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Beliefs About EU 2030 Climate Commitments Across Public, Expert, and Policy Audiences

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Abstract

The European Union (EU) has adopted ambitious climate policies to reduce greenhouse gas emissions by 55% by 2030. While technical, economic, and political feasibility have been widely analyzed, far less is known about a critical enabling factor: whether key societal actors perceive these targets as credible and achievable. In this study, we elicit probabilistic beliefs about future EU emission reductions from a sample of citizens designed to be representative across 12 EU member states and compare them with the expectations of climate policymakers and experts. Our findings reveal that all three groups anticipate substantial progress compared to current levels. At the same time, citizens are more skeptical about achieving the target and substantially more uncertain than elites, expecting, on average, a 43% reduction by 2030 compared to the EU's 55% reference. Moreover, we identify a notable misalignment: elites tend to systematically underestimate public skepticism. This gap underscores the need to improve policy communication, directly address citizens' concerns, and foster a shared understanding to enhance the perceived credibility and political sustainability of the EU's climate goals.

Introduction

In recent years, the European Union (EU) and many other countries have launched ambitious programs to drastically reduce greenhouse gas emissions (Fankhauser et al., 2022). Central to the EU's strategy is the European Climate Law, which formalizes the goals of the European Green Deal: achieving climate neutrality by 2050 and at least a 55% reduction in net greenhouse gas emissions by 2030, relative to 1990 levels. To operationalize these targets, the EU introduced the *Fit-for-55* package, a comprehensive set of legislative proposals designed to align EU policies with the 2030 target and place the EU on a credible path toward long-term decarbonization. While the technical, economic, and political aspects of these frameworks have been widely studied, a key enabling condition remains underexplored: whether citizens and relevant elites perceive these policy goals as credible and achievable.

Public beliefs about a policy are politically consequential: they shape behavioral responses, influence support and compliance, and ultimately feed back into the policy's long-term implementation and political sustainability (Bicchieri, 2005; Jacobs and Weaver, 2015). In this sense, beliefs serve a dual role: as a diagnostic tool, reflecting how people anticipate a policy's effects, and as a determinant of success, shaping whether individuals and groups are willing to adapt, comply with, and continue supporting the policy over time.

Beliefs about the expected impacts of a climate policy strategy may be shaped by a range of underlying factors. They can reflect individuals' knowledge or assumptions about climate policy and its anticipated effects (Dechezleprêtre et al., 2025); concerns about the policy's effectiveness and feasibility (Döbbeling-Hildebrandt, 2024; van Soest et al., 2021); and perceived technological, economic, or social barriers that may hinder its success (Bertram et al., 2024; Brutschin et al., 2021). When beliefs are elicited conditional on a given level of policy ambition, they also reflect concerns about policy credibility, namely expected compliance and whether the policy will be implemented, enforced, and sustained over time (Victor et al., 2022; Nemet et al., 2017). Understanding beliefs is thus essential not only for assessing perceptions of specific climate policies but also for evaluating their long-term political viability.

Despite their potential central role in shaping support, subjective beliefs about future climate outcomes have rarely been studied in detail. Most existing studies rely on qualitative estimates, asking respondents to agree or disagree with general statements such as whether a given policy is effective in reducing emissions or influencing behavior. Such responses provide limited insight into how individuals perceive quantitative policy goals, even though this is precisely how policymakers tend to communicate climate objectives to the public. Understanding how citizens interpret and internalize such targets is therefore essential. Moreover, qualitative measures offer no indication of the uncertainty underlying individuals' beliefs.

Unlike studies that focus solely on elite perceptions (Victor et al., 2022; Wynes et al., 2024), we incorporate the views of the general public, policymakers, and experts to provide a more comprehensive picture of how the EU's climate policy strategy is understood, anticipated, and evaluated across different populations. This elite–non-elite comparison allows us to assess whether beliefs align with the EU's stated climate objectives and whether there exist gaps between citizens and elites. We also elicited elites' second-order beliefs to evaluate whether those who design, advise on, and implement climate policies, have an accurate view of public expectations, and to quantify the gap between citizens' actual beliefs and elites' perceptions of those beliefs.

Methods

We examine *subjective beliefs* about future climate outcomes by eliciting respondents' probability distributions regarding the expected reduction in total EU net greenhouse gas emissions by 2030, relative to 1990 levels. We developed and fielded a new belief-elicitation module in a broad sample of citizens, designed to be demographically representative across 12 EU member states (N = 2,620), allowing us to estimate individual belief central expectations, uncertainty, and confidence. In parallel, we surveyed 76 climate policymakers and experts, eliciting both their own beliefs and their second-order beliefs about citizens' expectations. This dual-sample design enables a systematic comparison between citizen and expert beliefs, and allows us to identify misalignments between expectations and official climate targets, and between elites' perceptions and citizens' actual expectations.

Eliciting probabilistic beliefs

We asked participants to allocate probability mass across four non-overlapping intervals spanning the full range of possible emissions reduction levels. This elicitation technique enables the construction of an individual-level probability density function. We first provided respondents with the following contextual information:

> *"The EU has developed a package of policies, called Fit-for-55, to enable the EU to reduce its net greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels. (Note for context: By the year 2022, the EU net emissions had been reduced by 32.5% compared to their 1990 levels.)"* [1]

We then asked "*What do you think is the percent chance that the reduction in total greenhouse gas emissions by 2030 compared to 1990 levels will be*", over four distinct outcome categories:

A) **2022 levels or less:** A reduction of **32.5% or less** – no further progress beyond what was achieved by 2022.

B) **Slight extra reduction:** A reduction of **more than 32.5% but no more than 45%** – some additional progress, but falling short of the EU's 2030 target.

[1] This contextual note is based on data available at the time the survey was launched and draws from the European Commission (2023).

C) **Moderate extra reduction:** A reduction of **more than 45% but less than 55% –** substantial improvement, but still missing the 2030 goal.

D) **European Climate Law target:** A reduction of **55% or more –** successfully reaching or surpassing the EU's official 2030 target.

As respondents entered their answers, the interface displayed a running "Total" showing the cumulative sum of their percent-chance responses. We first provided a brief introduction to interpreting numerical probabilities. Participants were instructed to base their allocations on their personal beliefs about the likelihood of each outcome. They were reminded that assigning 100% (or 0%) indicated complete certainty that an event would (or would not) occur, whereas distributing probabilities equally across all outcomes reflected total uncertainty. After allocating the probability mass, respondents reported their confidence in their answers, on a 5-point Likert scale. For second-order beliefs, elites were also asked to report what they believed citizens had answered, using the same module.

Data Collection

We fielded the belief-elicitation module as part of the EU Horizon CAPABLE survey, a demographically representative online survey conducted across 13 EU member states (see Smith et al., 2026). The module was randomly administered to a subset of respondents in each country. For proprietary reasons, we exclude data from the Czech Republic and analyze beliefs for 12 EU countries. Data were collected between June and August 2024, from N=2,620 validated respondents in Austria, Denmark, France, Germany, Greece, Italy, Hungary, the Netherlands, Poland, Slovenia, Spain, and Sweden, recruited through an online panel provided by Dynata. The study protocol was approved by the ETH Zurich Ethics Committee (EK 2024-N-141) and pre-registered (https://osf.io/9dmvh/). The belief-elicitation module is unique to this study. Further details on sampling, quality-control procedures, and the representativeness of the sample are provided in the Supplementary Material.

