being born in the data collection country, living in an urban area.

D.2.2 Narrative effects on locational policy preferences

Co-benefits

Table 28: Ordered probit: Impure Altruism and Pure Altruism (vs. Control) narrative effects on support for domestic RE

	Dependent variable:		
	Support domestic RE (0-10 Likert)		
	(1)	(2)	(3)
Impure Altruism	-0.206^{***}	-0.196^{***}	-0.192^{***}
	(0.051)	(0.052)	(0.052)
Pure Altruism	-0.154^{***}	-0.165^{***}	-0.154^{***}
	(0.051)	(0.052)	(0.052)
Controls	No	Yes	Yes
Country FE	No	No	Yes
Observations	2,489	2,375	2,375

*p<0.1; **p<0.05; ***p<0.01

Notes: Ordered Probit estimation. Reference group: Control (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

Table 29: Ordered probit: Competitiveness and Trickle Down (vs. Control) narrative effects on support for domestic RE

	Dependent variable:		
	Support domestic RE (0-10 Likert)		
	(1)	(2)	(3)
Competitiveness	0.026	0.040	0.054
	(0.051)	(0.052)	(0.052)
Trickle Down	−0.057	−0.061	−0.060
	(0.050)	(0.051)	(0.051)
Controls		Yes	Yes
Country FE			Yes
Observations	2,572	2,466	2,466

*p<0.1; **p<0.05; ***p<0.01

Notes: Ordered Probit estimation. Reference group: Control (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

In-group vs. out-group co-benefits

Table 30: Ordered probit: Competitiveness (vs. Trickle Down) narrative effect on support for domestic RE

	Dependent variable:		
	Support domestic RE (0-10 Likert)		
	(1)	(2)	(3)
Competitiveness	0.081	0.100^{*}	0.111^{**}
	(0.050)	(0.052)	(0.052)
Controls		Yes	Yes
Country FE			Yes
Observations	1,720	1,646	1,646

*p<0.1; **p<0.05; ***p<0.01

Notes: Ordered Probit estimation. Reference group: Trickle Down (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

Table 31: Ordered probit: Impure Altruism (vs. Pure Altruism) narrative effect on support for domestic RE

	Dependent variable:		
	Support domestic RE (0-10 Likert)		
	(1)	(2)	(3)
Impure Altruism	−0.052	−0.028	−0.033
	(0.051)	(0.053)	(0.053)
Controls		Yes	Yes
Country FE			Yes
Observations	1,637	1,555	1,555

*p<0.1; **p<0.05; ***p<0.01

Notes: Ordered Probit estimation. Reference group: Pure Altruism (data of other treatment groups not included in regression). Control variables include age, net household income (in quintiles), redistribution preferences, government efficiency belief, trust, left-right political orientation, and indicators for being male, being born in the data collection country, and living in an urban area.

D.3 Moral Universalism

D.3.1 Alternative outcomes

Table 32: Regression of money allocated to foreign RE (unconditional) on moral universalism

	Dependent variable:			
	Million euros allocated to foreign RE projects (unconditional)			
	(1)	(2)	(3)	(4)
Constant	17.515***	17.195***	14.359***	17.421***
	(0.347)	(0.597)	(1.643)	(1.678)
Above-median moral universalism	7.537***	7.631***	5.609***	5.538***
	(0.492)	(0.490)	(0.502)	(0.498)
Treatment indicators	No	Yes	Yes	Yes
Controls	No	No	Yes	Yes
Country FE	No	No	No	Yes
Observations	4,209	4,209	4,025	4,025
R^2	0.053	0.063	0.126	0.139
Adjusted R^2	0.053	0.061	0.122	0.135
F Statistic	235.100***	56.046***	38.425***	40.343***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. The main explanatory variable is a moral universalism indicator as defined in section 2. Controls include age, net household income (in quintiles), redistribution preferences, government efficiency belief, and indicators for being male, being born in the data collection country, living in an urban area.

Table 33: Regression of money allocated to foreign RE (conditional) on moral universalism

	Dependent variable:			
	Million euros allocated to foreign RE projects (conditional on trade agreements)			
	(1)	(2)	(3)	(4)
Constant	28.481***	26.329***	24.003***	27.746***
	(0.420)	(0.721)	(2.035)	(2.078)
Above-median moral universalism	3.661***	3.789***	3.127***	3.040***
	(0.594)	(0.591)	(0.622)	(0.617)
Treatment indicators	No	Yes	Yes	Yes
Controls	No	No	Yes	Yes
Country FE	No	No	No	Yes
Observations	4,209	4,209	4,025	4,025
R^2	0.009	0.023	0.039	0.053
Adjusted R^2	0.009	0.022	0.035	0.049
F Statistic	37.936***	19.493***	10.796***	13.954***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. The main explanatory variable is a moral universalism indicator as defined in section 2. Controls include age, net household income (in quintiles), redistribution preferences, government efficiency belief, and indicators for being male, being born in the data collection country, living in an urban area.

D.3.2 Continuous moral universalism measure

Table 34: Regression of money allocated to foreign RE on moral universalism (continuous measure)

	Dependent variable:			
	Million euros allocated to foreign RE projects			
	(1)	(2)	(3)	(4)
Constant	33.383***	30.803***	28.924***	35.799***
	(1.014)	(1.237)	(2.563)	(2.585)
Moral Universalism (continuous)	0.424***	0.428***	0.341***	0.338***
	(0.022)	(0.022)	(0.023)	(0.022)
Treatment indicators		Yes	Yes	Yes
Controls			Yes	Yes
Country FE				Yes
Observations	4,209	4,209	4,025	4,025
R^2	0.081	0.102	0.157	0.185
Adjusted R^2	0.080	0.101	0.154	0.182
F Statistic	369.356***	95.713***	49.654***	57.002***

*p<0.1; **p<0.05; ***p<0.01

Notes: OLS estimates with standard errors in parentheses. The main explanatory variable is the aggregate moral universalism measure $\in \{0, 100\}$ as defined in section 2. Controls include age, net household income (in quintiles), redistribution preferences, government efficiency belief, and indicators for being male, being born in the data collection country, living in an urban area.

E Questionnaire

This appendix provides an English translation of the questionnaire of our survey experiment. The German and Spanish versions of the questionnaire are available in the supplementary material.

Question & *response options*	Reference/ Comment
Survey landing page/ consent Welcome and thank you for your interest in participating in this survey! This is a survey conducted by researchers from the Ruhr University Bochum in Germany. The research is conducted for academic research purposes only and is independent of any political orientation. Its objective is to understand what citizens think about important policies. The survey will take approximately **20 minutes** to complete. It is very important and we appreciate that you **read the questions carefully and answer honestly**. We guarantee that you will be compensated for attentively completing the survey; as long as your responses pass our survey quality checks which are tuned to detect incoherent and rushed responses. All of your responses are **anonymous**, and there is no possibility of linking them back to your identity. The personal data we collect will be transferred and stored on secure German servers. Only researchers working on the project will have access to the anonymized data. Your participation in this survey is completely **voluntary** and you can drop out of the survey at any time. Your decision will not be held against you in any way. If you have questions, concerns, or complaints, you can contact the research team: ceresus@rub.de (Ruhr University Bochum, Universitätsstr. 150, 44801 Bochum, Germany). Checkbox: "*I consent to take part in this study*"	
Background variables I	
Instruction Before you proceed with this survey, please provide the following information.	
Age How old are you? *[enter number, open-ended]* years	
Gender What is your gender? Spain *Male; Female; Other; Prefer not to say* *If Other: I identify my gender as [open-ended]* Germany *Male; Female; Diverse; No indication; Prefer not to say*	
Income What's your approximate monthly household income **after** taxes? *Spain* ● *Less than 499 EUR* ● *500 – 999 EUR* ● *1,000 – 1,499 EUR* ● *1,500 – 1,999 EUR* ● *2,000 – 2,499 EUR* *Germany* ● *Less than 1,500 Euro* ● *1,500 until below 2,500 Euro* ● *2,500 until below 3,500 Euro* ● *3,500 until below 5,000 Euro* ● *5,000 Euro or more*	

• *2,500 – 2,999 EUR* • *3,000 – 4,999 EUR* • *5,000 EUR or more* • *Prefer not to say* • *Prefer not to say*	
Climate change & attention check I How much do you agree or disagree with the following statements: • Climate change is an important problem • Most of the climate change in the last decades is due to human activity • I consider myself knowledgeable about climate change • [**Simple attention check with screenout**] To ensure that you answer this survey with full attention, we ask you to select 'Neither agree nor disagree' in this line *Strongly agree, slightly agree, Neither agree nor disagree, slightly disagree, strongly disagree*	Qs relate to climate change from Dechezlepêtre et al., 2025
Prior beliefs	
Prior belief Companies and policymakers sometimes can decide between making investments in their own country or investing in other countries, such as investments in energy infrastructure and technology development. (?) There are **no right or wrong answers**. We are interested in your personal assessment regardless of your prior knowledge on the topic. To what extent do you think **[own country]** would **benefit** from: • investments in renewable energy (such as solar and wind power) in [own country] • investments in renewable energy (such as solar and wind power) in developing countries *Not at all; Slightly; Moderately; Considerable; Very*	Randomized order of response options
Moral Universalism	
Game Introduction **You will now be asked to participate in a variety of hypothetical games and answer a number of questions.** In these games, **none** of the tasks or questions will have right or wrong answers. **We are only interested in your personal views and preferences.** In each of these hypothetical games and questions, you will consider different individuals. There will be **three different types of individuals**: • Randomly-selected people who live in [own country]. • Members of different social groups of yours who live anywhere in the world, such as someone who shares your religious beliefs. • Randomly-selected people who live anywhere in the world.	
Allocation Instructions I In the following set of hypothetical games, you will be asked to take part in a sequence of **money allocation** tasks.	Enke et al., 2023