In parallel, we surveyed 76 political and scientific elites, either professionally involved in climate policymaking (officials from the EU, international institutions, or national governments) or in climate research. These elites typically have more in-depth knowledge of climate policy and more familiarity with policy design and implementation. We collected data between November 2024 and February 2025. Invitations were distributed via professional mailing lists, targeted outreach, and follow-up reminders using a purposive sampling strategy. This sample is not intended to be statistically representative of all climate policymakers or experts in Europe; instead, it provides an illustrative benchmark against which to compare public beliefs. The survey was conducted anonymously online and pre-registered (https://osf.io/5zgke/).

Central expectations and degrees of uncertainty

To examine subjective beliefs, we summarize the individual distributions by two key metrics: the central expectation and degree of uncertainty. The central expectation reflects individual's estimate of the most likely emissions reduction by 2030. It is calculated as the weighted mean of responses from the belief allocation module. We assigned midpoint values to each outcome category, 27.5%, 38.75%, 50%, and 60% for categories A through D, respectively, assuming beliefs are uniformly distributed within each interval. This non-parametric approach estimates the expected reduction, assuming beliefs fall within a defined range from 22.5% to 65%. In the Supplementary Material, we test the robustness of this metric by applying alternative approaches and show that they yield similar results.

Belief uncertainty is quantified using an entropy-based index that summarizes how respondents spread their probability mass across the four categories. The index ranges from 0 (complete certainty, with all probability mass assigned to a single category) to 1 (maximum uncertainty, with probability mass uniformly distributed across all four categories), providing a standardized measure that enables meaningful comparisons across individuals. If a respondent splits their belief equally between two of the four categories, the normalized entropy index is 0.5.

The determinants of subjective beliefs

We examine the determinants of beliefs by regressing individuals' central expectations and uncertainty levels on a broad set of demographic and attitudinal predictors. All continuous variables are standardized as Z-scores, allowing coefficients to be interpreted as the effect of a one-standard-deviation increase in the predictor. The dependent variables are scaled to 0–100, so the estimated coefficients represent percentage-point changes. The initial pool of explanatory variables included three categories: (1) Antecedent variables comprised policy-specific knowledge, institutional trust, climate-related attitudes, and value orientations (see Stern et al., 1995). (2) Sociodemographic controls included age groups, education, income, gender, living area, and political orientation. (3) We also included country fixed effects to account for unobserved national differences. To improve model parsimony and retain only robust predictors, we applied backward elimination, sequentially removing the variable with the highest p-value until all remaining predictors were statistically significant at the 1% level.

Beliefs and policy support

As optimism may encourage endorsement, climate beliefs may be correlated with policy support. To examine this relationship, we pooled citizens' support over five climate policies, which correspond to key elements of the EU's *Fit-for-55* package, including the Emissions Trading System (ETS), the Carbon Border Adjustment Mechanism (CBAM), and transport sector regulations. Each respondent rated their support for each policy on a 7-point Likert scale, from '*Strongly Opposed*' to '*Strongly in Favour*.' We measure overall support by averaging respondents' evaluations of the five policies. This composite indicator is justified by the strong internal consistency of attitudes across the policies (Cronbach's $\alpha = 0.785$). The resulting measure ranges from −3 (strong opposition) to 3 (strong support). We then analyze how these support scores vary across terciles of individual beliefs' central expectation about 2030 EU emissions reductions (categorized as 'low', 'medium', and 'high').

Results

Subjective beliefs about EU emissions reduction by 2030

We begin by examining subjective beliefs about future EU emissions reductions across different respondent groups. Figure 1a presents the historical trajectory of EU greenhouse gas emissions alongside official targets. Superimposed are illustrative probability distributions for expected 2030 emissions, shown for a representative respondent from each of the three groups: citizens, experts, and policymakers. These curves are derived by fitting normal distributions to the average probabilistic beliefs within each group.

A first important observation is that central expectations are relatively aligned across groups: all three generally expect substantial emissions reductions by 2030, but do not anticipate that the EU's 55% target will be fully achieved. The average central estimate among citizens is a 43% reduction, representing a significant improvement over current levels but still falling short of the official 55% target (see Figure 1a). Similarly, experts and policymakers foresee 46% and 50% reductions, respectively, indicating a shared view that substantial progress is likely, even if the target is unlikely to be fully met.

Within this broad alignment, we find significant and substantively meaningful differences in belief levels and uncertainty. Compared to experts and policymakers, the general public is more pessimistic and substantially more uncertain about emissions reductions by 2030. Average expectations among policymakers exceed those of citizens by 1.08 standard deviations (0.46 standard deviations for experts). Re-expressed in terms of "additional effort" needed to reach the target, citizens expect the EU to deliver about 44% of the remaining necessary reductions, compared with 60% for experts and 77% for policymakers. Yet even elites remain cautious: experts assign only a 14% probability to fully meeting the Climate Law target, while policymakers are somewhat more optimistic at 29% (difference, p=0.010, two-sided t-test).

Figures 1b and 1c display the distributions of individual central expectations and uncertainty across groups. Climate experts and policymakers report significantly higher expected emission reductions than citizens ($p < 0.001$ for both; two-sided t-test). At the same time, citizens exhibit greater uncertainty, with a mean entropy index of 0.71 compared to 0.54 for policymakers (p=0.002, two-sided t-test) and 0.64 for experts (p=0.060, two-sided t-test). Lastly, confidence follows a similar pattern: policymakers and experts report higher confidence (averages of 3.1 and 2.8, respectively) than citizens (2.5), with statistically significant differences (p=0.001 for policymakers and $p = 0.05$ for experts, two-sided t-test).