In each of these tasks, **you** will be **endowed with a hypothetical sum of €100**, and will be asked to allocate this money between two individuals, one of which may be yourself. That is, in some of these tasks you may be allowed to keep some of the hypothetical money for yourself; in the remaining tasks, all hypothetical money must be allocated to others. In each of these types of tasks, you will be provided with information about the individuals that are involved prior to making your decisions. In all of these decisions, please **assume all individuals presented have the same income**. Please also **assume that none of the individuals would find out who the identity of the individual sending them money (you) is.** It is important to emphasize that, in all tasks, you can split the hypothetical money in **any way you see fit** – there are no restrictions of any kind. (You will be allowed to proceed to the next screen in 20 seconds.)	
Understanding Check I We would like to confirm your understanding of the **tasks that follow**. To do so, please answer the following question. How are you allowed to allocate the money in each of the following tasks? • One person must always receive €80 • Any way I see fit • One person must always receive €60 If wrong answer selected: One or more questions have not been answered in a valid manner. You cannot proceed until these answers are valid.	
Foreign Moral Universalism **How would you split €100 between a randomly-selected person who lives in [own country] and a randomly-selected person who lives anywhere in the world?** The closer you drag the slider to one individual, the more money you allocate to that individual. Please assume both individuals below have the same income and that every additional euro yields the same welfare gain to either person, and that they would not find out that it was you who sent them the money. Please scroll down to submit your answer. *Slider:* --- € A randomly-selected person who lives in [own country] A randomly-selected person who lives anywhere in the world € **Global Moral Universalism** **In each row below, how would you split €100 between the individual displayed on the left (who is part of a particular social group) and a randomly-selected person who lives anywhere in the world?** The closer you drag the slider to one individual, the more money you allocate to that individual. Please assume all individuals below have the same income and every additional euro yields the same welfare gain to either person, that **all live anywhere in the world**, and that they would not find out that it was you who sent them the money.	Enke et al., 2023 Enke et al., 2023 (Randomized order of decisions not implemented here for

Please scroll down to submit your answers. *Sliders:* —---------- € Someone of your same race/ ethnicity (such as a fellow Hispanic person) who lives anywhere in the world — Randomly-selected *Person A* who lives anywhere in the world € € Someone who shares your values and lives anywhere in the world — Randomly-selected *Person B* who lives anywhere in the world € € Someone who shares your religious beliefs (such as a fellow Christian) and lives anywhere in the world — Randomly-selected *Person C* who lives anywhere in the world € € Someone who shares your occupation/ profession and lives anywhere in the world — Randomly-selected *Person D* who lives anywhere in the world € € Someone who speaks your same language and lives anywhere in the world — Randomly-selected *Person E* who lives anywhere in the world €	technical reasons)
Revealed Altruism **How would you split 100€ between yourself and a randomly-selected person who lives in [own country]?** The closer you drag the slider to one individual, the more money you allocate to that individual. Please assume the randomly-selected individual below has the same income as you, and would not find out that it was you who sent them the money. *Slider:* ---------- € You — A randomly-selected person who lives in [own country] €	Enke et al., 2023
Disclaimer Before you proceed with the questionnaire, we request that you **pay close attention** to the upcoming screen. There will be a **test of your understanding** of the provided information.	

Narratives (Treatments)	
Context info Climate change is one of the biggest global challenges today. To reduce greenhouse gas emissions and mitigate climate change, a transition to renewable energies such as solar and wind power is necessary. You will be allowed to proceed to the next screen after: 5 seconds.	Shown to all respondents
Control *No additional information*	
Competitiveness treatment (T1) The energy transition requires **investments in [own country]** to assure a **large share of benefits** from the transition **for [own country]**. Especially, investments in [own country] enable [own country] to benefit from improved renewable energy supply. For example, the massive expansion of solar and wind power plants in [own country] leads to learning effects from increased experience with these technologies, which [own country] can then profit from. Such learning effects can reduce the cost and strongly increase the production of renewable energy. This leads to higher supply with cheap renewable energy in [own country], thus improving energy security in [own country]. In short, **investing in [own country]** assures that **[own country]** receives **a large share of benefits** from the global energy transition. You will be allowed to proceed to the next screen in 20 seconds.	
Trickle Down treatment (T2) The energy transition requires **investments in [own country]** to assure **a large share of benefits** from the transition **for developing countries**. Especially, investments in [own country] enable developing countries to benefit from improved renewable energy supply. For example, the massive expansion of renewable energy in [own country] leads to learning effects from increased experience with these technologies, which developing countries can then profit from. Such learning effects can reduce the cost and strongly increase the production of renewable energy. The improved renewable energy technology can then be transferred to developing countries. This leads to higher supply with cheap renewable energy in developing countries, thus improving energy security in developing countries.	

In short, **investing in [own country]** assures that **developing countries** receive **a large share of benefits** from the global energy transition. You will be allowed to proceed to the next screen in 20 seconds.	
Impure Altruism treatment (T3) The energy transition requires **investments in developing countries** to assure a **large share of benefits** from the transition **for [own country]**. Especially, investments in developing countries enable [own country] to benefit from improved renewable energy supply. For example, the massive expansion of renewable energy in developing countries leads to learning effects from increased experience with these technologies, which [own country] can then profit from. Such learning effects can reduce the cost and strongly increase the production of renewable energy. [own country] can then import renewable energy from them. This leads to higher supply with cheap renewable energy in [own country], thus improving energy security in [own country]. In short, **investing in developing countries** assures that **[own country]** receives **a large share of benefits** from the global energy transition. You will be allowed to proceed to the next screen in 20 seconds.	
Pure Altruism treatment (T4) The energy transition requires **investments in developing countries** to assure **a large share** of benefits from the transition **for developing countries**. Especially, investments in developing countries enable developing countries to benefit from improved renewable energy supply. For example, the massive expansion of renewable energy in developing countries leads to learning effects from increased experience with these technologies, which developing countries can then profit from. Such learning effects can reduce the cost and strongly increase the production of renewable energy. This leads to higher supply with cheap renewable energy in developing countries, thus improving energy security in developing countries. In short, **investing in developing countries** assures that **developing countries receive a large share of benefits** from the global energy transition.	

You will be allowed to proceed to the next screen in 20 seconds.	
Attention check treatment	
If respondent is in treatment group 1 or 2: We would like to confirm your understanding of the text you just read. **Based on the information provided, which is correct?** Investing in [own country] … ● …assures that **developing countries** get a large share of benefits from the energy transition [correct for T2] ● …assures that [**own country**] gets a large share of benefits from the energy transition [correct for T1] ● None of the above is correct **If respondent is in treatment group 3 or 4:** We would like to confirm your understanding of the text you just read. **Based on the information provided, which is correct?** Investing in developing countries … ● …assures that **developing countries** get a large share of benefits from the energy transition [correct for T4] ● …assures that [**own country**] gets a large share of benefits from the energy transition [correct for T3] ● None of the above is correct	Respondents that failed this check were *not* excluded from the survey
Attention check Control group We would like to confirm your understanding of the text you just read. **Based on the information provided, which is correct?** Mitigating climate change requires… ● …lifestyle changes by every individual ● …a transition to renewable energy ● None of the above is correct	Respondents who failed this check were *not* excluded from the survey
Outcomes	
Allocation Instructions II (Policy support) The following questions have **no right or wrong answers**. We are only interested in your personal views and preferences. For the next task, please suppose that you could determine how the [own country] government spends money to support the energy transition.	

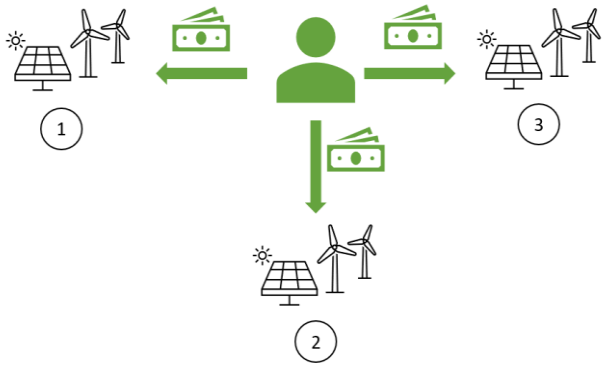
Outcome 1 : Relative policy support (budget allocation)

Order of policy options randomized

Imagine the [own country] government has a **budget for renewable energy of 100 million euros** per year which it can spend on the three categories of renewable energy policies below.

How would you have the federal government assign the money between the following three categories?

You can split the money between the three options but, you can also assign all the money (100) to one category and nothing to the others (in that case, please insert a zero (0)). In any case, please make sure to fully utilize the sum of 100 million euros in your distribution.



Use national funds to boost the development of **domestic** renewable energy projects	Million € _____
Use national funds to boost renewable energy projects **in developing countries**, on the **condition** of establishing energy trade agreements between these countries and [own country]	Million € _____
Use national funds to boost renewable energy projects in **developing countries**	Million € _____

Confidence about main outcome decision

How confident are you about your allocation of money?

Not confident at all; Slightly confident; Somewhat confident; Fairly confident; Completely confident

Outcome 2: Policy support (Likert with Disclaimer)

Order of policies randomized.

Thank you for your thoughtful response to the previous question. We understand that allocating government funds to different categories may be challenging. Now, we would like to simplify this task.
Remember that public funds are generated in part through tax contributions, and the government must choose where to allocate limited financial resources among renewable energy policies and many other policy sectors.

On a scale from 0 (strongly oppose) to 10 (strongly support), how much do you support government spending in each of the following categories?

- Use national funds to boost the development of **domestic** renewable energy projects
- Use national funds to boost renewable energy projects **in developing countries**, on the **condition** of establishing energy trade agreements between these countries and [own country]
- Use national funds to boost renewable energy projects in **developing countries**

Slider 0-10; labels at slider extremes: (strongly oppose) (strongly support)

Posterior beliefs

Posterior belief

Green hydrogen is hydrogen gas **produced using renewable energy sources** like solar or wind power. This process involves splitting water into hydrogen and oxygen using electricity generated from these renewable sources.