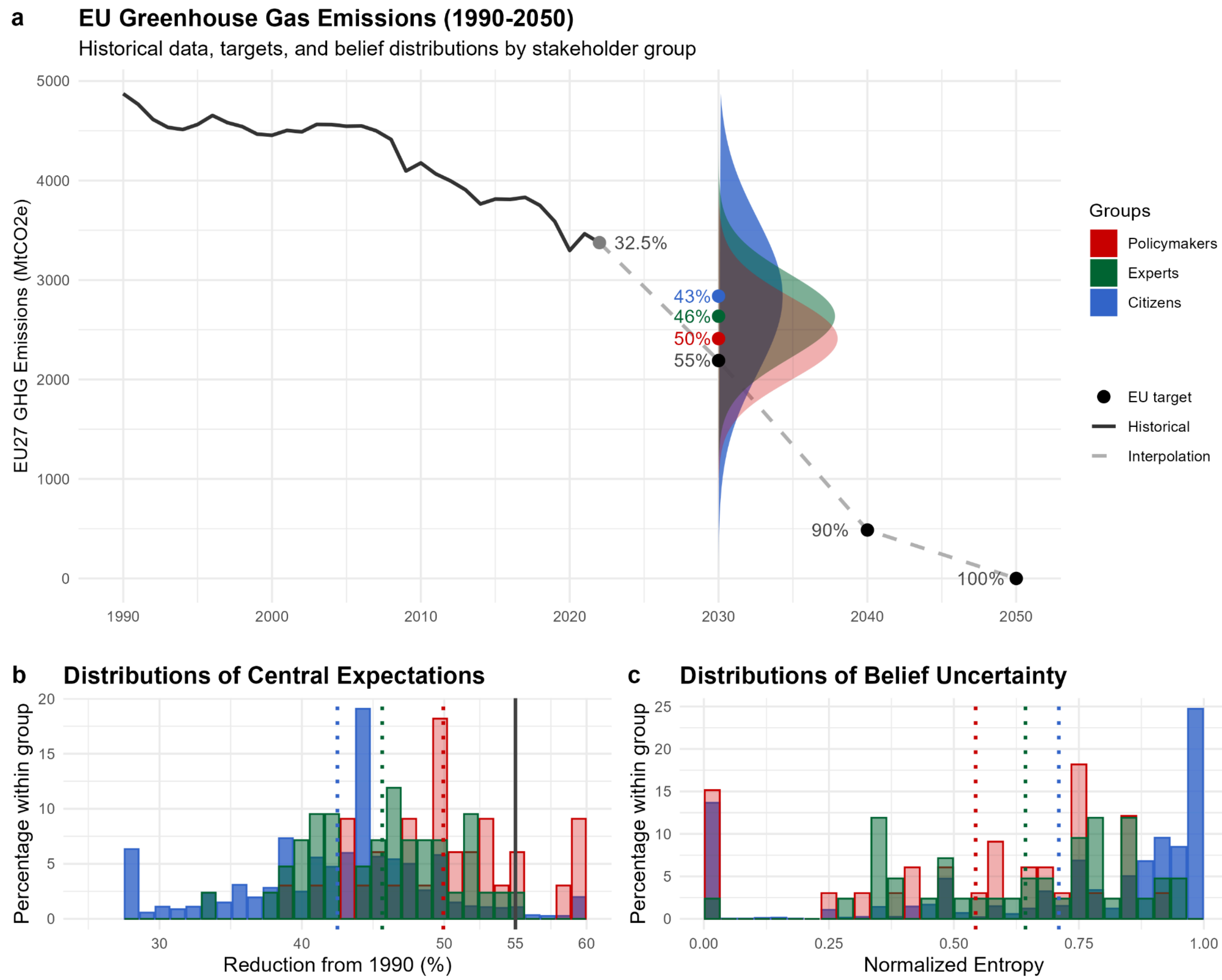

Figure 1: EU greenhouse gas emissions and beliefs about their expected reduction by 2030. a, Historical EU greenhouse gas emissions, official EU targets, and probabilistic beliefs of an average respondent in each group about total EU net emission reductions by 2030 (relative to 1990 levels) under the current EU climate policy. **b**, Distributions of individual central expectations, computed as the weighted mean of the individual's belief allocation. **c**, Distributions of individual belief uncertainty, measured by the normalized entropy index.

Country heterogeneity

While Figures 1b and 1c reveal substantial heterogeneity in individual beliefs about 2030 emissions reductions, further analysis suggests that country-level differences do not primarily drive this variation. Figures 2a and 2b show that both central expectations and belief uncertainty are remarkably consistent across EU member states. In particular, there is a shared expectation that emissions will decline relative to today, while the average belief about 2030 emissions reductions falls short of the official EU target in every country. Belief uncertainty remains high across the Union, except in France, where it is slightly lower. These findings suggest that public skepticism about fully meeting EU climate goals is not confined to specific national contexts but reflects a broader, cross-border phenomenon. This uniformity is notable given the significant variation in other national-level indicators, such as trust in the European Parliament, climate worry, and policy support.

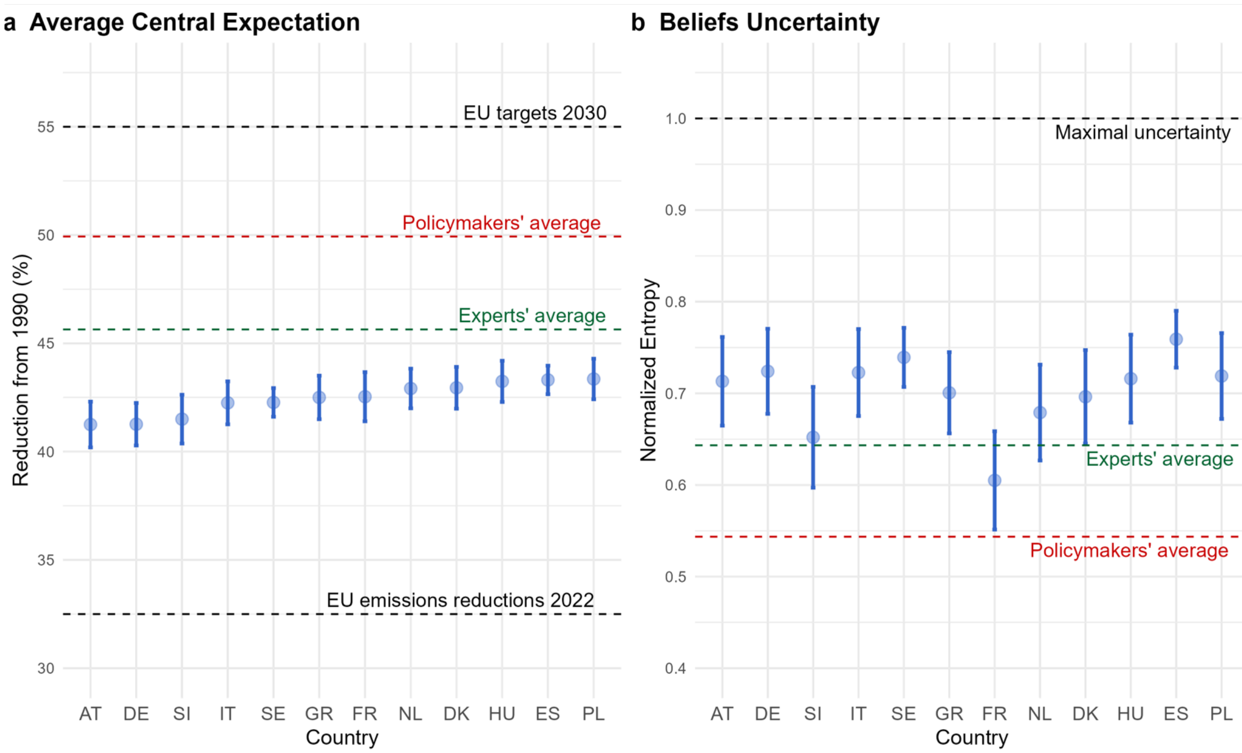

Figure 2: Beliefs about expected EU greenhouse gas emission reductions by 2030 by country. **a,** Average central expectation by country, with 95% confidence intervals. **b,** Average belief uncertainty by country, with 95% confidence intervals.

The determinants of beliefs and the relationship with policy support

We then examine potential drivers of beliefs about future EU emissions. Our analysis shows that standard predictors of climate beliefs, such as demographic and attitudinal variables (Hornsey et al., 2016), have limited explanatory power for citizens' beliefs about expected emissions reductions and their related uncertainty. As shown in Figure 3a, sociodemographic variables and political ideology are consistently excluded when a backward selection algorithm is applied to regression models with either the central expectation or belief uncertainty as the dependent variable. As anticipated from the previous section, country-level differences also appear to play a minimal role. These findings suggest that relative skepticism toward EU climate policy goals is broadly shared across sociodemographic groups and political orientations. However, variation in belief uncertainty appears to be partially shaped by individual characteristics: younger respondents tend to express higher levels of uncertainty, while those with higher levels of education report more certainty.

Figure 3b illustrates how average support for core EU climate policies varies across citizen groups with different beliefs. We find that individuals in the most pessimistic belief group do not, on average, support (or oppose) the *Fit-for-55* policies (average score of 0.01) whereas support reaches an average score of 0.52 among those in the more optimistic group. The difference, although modest on a Likert scale, is non-negligible given the low degree of heterogeneity observed and represents 0.42 standard deviations. Consistently, when we regress the level of support on the average expectation, its coefficient is strongly significant, even after controlling for the characteristics used in the regressions in Figure 3a (p<0.001). The same pattern emerges using an alternative measure of climate policy support (see Supplementary Material).

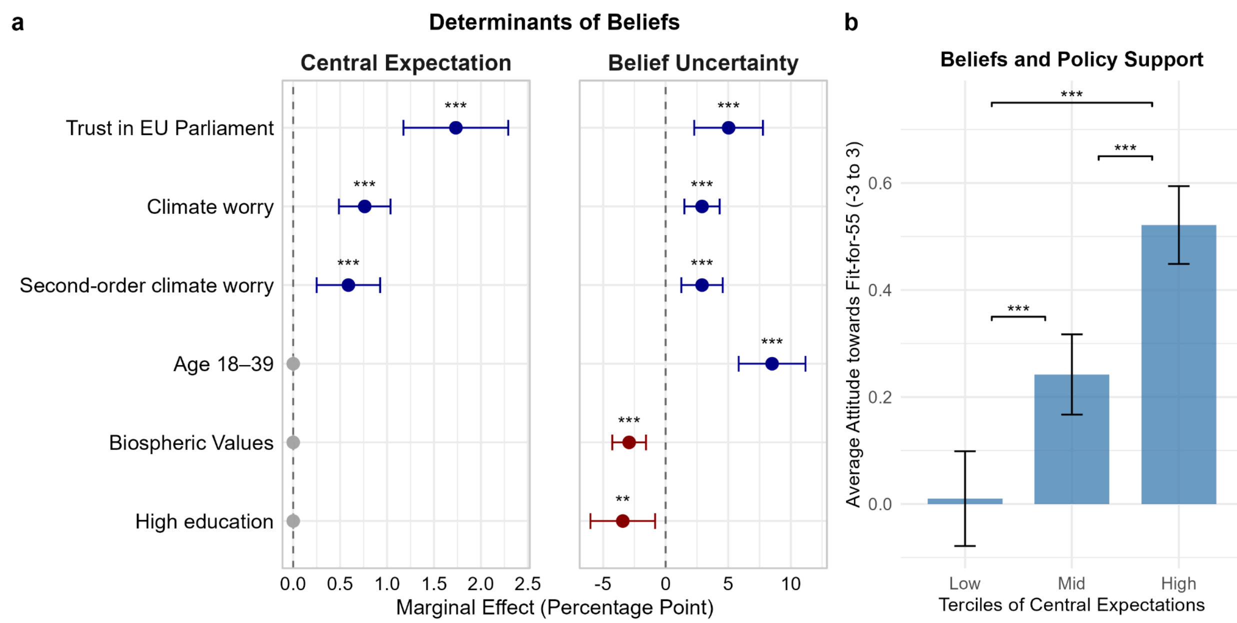

Figure 3: Determinants and impacts of beliefs about EU greenhouse gas emission reductions by 2030. **a,** Estimated marginal effects of antecedent and socio-demographic variables on central expectation and belief uncertainty. The plot displays the OLS coefficients from regressing the individual belief, central expectation, and uncertainty. Error bars represent 95% confidence intervals. The figure shows results for significant variables only. Non-significant variables, as well as all country dummies, are excluded. Star signs indicate significance levels: ***: p<0.001, **: p<0.01. **b,** Average support for the Fit-for-55 policies across terciles of beliefs' central expectations. Error bars indicate 95% confidence intervals.

The role of second-order beliefs

Figure 4 shows that political and scientific elites correctly recognize that the public holds more pessimistic views than they do. However, they systematically underestimate the extent of this skepticism. Specifically, elites slightly overestimate the public's central expectation of emissions reductions (44.6% vs. 42.5%, p<0.001, two-sided t-test). This misalignment is particularly pronounced for the most pessimistic outcome (no reduction beyond 2022 levels), where the public assigns a higher probability than elite estimates by 12.12 percentage points ($p < 0.001$, two-sided t-test). Smaller but statistically significant gaps also appear for small and moderate reduction scenarios (–5.69 and –6.29 percentage points; p = 0.006 and p = 0.001, respectively).

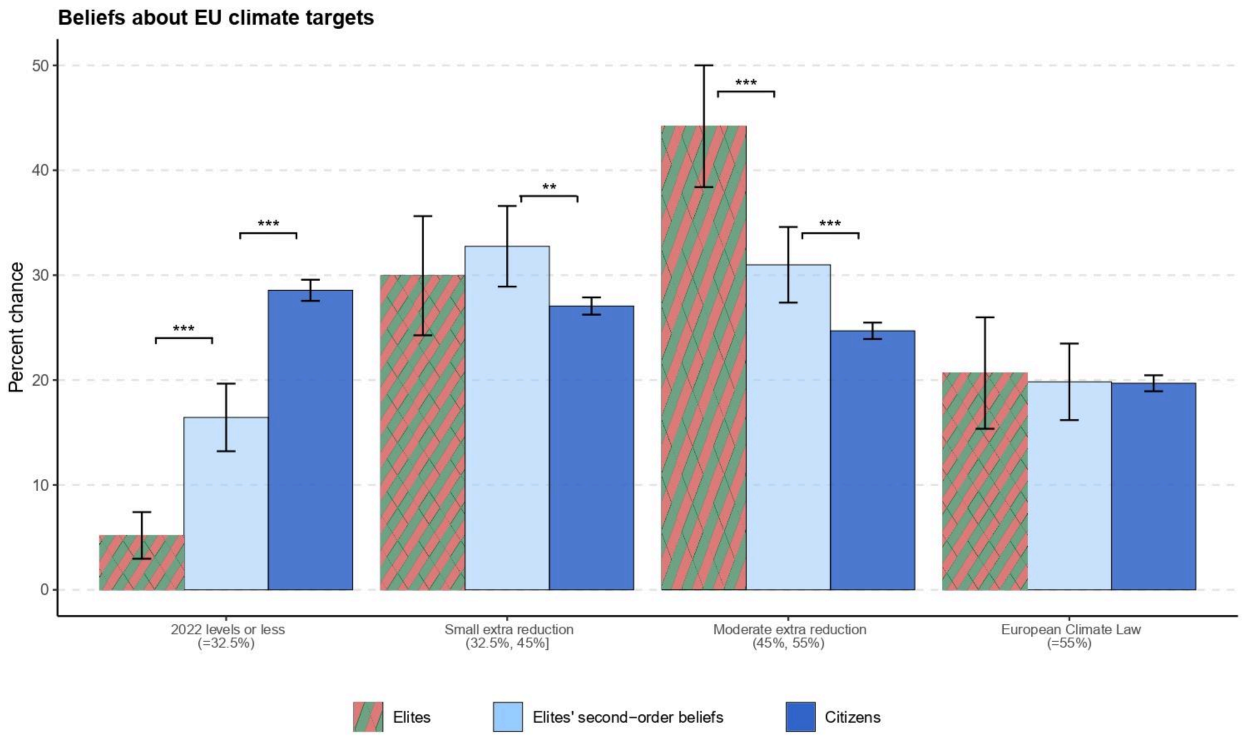

Figure 4: First vs. Second-Order Beliefs. Average percent chance allocated by different groups to each of four mutually exclusive intervals representing possible levels of total EU net greenhouse gas emission reductions by 2030 (relative to 1990 levels). Light blue bars represent elites' second-order beliefs about how citizens distribute these chances. Star signs indicate mean differences: ***: $p<0.001$, **: $p<0.01$ based on two-sided t-tests.