It has the potential to **reduce greenhouse gas emissions** in sectors where it is challenging to replace fossil fuels, such as heavy industry (such as steel production) and aviation. Green hydrogen can also be transported over longer distances through pipelines or ships, **allowing renewable energy trade** between countries.

Companies and policymakers sometimes can decide between making investments in their own country or investing in other countries, such as investments in green hydrogen infrastructure and technology development.

To what extent do you think **[own country]** would **benefit** from::
(?) There are **no right or wrong answers**. We are interested in your personal assessment regardless of your prior knowledge on the topic.

- investments in green hydrogen in [own country]?
- investments in green hydrogen in developing countries?

Not at all; Slightly; Moderately; Considerable; Very

To what extent do you think **developing countries** would **benefit** from:
(?) There are **no right or wrong answers**. We are interested in your personal assessment regardless of your prior knowledge on the topic.

- investments in green hydrogen in [own country]?
- investments in green hydrogen in developing countries?

Not at all; Slightly; Moderately; Considerable; Very

Additional survey questions	
H_2 partnerships To facilitate green hydrogen trade, [own country] can establish energy partnerships with other countries. For example, a **hydrogen partnership** between two countries can simplify the cooperation between companies or scientists from both countries. **How much do you agree or disagree with the following statements?** *5 point Likert scale: [strongly agree … strongly disagree + I don't know]* ● **[Partnership**] In general, [own country] should have hydrogen partnerships with other countries ● [**Joint infrastructure EU**] [own country] should support a common infrastructure at the European Union level, such as an European hydrogen pipeline network ● [**Minimize country risk**] [own country] should establish hydrogen partnerships with countries with the lowest risks, such as politically stable countries ● [**Minimize cost - in German survey only**] [own country] should import green hydrogen from countries with the lowest green hydrogen production cost	Order *not* randomized
Instruction In this section, we would like to learn more about **your views on renewable energy and developing countries**. Please remember that there are **no right or wrong answers**. We are interested in your personal assessment regardless of your prior knowledge on the topic. **How much do you agree or disagree with the following statements?** *5 point Likert scale: [strongly agree … strongly disagree + I don't know]*	
RE mechanisms ● [**Scaling effects**] A massive expansion of renewable energy is an important measure to reduce renewable energy cost ● [**Technology transfer**] If [own country] develops renewable energy technologies further, other countries will also benefit from the new knowledge ● [**RE independence**] [own country] can produce sufficient renewable energy to meet its own energy demand	Order randomized
Perception developing countries vs. own country **How much do you agree or disagree with the following statements?** *5 point Likert scale: Strongly agree … Strongly disagree + I don't know* ● [**Climate justice**] It is the obligation of industrialized countries to provide developing countries with financial resources as compensation, since industrialized countries have contributed more to climate change in the past ● [**RE potential]** Developing countries often have more favorable conditions (such as available land and higher solar radiation) to produce renewable energy as [own country] ● [**Strength of institutions**] [own country] has stronger institutions compared to developing countries ● [**Development aid (prev. Foreign aid)**] [own country] should provide financial resources to cooperate with developing countries to support	Order randomized

economic and sustainable development in the world	
Background variables II	
Instruction In the last part of this survey, we would like to learn more about your general circumstances and views on politics.	
Government efficiency On a scale from 0 (the government is wasteful) to 10 (the government is generally efficient), how would you rate the efficiency of the government in implementing policies and providing for public services? *Slider [0;10]*	Enke et al. 2023; Q91
Political views (Left vs Right-wing) Oftentimes, people speak of relatively left-wing and relatively right-wing political views. On a scale from 0 (very left-wing) to 10 (very right-wing), where would you place yourself on this scale? *Slider [0;10]*	Enke et al. 2023; QID296
Equity preferences (Redistribution policy demand) Redistribution of income means that the state reduces the income gap between citizens through taxes and money transfers. How much redistribution of income do you want between citizens in [own country]? "No redistribution" (0) means that the state does not intervene in the distribution of income. "Complete redistribution" (10) means that everyone earns the same amount after redistribution has been done. *[0=No redistribution; 10=Complete redistribution]*	Fehr et al., 2022 ; Q273 - ISP11A
Positive reciprocity How well does the following statement describe you as a person? Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." When someone does me a favor, I am willing to return it. *[0; 10]*	Andre et al. 2024, Rev. Econ. Stat
Negative reciprocity When someone treats me very unjustly, I am willing to take revenge at the first occasion, even if there is a cost to doing so. *[0; 10]*	Andre et al. 2024
Trust "As long as I am not convinced otherwise, I assume that people have only the best intentions." *[0; 10]*	Andre et al. 2024 & Falk et al. 2023
Household size How many people are in your household? The household includes: you, the members of your family who live with you (including children), and your dependents. This excludes flatmates. *1; 2; 3; 4; 5 or more; (Prefer not to say)*	Dechezlepêtre et al. 2025