Discussion

Beliefs about future emissions may be shaped by factors such as limited knowledge, concerns about policy effectiveness, and political or social feasibility. When expectations are elicited conditional on a given level of policy ambition, beliefs about expected compliance may be interpreted as a measure of policy credibility. The objective of this paper is to document subjective beliefs among elites and non-elites about future EU greenhouse gas emissions, conditional on the current climate policy framework that entered into force in 2021. These beliefs should not be interpreted as probabilities over exogenous states of the world, such as the likelihood of a natural disaster. Instead, they concern outcomes that depend on political decisions, implementation, and societal responses. While a single individual's belief has a negligible direct impact on policy, aggregated societal beliefs can shape expectations about a policy's durability, enforcement, and political support, which, in turn, affect the probability that the policy will be maintained. In this sense, the probabilities we elicit are better understood as beliefs about an equilibrium outcome of the policy and political process, rather than as subjective uncertainty over fixed states of nature (Angeletos et al., 2018).

Relative skepticism about achieving the climate targets

A first important message of our results is that citizens, experts, and policymakers do not hold entirely distinct belief systems. Their central expectations for 2030 emissions reductions are relatively close: all three groups anticipate substantial progress compared to current levels and, on average, do not expect outcomes that fall dramatically short of current ambitions. This points to a non-trivial, shared sense of credibility of the 2030 target, even though it is not seen as fully attainable. Within this broad alignment, however, we uncover systematic differences in both the *level* and *spread* of the beliefs. Citizens are somewhat more pessimistic and substantially more uncertain than elites, while experts and policymakers expect larger reductions, closer to the 55% target. Yet, they still attach relatively low probabilities (around 14% and 29%, respectively) to fully meeting it.

Taken together, these patterns suggest that the EU's climate policy, although legally binding, has not yet been perceived as entirely credible by the public or key institutional elites. If policy credibility depends not only on design but also on the political and institutional context, then the strong association we document between trust in EU institutions and more optimistic expectations about emissions reductions suggests that questions of institutional performance and political legitimacy are central to policy credibility. Our findings are therefore relevant not only for understanding support for additional measures, but also for the emerging literature on when and how governments adjust or roll back climate goals that come to be seen as impractical.

Targets vs. actual greenhouse gas emissions trends in the EU

According to the latest European Environment Agency report (EEA, 2024), net greenhouse gas emissions in the EU fell to an estimated 37% below 1990 levels in 2023, marking a substantial improvement from 2022. This sharp year-on-year decline represents a significant step toward the EU's legally binding target of a 55% reduction by 2030. Yet projections suggest that current policies alone will only achieve a 43% reduction by 2030, underscoring the need for additional efforts. This figure closely aligns with citizens' average beliefs, whose central expectations also converge around a 43% reduction, indicating that citizens' beliefs are broadly consistent with model-based projections under current policies, absent further tightening of EU climate policy. When including planned but not yet implemented measures reported in Member States' 2023–2024 updates, projected reductions improve to 49%, closely matching policymakers' central expectations. While these additional measures narrow the gap to the 55% target, they remain insufficient. Achieving full compliance will require the effective implementation of these measures and the continued rollout of the EU's *Fit-for-55* package. Because many of these policies are being mainly discussed out of the public eye, they may not yet be fully incorporated into citizens' subjective beliefs.

Perception gap and the role of communication

Our results regarding second-order beliefs point to a *false consensus effect* (Ross et al., 1977): while elites involved in climate policy are aware that public views differ from their own, they systematically underestimate the depth of that divergence. This is consistent with the existence of an "egocentric bias" in the formation of second-order beliefs, as already documented in the general population (Leviston et al., 2013; Mildenberger and Tingley, 2019). In our context, elites tend to overestimate how common their own opinions are and to perceive citizens as more confident and optimistic about policy outcomes than they actually are.

When policymakers underestimate public skepticism, policy communication fails to address concerns about credibility and implementation, and this misalignment can inadvertently exacerbate doubts and undermine the perceived credibility of climate policies. Closing this perception gap is therefore essential not only for improving the effectiveness of policy communication, but also for diagnosing whether limited policy credibility primarily reflects information gaps, low trust in institutions, concerns about implementation capacity, or other factors. The shift in anti-climate rhetoric in public and political discourse, away from outright denial to criticising proposed policies and solutions, may also contribute to these dynamics (Lamb et al., 2020; Painter et al., 2023; Roper et al., 2016; Shue, 2023).

Challenges, limitations, and future research

Estimating aggregate EU-wide emissions in 2030 is challenging even for experts; it requires integrating information about policy design, implementation, technological change, and macroeconomic conditions. The high level of uncertainty observed among citizens in our data (entropy index = 0.71) is consistent with these informational and cognitive constraints. This implies that subjective probabilities over such outcomes should be interpreted with caution: they do not provide precise forecasts of future emissions, but rather indicate whether people expect the EU to fall substantially short of, roughly meet, or exceed its stated targets, and how confident they are in these expectations. The differences in uncertainty across groups, suggest that these beliefs reflect both informational limits and broader views about political feasibility and implementation. At the same time, the very existence of this uncertainty is substantively informative. It helps explain why some individuals remain ambivalent or undecided about climate policy, and it points to a potential margin for interventions aimed at clarifying not only policy goals but also the mechanisms through which policies are expected to deliver emissions reductions.

The comparison between citizens and elites should also be interpreted with caution: while the general public sample is designed to be demographically representative across 12 EU countries, the smaller elite sample is purposive and not representative of all policymakers or experts. Our goal is therefore not to estimate population-level beliefs among policymakers, but to provide indicative evidence on how beliefs differ between citizens and professionals involved in climate policy, and on whether experts' and policymakers' second-order beliefs align with actual public expectations.

Future work could combine belief elicitation with experimental or longitudinal designs to better identify the mechanisms behind belief formation, such as information, motivated reasoning, and perceptions of political feasibility, and to evaluate which policy and communication strategies are most effective in narrowing perception gaps while preserving democratic legitimacy.

Conclusion

Our study shows that citizens, experts, and policymakers share a broadly similar view that EU emissions will continue to fall, even though they disagree on how close the EU will come to its 2030 target. This shared core of relative optimism provides a foundation for more credible and ambitious climate policy. At the same time, the significant belief and perception gaps we document highlight where policy design, communication, and institutional performance need to improve. By taking these beliefs seriously, as signals of both support and concern, policymakers can strengthen the credibility and durability of EU climate commitments and, ultimately, increase the chances that ambitious targets translate into real, sustained emissions reductions.

Resource Availability

Lead contact

Further information and requests for resources should be directed to and will be fulfilled by the lead contacts, Loïc Berger (loic.berger@cnrs.fr) and Thibault Richard (t.richard@ieseg.fr).

Materials availability

Additional information can be found in the supplementary material.

Data and code availability

Complete survey data and replication materials will be made available upon publication (or by expert reviewer request). All codes are direct implementations of standard methods and techniques described in detail in Methods and executed via R scripts. Scripts will be made available upon publication (or by expert reviewer request).