Citizenship What is your citizenship? If you have more than one citizenship, please indicate all your citizenships. *German/ Spanish; Other, please specify: (Prefer not to say)*	Enke et al. 2023, Q101 ; Multiple-choice
Place of residence What is your current postal code? *Open-ended (only numbers)*	Enke et al. 2023, QID249
Urbanicity What type of agglomeration do you live in? I live in: • *A rural area (up to 5000 inhabitants)* • *A small town (5,000 – 20,000 inhabitants)* • *A large town (20,000 – 50,000 inhabitants)* • *A small city (50,000 – 250,000 inhabitants)* • *A large city (250,000 – 3,000,000 inhabitants)* • *A very large city (more than 3 million inhabitants).* • *Prefer not to say*	Dechezlepêtre et al 2025
Place of birth What is your country of birth? *Germany, Other, please specify:, Prefer not to say*	Enke et al. 2023; QID272
Ethnicity What ethnicity do you self-identify the most with? • *Black/ Afro/ African Descent* • *Arab/Western Asian/Turkish* • *White Latino* • *White Mediterranean/ White European* • *Eastern/South-eastern Asian* • *Center Asian* • *Mixed Descent/ Multiracial/ Multi-ethnic* • *Other* • *Prefer not to say*	
Migration parents What is the nationality of your parents? (Please select all that apply) • *German/ Spain* • *European (excluding Germany/ Spain)* • *Other* • *Prefer not to say*	Dechezlepêtre et al, 2025 Multiple answers allowed
Education How would you describe your educational attainment? • *No high school graduation* • *High school graduate* • *Vocational Training* • *Bachelor's degree* • *Master degree*	

• *Doctoral degree* • *Prefer not to say*	
Employment Are you employed at the moment? • *Yes, I am full time employed* • *Yes, I am part time employed* • *Yes, I am sometimes or irregularly employed* • *No, I am retired* • *No, I am not employed* • *(Prefer not to say)*	
Feedback	
Credibility of information On this last survey page are interested in your feedback on the survey. How credible did you find the statements/ information provided in this survey? *Very non-credible, Non-credible, Neutral, Credible, Very credible*	
Feedback Do you have any comments or feedback on this survey? For example, were there any questions you found confusing? *(open-ended, optional)*	

References

Abildtrup, J., Jacobsen, J. B., Vedel, S. E., Mantau, U., Mavsar, R., Pettenella, D., Prokofieva, I., Schubert, F., Stenger, A., Varela, E., Vidale, E., & Thorsen, B. J. (2024). Preferences for climate change policies: the role of co-benefits. *Journal of Environmental Economics and Policy*, *13*(1), 110–128. https://doi.org/10.1080/21606544.2023.2223182

Alesina, A., Ferroni, M. F., & Stantcheva, S. (2021). Perceptions of Racial Gaps, their Causes, and Ways to Reduce Them. *National Bureau of Economic Research Working Paper Series*, *No. 29245*. https://doi.org/10.3386/w29245

Anderson, B., & Bernauer, T. (2016). How much carbon offsetting and where? Implications of efficiency, effectiveness, and ethicality considerations for public opinion formation. *Energy Policy*, *94*, 387–395. https://doi.org/10.1016/j.enpol.2016.04.016

Andre, P., Boneva, T., Chopra, F., & Falk, A. (2024). Misperceived Social Norms and Willingness to Act Against Climate Change. *The Review of Economics and Statistics*, 1–46. https://doi.org/10.1162/rest{\textunderscore}a{\textunderscore}01468

Andre, P., Haaland, I., Roth, C., Wiederholt, M., & Wohlfart, J. (2025). Narratives about the Macroeconomy. *The Review of Economic Studies (Accepted)*.

Bain, P. G., Milfont, T. L., Kashima, Y., Bilewicz, M., Doron, G., Garðarsdóttir, R. B., Gouveia, V. V., Guan, Y., Johansson, L.-O., Pasquali, C., Corral-Verdugo, V., Aragones, J. I., Utsugi, A., Demarque, C., Otto, S., Park, J., Soland, M., Steg, L., González, R., … Saviolidis, N. M. (2016). Co-benefits of addressing climate change can motivate action around the world. *Nature climate change*, *6*(2), 154–157. https://doi.org/10.1038/nclimate2814

Baker, E., Bosetti, V., Anadon, L. D., Henrion, M., & Aleluia Reis, L. (2015). Future costs of key low-carbon energy technologies: Harmonization and aggregation of energy technology expert elicitation data. *Energy Policy*, *80*, 219–232. https://doi.org/10.1016/j.enpol.2014.10.008

Barron, K., & Fries, T. (2024). Narrative Persuasion. https://doi.org/10.48462/opus4-5426

Baumol, W. J. (2010). *The Microtheory of Innovative Entrepreneurship* (STU - Student edition). Princeton University Press. https://doi.org/10.2307/j.ctt21668j9

Bechtel, M. M., Genovese, F., & Scheve, K. F. (2019). Interests, Norms and Support for the Provision of Global Public Goods: The Case of Climate Co-operation. *British Journal of Political Science*, *49*(4), 1333–1355. https://doi.org/10.1017/S0007123417000205

Brown, P. (2017). Narrative: An ontology, epistemology and methodology for pro-environmental psychology research [Narratives and Storytelling in Energy and Climate Change Research]. *Energy Research Social Science*, *31*, 215–222. https://doi.org/https://doi.org/10.1016/j.erss.2017.06.006

Bundesministerium für Wirtschaft und Klimaschutz. (2024). Importstrategie für Wasserstoff und Wasserstoffderivate.