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Author contributions

LB, TR, JE, and VB conceptualized the manuscript, and LB, TR, VB, TE, and JE drafted, visualized, and analyzed the results. All authors contributed to the data collection, review, and editing of the manuscript.

Declaration of interests

The authors declare no competing interests.

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Supplementary Material

Data collection

The data used in this paper come from the EU Horizon CAPABLE survey, described in detail in Smith et al. (2026). The CAPABLE survey is a demographically representative online survey conducted in 13 EU countries, with a total sample of N = 19,328 respondents. All respondents were at least 18 years old at the time of participation.

Sampling in CAPABLE followed quota-based procedures to ensure demographic representativeness in each country. Quotas were set for age (by group), gender, and education. The survey was fielded in each country's official language. The original questionnaire was written in English, professionally translated into the respective national languages, and subsequently reviewed by native speakers (see Smith et al., 2026, for the full English version of the questionnaire).

Quality-control procedures were implemented uniformly across the full CAPABLE sample. We used three attention checks to identify low-quality responses: (1) a response duration below 45% of the country-specific median completion time; (2) an incorrect response to an item instructing respondents to select “Other” in a single-choice question; and (3) an incorrect response to an item instructing respondents to select “Somewhat like me” within a matrix of questions. Respondents who failed at least two of these three checks were replaced during fieldwork and excluded from the final analytical dataset. Overall, 6.3% of initial respondents were removed based on these criteria.

The belief-elicitation module analyzed in this paper was embedded within the broader CAPABLE survey. In each of the 13 countries, the module was randomly offered to approximately one fourth of respondents, with a target of up to 200 completed interviews per country. Because completion rates for this module were lower than for the rest of the questionnaire in some countries, actual country-level sample sizes are often below 200 (see Extended Data Table 1). Due to a programming error, the cap was not enforced in Spain and Sweden, leading to larger samples in those countries. For proprietary reasons, we exclude the Czech Republic from the analyses presented in this paper. Our final belief sample, therefore, consists of respondents from 12 EU countries, drawn from the quality-screened CAPABLE dataset and subjected to the same sampling and control procedures described above.

Extended Data Table 1 reports the population and sample composition by gender, age, and education, and compares our belief-elicitation sample to the full CAPABLE dataset described in Smith et al. (2026). Across countries, the Sample tracks the Target margins reasonably closely on gender and age (typically within roughly ±10 percentage points), while larger departures, especially for education, are consistent with some selection/attrition between the main survey and the additional module.

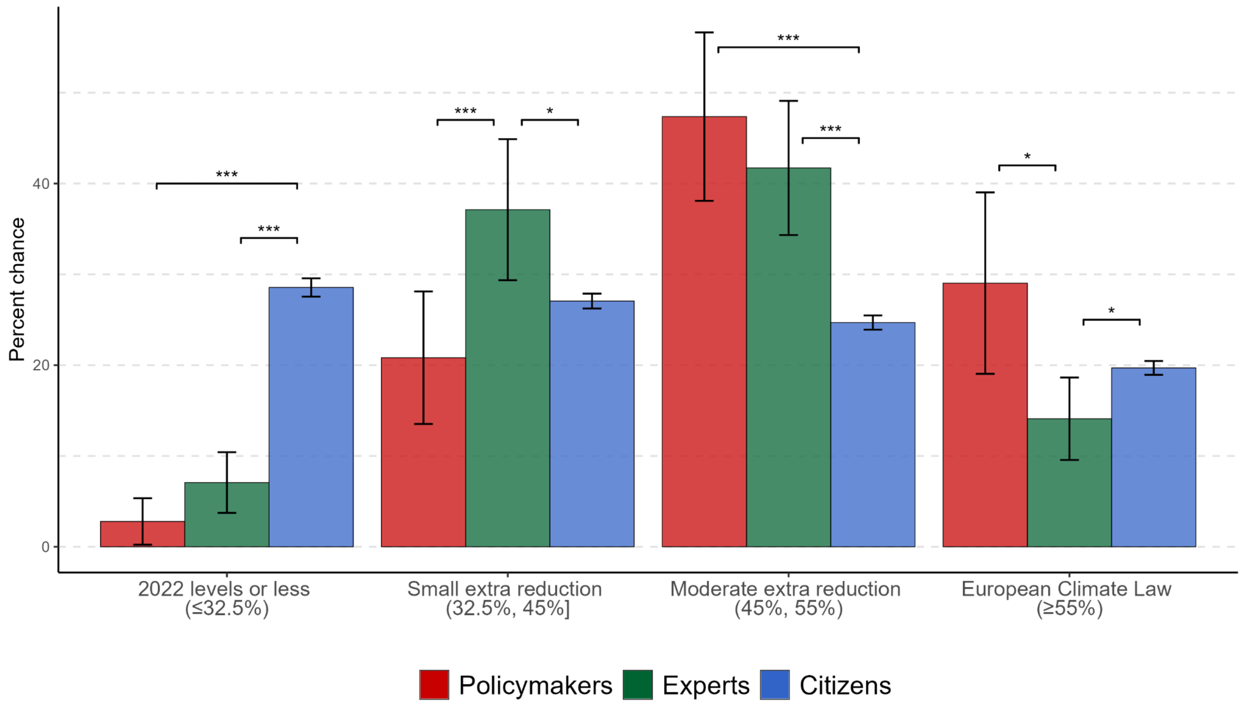
Extended Data Table 1: Sample composition by age, gender, and education for each country and their comparison with the complete survey data collection in Smith et al. (2026)

		Gender	Age			Education		
		Female	**18-39**	**40-59**	**60+**	**High**	**Medium**	**Low**
Austria	Target	50.1	38.2	39.0	22.8	37	49	14
	Sample (n=182)	55.5	44.0	29.1	26.9	53.3	45.6	1.1
	Smith et al. (n=1607)	53.3	36.1	39.7	24.2	47.4	51	1.6
Denmark	Target	49.8	39.3	37.2	23.6	42.9	39.3	17.8
	Sample (n=187)	53.5	41.7	24.1	34.2	31.0	48.1	20.9
	Smith et al. (n=1607)	50.9	37.9	36.8	25.3	44.4	40.2	15.4
France	Target	51.2	37.5	37.3	25.1	42	41	16
	Sample (n=181)	55.8	32.0	27.1	40.9	36.5	36.5	27.1
	Smith et al. (n=1233)	51.7	32.2	39.2	28.6	53.4	27.7	19
Germany	Target	49.8	36.4	38.4	25.2	33	50	17
	Sample (n=193)	50.8	37.3	32.6	30.1	21.1	46.1	32.6
	Smith et al. (n=1604)	50.3	31.7	39	29.3	33.6	50.8	15.7
Greece	Target	50.5	33.5	41.7	24.9	34.3	46.7	18.9
	Sample (n=184)	46.2	41.3	44.0	14.7	62.5	34.2	3.3
	Smith et al. (n=1603)	49.7	35.0	53.7	11.3	49.1	46	4.9
Hungary	Target	51.1	35.8	39.7	24.5	29.8	57.5	12.6
	Sample (n=180)	55.6	37.8	38.3	23.9	42.8	42.8	14.4
	Smith et al. (n=1600)	52.1	34.9	40.4	24.7	32.8	55.6	11.6
Italy	Target	50.3	32.1	42.2	25.7	21.6	43.9	34.5
	Sample (n=192)	44.8	32.8	43.2	24.0	25.0	44.3	30.7
	Smith et al. (n=1222)	50.1	30.8	43.0	26.2	30.4	48.4	21.3
Netherlands	Target	49.9	38.7	36.7	24.5	44.3	36.4	19.3

	Sample (n=177)	50.8	45.8	19.2	35.0	40.7	31.1	28.2
	Smith et al. (n=1225)	52.0	33.5	37.9	28.7	43.4	36.5	20.2
Poland	Target	51.1	38.4	36.5	25.2	37.9	56.4	5.7
	Sample (n=186)	46.8	45.2	14.5	40.3	49.5	39.2	11.3
	Smith et al. (n=1607)	52.3	38.1	36.8	25.1	38.8	55.1	6.1
Slovenia	Target	48.8	34.3	40.1	25.7	33.8	54.7	11.5
	Sample (n=177)	48.6	27.7	45.8	26.6	37.9	54.8	7.3
	Smith et al. (n=1209)	51.6	34.5	44.3	21.3	40.2	55.8	4.1
Spain	Target	50.5	33.9	43.5	22.8	41.4	22.7	35.8
	Sample (n=395)	47.6	35.4	41.8	22.8	45.1	21.8	33.2
	Smith et al. (n=1590)	50.4	32.6	43	24.4	41.9	23.2	34.9
Sweden	Target	49.2	40.7	36.5	22.9	49.4	41	10
	Sample (n=386)	50.0	36.3	45.8	25.9	51.0	41.7	7.3
	Smith et al. (n=1597)	50.0	37.1	37.6	25.2	50.1	42.3	7.6
All countries	Sample (n=2620)	50.2	37.7	34.2	28.1	42.3	39.1	18.6
	Smith et al. (n=17704)	51.2	34.7	40.9	24.4	44.2	44.6	13.3

Descriptive statistics

Extended Data Figure 1 presents the raw responses from our belief-elicitation module for the three groups.



Extended Data Figure 1: Expected EU greenhouse gas emission reductions by 2030: Public, experts, and policymakers' perspectives. Average percent chance allocated by different groups (citizens, experts, and policymakers) to each of four mutually exclusive intervals representing possible levels of total EU net greenhouse gas emissions reduction by 2030 (relative to 1990 levels).

Extended Data Table 2 presents descriptive statistics for our main variables for citizens and the different elite groups.

Demographics. Gender was measured with three predefined categories (man, woman, non-binary) plus an open "self-describe" option. Age was initially collected in five categories (18–29, 30–39, 40–49, 50–59, 60+); respondents younger than 18 or older than 74 were excluded. For the analyses reported here, age is recoded into three groups: 18–39, 40–59, and 60+. Education was measured with country-specific lists of 7–13 educational qualifications, constructed and aligned with ISCED education levels with the help of native speakers in each country. These ISCED levels were then grouped into three categories: low, medium, and high education. Household income was reported by selecting the decile of (net) household income to which the respondent's household belongs. Country-specific income deciles were constructed using the EU-SILC 2024 dataset and displayed in weekly, monthly, and yearly terms. For the analyses, income deciles were grouped into three categories (low, middle, and high income). Area of living was measured with five categories: farm or home in the countryside; countryside village; town or small city; suburbs or outskirts of a big city; and big city. We construct a rural area indicator that takes the value 1 for the first two categories (farm or home in the countryside, countryside village) and 0 otherwise.

Climate-related variables. Perceived knowledge about climate policy was measured with the item "How informed are you about the Fit-for-55 policies?", answered on a 7-point scale from "very uninformed" to "very informed". General climate worry was measured with a single item asking "How worried are you about climate change?", answered on a 5-point scale from "not at all worried" to "extremely worried". Second-order climate worry was measured by asking "How worried do you think the average person in your country is about climate change?", using the same 5-point scale.

Other citizen-specific variables. Trust in institutions was measured by asking respondents how much they trust the European Parliament and their national parliament, each on a 7-point scale from "no trust at all" to "complete trust". For the analyses, we recode these into binary indicators, coding responses of 5–7 as "trust" (1) and 1–4 as "no trust" (0). Political orientation was measured on an 11-point left–right scale (1 = left, 11 = right).

Other elite-specific variables. Professional experience in the field was measured using the question "How many years of experience do you have in your field?", with four response categories: less than 5 years, 5–10 years, 10–20 years, and more than 20 years. The extent to which respondents' work is related to climate policy was measured with the item "To what extent is your work related to climate policy?", with five response options: "All or most of my work", "Half of my work or slightly more", "Some of my work", "Little of my work", and "None of my work". The extent to which respondents' work includes climate policy evaluation was measured with the item "To what extent does your work include climate policy evaluation?", using the same five response options ("All or most…", "Half or slightly more…", "Some…", "Little…", "None…").

Extended Data Table 2: Descriptive statistics

	Citizens	Elites	
		Policymakers	Experts
N	2620	33	42
Assessment of expected EU greenhouse gas emission reductions by 2030 (compared to 1990)			
Central expectation	42.5	49.9***	45.6*** $^{+++}$
Uncertainty (Normalized entropy index)	0.71	0.54**	0.64
Confidence (5-point Likert)	2.54	3.09**	2.79*
Demographics			
Gender ('Female')	50.2%	30.3%*	35.7%
Age (18-39/40-59/60+)	38%/34%/28%	27%/55%*/18%	52%$^{+}$/43%/5%***
Education (High/Medium/Low)	42%/39%/19%	100%***/0%*** /0%***	100%***/0%***/0 %***
Income (High/Medium/Low)	22%/67%/11%	/	/
Living in rural area (dummy)	21 %	/	/
Climate-related variables			
Knowledge about EU climate policy (7-point Likert)	2.87	6.33***	5.28***$^{+++}$
General climate worry (5-point Likert)	3.30	4.24***	4.21***
Second-order climate worry (5-point Likert)	2.87	/	/
Other population-specific variables			
Trust in the EU Parliament (dummy)	36%	/	/
Trust in the national parliament (dummy)	34%	/	/
Political orientation (11-point scale)	6.12	/	/
Other elite-specific variables			
Experience in their field (10+)	/	63.6%	52.4%
Work related to climate policy (5-point Likert)	/	4.67	4.48
Work includes climate policy evaluation (5-point Likert)	/	3.06	3.14

Note: Star signs indicate differences from citizens: ***: p<0.001 **: p<0.01, *: p<0.05. Plus signs indicate differences between policymakers and experts: $^{+++}$: p<0.001, $^{++}$: p<0.01, $^{+}$: p<0.05. The tests are based on t-tests for continuous variables and on proportion tests for dummy variables.

Further results

An elite-citizen comparison

While elites (policymakers and experts together) assign a similar probability to meeting the European Climate Law target (21% in total for outcome D) as citizens, notable differences emerge for outcomes A and C. Elites report a shift from the most pessimistic outcome to a more moderate level of emissions reduction. Specifically, there is a -23-percentage-point gap (95% CI, [-25.6, -20.5]; p<0.001 for a t-test) between the probabilities assigned to outcome A by elites and citizens, while the gap for outcome C is +19-percentage-point (95% CI, [13-25]; p<0.001 for a t-test). This suggests that elites are generally more optimistic and less uncertain about the EU's emissions reduction progress by 2030 than the general public. This interpretation is supported by a significantly higher central expectation among elites, with an average expected reduction of 47.5% (compared to 42.50% for citizens, p < 0.001, t-test), and a lower average entropy index (0.60 vs. 0.71, p < 0.001; see Extended Data Table 3). Elites also reported greater confidence in their probabilistic beliefs, with an average confidence rating of 2.9 out of 5 compared to 2.5 for citizens (p<0.001, t-test).