Buntaine, M. T., & Prather, L. (2018). Preferences for Domestic Action Over International Transfers in Global Climate Policy. *Journal of Experimental Political Science*, *5*(2), 73–87. https://doi.org/10.1017/XPS.2017.34

Cappelen, A. W., Enke, B., & Tungodden, B. (2025). Universalism: Global Evidence. *American Economic Review*, *115*(1), 43–76. https://doi.org/10.1257/aer.20230038

Carattini, S., & Roesti, M. (2025). Trust, Happiness, and Pro-social Behavior. *The Review of Economics and Statistics*, *107*(4), 967–981. https://doi.org/10.1162/rest{\textunderscore}a{\textunderscore}01303

Dechezleprêtre, A., Fabre, A., Kruse, T., Planterose, B., Sanchez Chico, A., & Stantcheva, S. (2025). Fighting Climate Change: International Attitudes toward Climate Policies. *American Economic Review*, *115*(4), 1258–1300. https://doi.org/10.1257/aer.20230501

Diederich, J., & Goeschl, T. (2018). Voluntary action for climate change mitigation does not exhibit locational preferences. *Journal of Environmental Economics and Management*, *90*, 175–180. https://doi.org/10.1016/j.jeem.2018.03.006

Dolšak, N., & Prakash, A. (2022). Three Faces of Climate Justice. *Annual Review of Political Science*, *25*(Volume 25, 2022), 283–301. https://doi.org/10.1146/annurev-polisci-051120-125514

Eliaz, K., & Spiegler, R. (2020). A Model of Competing Narratives. *American Economic Review*, *110*(12), 3786–3816. https://doi.org/10.1257/aer.20191099

Enke, B. (2024). Moral Boundaries. *Annual Review of Economics*, *16*(Volume 16, 2024), 133–157. https://doi.org/10.1146/annurev-economics-091223-093730

Enke, B., Fisman, R., Freitas, L. M., & Sun, S. (2024). Universalism and Political Representation: Evidence from the Field. *American Economic Review: Insights*, *6*(2), 214–229. https://doi.org/10.1257/aeri.20230222

Enke, B., Rodríguez-Padilla, R., & Zimmermann, F. (2021). Moral Universalism: Measurement and Economic Relevance. *Management Science*, *68*(5), 3590–3603. https://doi.org/10.1287/mnsc.2021.4086

Enke, B., Rodríguez-Padilla, R., & Zimmermann, F. (2023). Moral Universalism and the Structure of Ideology. *The Review of Economic Studies*, *90*(4), 1934–1962. https://doi.org/10.1093/restud/rdac066

Falk, A., Becker, A., Dohmen, T., Huffman, D., & Sunde, U. (2022). The Preference Survey Module: A Validated Instrument for Measuring Risk, Time, and Social Preferences. *Management Science*, *69*(4), 1935–1950. https://doi.org/10.1287/mnsc.2022.4455

Fehr, D., Mollerstrom, J., & Perez-Truglia, R. (2022). Your Place in the World: Relative Income and Global Inequality. *American Economic Journal: Economic Policy*, *14*(4), 232–268. https://doi.org/10.1257/pol.20200343

Feldhaus, C., Gleue, M., Löschel, A., & Werner, P. (2026). The role of co-benefits in motivating climate change mitigation – Experimental evidence. *Ecological Economics*, *239*, 108783. https://doi.org/10.1016/j.ecolecon.2025.108783

Franke, K., Garcia, J. F., Kleinschmitt, C., & Sensfuß, F. (2024). Assessing worldwide future potentials of renewable electricity generation: Installable capacity, full load hours and costs. *Renewable Energy*, *226*, 120376. https://doi.org/10.1016/j.renene.2024.120376

Gaikwad, N., Genovese, F., & Tingley, D. (2022). Creating Climate Coalitions: Mass Preferences for Compensating Vulnerability in the World's Two Largest Democracies. *American Political Science Review*, *116*(4), 1165–1183. https://doi.org/10.1017/S0003055422000223

Gaikwad, N., Genovese, F., & Tingley, D. (2025). Climate Action from Abroad: Assessing Mass Support for Cross-Border Climate Transfers. *International Organization*, *79*(1), 146–172. https://doi.org/10.1017/S0020818324000365

Graeber, T., Zimmermann, F., & Roth, C. (2022). Stories, Statistics, and Memory.