First- and second-order beliefs

Extended Data Table 3 presents first- and second-order beliefs in terms of central expectations and uncertainty levels. Elite respondents are shown in three ways: policymakers only, experts only, and the combined elite sample (policymakers + experts). Because one elite respondent did not fully complete the survey, we cannot reliably classify them as either policymaker or expert; this respondent is therefore included only in the combined elite category.

Extended Data Table 3: First vs. Second-Order Beliefs

	Citizens	Elites		
		Policymakers + experts	Policymakers	Experts
N	2620	76[a]	33	42
First-order beliefs: Expected EU greenhouse gas emission reductions by 2030 (compared to 1990)				
Central expectation	42.5	47.5***	49.9***	45.6***
Uncertainty (normalized entropy index)	0.71	0.60**	0.54**	0.64
Second-order beliefs about citizens				
Central expectation	/	44.6***	43.7***	45.0***
Uncertainty (normalized entropy index)	/	0.81***[b]	0.78***[b]	0.85***[b]

Notes: [a]One elite respondent cannot be classified as a policymaker or expert; they are included only in the combined elite category. [b]The *p*-values of the tests reported here compare the normalized entropy indexes obtained on the second-order beliefs with the normalized entropy of the average partition of the citizens. Star signs indicate differences with citizens' first-order beliefs: ***: $p<0.001$ **: $p<0.01$, *: $p<0.05$. The tests are based on *t*-tests.

Robustness analysis of central tendency

To test the robustness of our central tendency metric, we apply two complementary approaches: (1) sensitivity checks using alternative outcome boundary definitions to examine how different outcome category configurations influence the results, and (2) a parametric approach that fits a normal distribution to each respondent's belief distribution, providing a model-based comparison to our non-parametric estimate. For the non-parametric analysis, we test alternative boundary specifications for outcomes A and D. Specifically, we evaluate two configurations: (i) bounds at 27.5% and 60%, and (ii) expanded bounds at 12.5% and 75%. We also explore a hybrid model where outcome categories B and C follow a uniform distribution, while categories A and B follow a triangular distribution over 0% to 100%, with zero density at the extremes. For the parametric check, we assume that individual beliefs follow a truncated normal distribution (bounded between 0% and 100%). We estimate the mean and standard deviation of this distribution by minimizing the Kullback-Leibler divergence between the fitted distribution and the empirical distribution implied by each respondent's responses (cf. Delavande and Rohwedder, 2011, for a similar approach with a beta distribution). This provides an alternative, model-based estimate of central tendency. All methods yield remarkably similar results, with rank correlations close to one, as shown in Extended Data Table 4.

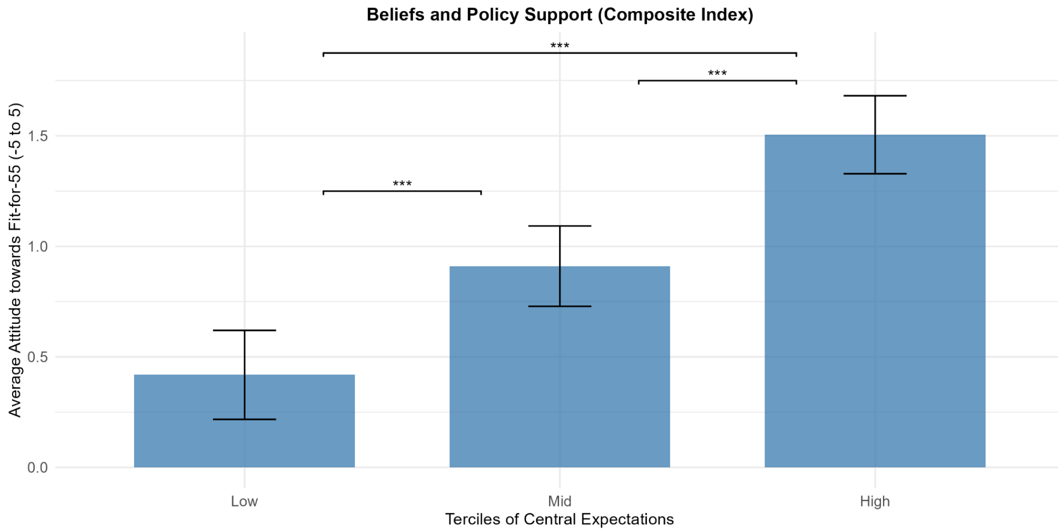
Extended Data Table 4: Correlations between different central tendency metrics

	NP ± 5	NP ± 10	NP ± 20	Triangular	Parametric
NP ± 5	1	1	0.99	0.99	0.98
NP ± 10	**1**	**1**	**1**	**0.99**	**0.98**
NP ± 20	0.99	1	1	0.99	0.98
Triangular	0.99	0.99	0.99	1	0.97
Parametric	0.98	0.98	0.98	0.97	1

Note: Spearman rank correlations across alternative methods for estimating the central tendency of citizen beliefs. The non-parametric estimates are distinguished by a "±" suffix, reflecting different interval ranges assigned to bins A and D under a uniform distribution assumption. The "triangular" specification models bins A and D using a triangular distribution with support over the open interval (0, 100). For the parametric approach, we compute the mean of a fitted normal distribution, where the parameters are estimated by minimizing the Kullback-Leibler divergence between the model's predicted probabilities and the empirically observed bin frequencies. The specification used in the main paper is in bold.

Robustness of the belief–support association

We here examine whether the association between beliefs about 2030 EU emissions reductions and support for climate policy presented in the body of the paper is robust to an alternative measure of policy support. Following the methodology proposed in Smith et al. (2026), we recoded the five policy-specific support items into a three-point scale: opposed (−1 for "Strongly opposed" to "Somewhat opposed"), neutral (0), and supportive (+1 for "Somewhat in favour" to "Strongly in favour"). For each respondent, we then computed an overall support score by summing the recoded responses across the five climate policies, yielding a support composite index ranging from −5 (strong opposition to all policies) to +5 (strong support for all policies). As in the main body of the paper, we then compare this index across respondents in the most pessimistic and most optimistic terciles of the belief distribution. Extended Data Figure 2 presents results that are remarkably similar to those in Figure 3b. In particular, the mean difference corresponds to 0.38 standard deviations ($p < 0.001$, two-sided t-test), indicating substantially higher support among optimistic respondents.



Extended Data Figure 2: Average composite index of support for Fit-for-55 (from -5 to 5) across terciles of beliefs' central expectations. Error bars indicate 95% confidence intervals.

Climate change policies

Extended Data Table 5 presents the five *Fit-for-55* policies examined in the main body of the paper.

The policies were implemented at the EU level, and vary by sector (e.g., all, agriculture, energy, transport), and design type (e.g., market-based, regulatory). The key focus was on central elements of the EU Fit-for-55 package, such as emissions trading systems (ETS), particularly the inclusion of sectors such as agriculture, heating, and transport. All these policies are already in effect.

Extended Data Table 5: General characteristics of the policies used to evaluate the link between beliefs and support.

	Policy type	**Sector**
General EU ETS	Market-based (push)	All
ETS transport	Market-based (push)	Transport
ETS heating	Market-based (push)	Energy
CBAM	Market-based (push)	All
New FF car sales ban with exemptions	Regulation (push)	Transport

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