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, *96*(5). https://doi.org/10.1037/a0015141

Haaland, I., Roth, C., & Wohlfart, J. (2023). Designing Information Provision Experiments. *Journal of Economic Literature*, *61*(1), 3–40. https://doi.org/10.1257/jel.20211658

Hatemi, P. K., Crabtree, C., & Smith, K. B. (2019). Ideology Justifies Morality: Political Beliefs Predict Moral Foundations. *American Journal of Political Science*, *63*(4), 788–806. https://doi.org/10.1111/ajps.12448

Henningsen, A. (2024). censReg: Censored Regression (Tobit) Models: Maximum Likelihood estimation of censored regression (Tobit) models with cross-sectional and panel data. https://doi.org/10.32614/CRAN.package.censReg

Hillenbrand, A., & Verrina, E. (2022). The asymmetric effect of narratives on prosocial behavior. *Games and Economic Behavior*, *135*, 241–270. https://doi.org/10.1016/j.geb.2022.06.008

Iamsiraroj, S. (2016). The foreign direct investment economic growth nexus. *International Review of Economics & Finance*, *42*, 116–133. https://doi.org/10.1016/j.iref.2015.10.044

IEA. (2024). World Energy Investment 2024 (2nd ed.).

Instituto Nacional de Estadística. (2025). Censos de Población y Viviendas 2021.

IRENA. (2025). Statistics Data.

Jo, A., & Carattini, S. (2021). Trust and CO2 emissions: Cooperation on a global scale. *Journal of Economic Behavior & Organization*, *190*, 922–937. https://doi.org/10.1016/j.jebo.2021.08.010

Karlsson, M., Alfredsson, E., & and Westling, N. (2020). Climate policy co-benefits: a review. *Climate Policy*, *20*(3), 292–316. https://doi.org/10.1080/14693062.2020.1724070

Kendall, C. W., & Charles, C. (2022). Causal Narratives. *National Bureau of Economic Research Working Paper Series*, *No. 30346*. https://doi.org/10.3386/w30346

Leipprand, A., Flachsland, C., & Pahle, M. (2017). Advocates or cartographers? Scientific advisors and the narratives of German energy transition. *Energy Policy*, *102*, 222–236. https://doi.org/10.1016/j.enpol.2016.12.021

Löschel, A., Pei, J., Wang, R., Sturm, B., Buchholz, W., & Zhao, Z. (2021). The Demand for Global and Local Environmental Protection: Experimental Evidence from Climate Change Mitigation in Beijing. *Land Economics*, 061219–0076R1. https://doi.org/10.3368/wple.97.1.061219-0076R1

MacKerron, G. J., Egerton, C., Gaskell, C., Parpia, A., & Mourato, S. (2009). Willingness to pay for carbon offset certification and co-benefits among (high-)flying young adults in the UK. *Energy Policy*, *37*(4), 1372–1381. https://doi.org/10.1016/j.enpol.2008.11.023

Malone, E., Hultman, N. E., Anderson, K. L., & Romeiro, V. (2017). Stories about ourselves: How national narratives influence the diffusion of large-scale energy technologies [Narratives and Storytelling in Energy and Climate Change Research]. *Energy Research Social Science*, *31*, 70–76. https://doi.org/https://doi.org/10.1016/j.erss.2017.05.035

Mattoo, A., & Subramanian, A. (2012). Equity in Climate Change: An Analytical Review. *World Development*, *40*(6), 1083–1097. https://doi.org/10.1016/j.worlddev.2011.11.007

MITECO. (2024). Plan Nacional Integrado de Energía y Clima: Actualización 2023-2030.

Müller, J. M. (2018). Narrative im Innovationsgeschehen der Energiewende. In J. Hergesell, A. Maibaum, C. Minnetian, & A. Sept (Eds.), *Innovationsphänomene: Modi und Effekte der Innovationsgesellschaft* (pp. 225–246). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-22734-0{\textunderscore}12

Ohlendorf, N., Löhr, M., & Markard, J. (2023). Actors in multi-sector transitions - discourse analysis on hydrogen in Germany. *Environmental Innovation and Societal Transitions*, *47*, 100692. https://doi.org/10.1016/j.eist.2023.100692

Shiller, R. J. (2017). Narrative Economics. *The American Economic Review*, *107*(4), 967–1004.

Sorman, A. H., Pizarro-Irizar, C., García-Muros, X., González-Eguino, M., & Arto, I. (2019). Spain. In *On a rollercoaster of regulatory change – risks and uncertainties associated with renewable energy transitions*. Routledge. https://doi.org/10.4324/9780429458781-8

Statistisches Bundesamt. (2025). Mikrozensus.

Touboul, S., Glachant, M., Dechezleprêtre, A., Fankhauser, S., & Stoever, J. (2023). Invention and Global Diffusion of Technologies for Climate Change Adaptation: A Patent Analysis. *Review of Environmental Economics and Policy*, *17*(2), 316–335. https://doi.org/10.1086/725365

Vestrelli, R., Fronzetti Colladon, A., Fabiani, C., & Pisello, A. L. (2025). Energy narratives in europe: Exploring the link between online news and renewable energy production. *Energy Research Social Science*, *128*, 104345. https://doi.org/https://doi.org/10.1016/j.erss.2025.104345