

Green Funds and Climate Discontent

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Abstract

Do Green Funds lower Climate Discontent and support Environmental Voting? Environmental concerns have become central to contemporary political debate as the urgency of addressing climate change intensifies. Meeting international climate targets requires rapid and far-reaching reductions in greenhouse gas emissions, entailing substantial economic and social adjustments. These measures impose immediate and unevenly distributed costs, including higher living expenses, lifestyle changes, and structural transformations in carbon-intensive regions, while their benefits largely accrue in the long term. As a result, ambitious climate policies risk triggering political backlash among voters who bear these short-term burdens. This project examines whether compensating citizens for the costs associated with climate action through European financial support can enhance public support and make the green transition politically sustainable.

Keywords: Climate Discontent, Environment, EU Cohesion Policy, Voting, Difference-in-Differences

JEL Classification: Q54, R11, Q58, D74, O44, C23

1 Introduction

In recent years, environmental protection has become a central issue in political debate. The urgency of addressing climate change¹ has increased public awareness of its risks and prompted political parties to advance increasingly ambitious policy proposals.² Yet climate mitigation entails substantial short and medium term costs, while many of its benefits will materialize only in the long run. Reducing emissions requires changes in lifestyles and consumption patterns, as well as support for large-scale public investments, all of which involve tangible economic and social trade-offs. Moreover, the transition to a low-carbon economy may disproportionately affect regions that depend on carbon-intensive industries, rendering them particularly vulnerable to job losses and economic decline. As a result, even in the face of severe environmental risks, citizens may resist policies that increase living costs or threaten local economic stability, potentially undermining political support for ambitious climate action. This tension gives rise to a central question: can compensating voters for the costs associated with climate policies enhance the political sustainability of the green transition?

2 Literature Review

A first strand of the literature examines individual preferences toward environmental protection. In Baiardi and Morana (2021), environmental concern is found to be positively associated with per capita income, social trust, secondary education, physical discomfort related to high temperatures, media coverage, the share of young people in the population, and monetary losses caused by extreme weather events. Similarly, Andor et al. (2018) document that older individuals are less concerned about climate change and less likely to support climate-friendly policies, even when they have children or grandchildren. These findings suggest that, when older cohorts play a decisive role in collective decision-making, public resources may be more

¹The IPCC SR15 report estimates that, in order to have a 50–66% chance of keeping global warming below 1.5 °C, global emissions must be reduced to about half their current level by 2030 and reach net-zero by 2050 (Masson-Delmotte et al. (2018)).

²European Green Deal: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

likely to be allocated to present-oriented spending rather than long-term environmental investments. More recently, [Dechezleprêtre et al. \(2025\)](#) show that support for climate policies is primarily driven by beliefs about policy effectiveness, fairness, and personal financial consequences, rather than by general concern about climate change or factual knowledge alone.

A second strand of the literature focuses on the rise of green discontent, which manifests itself in two distinct forms ([Bourdin et al. \(2025\)](#)). On the one hand, opposition targets climate and green transition policies, often criticized for their perceived economic and social costs ([Rodríguez-Pose and Bartalucci \(2023\)](#)). On the other hand, discontent stems from dissatisfaction with the perceived inadequacy and ineffectiveness of existing climate policies, reflecting concerns about the consequences of climate change itself.

While this body of work identifies important determinants of environmental attitudes and green discontent, it pays limited attention to the role of specific policy designs in shaping voter preferences. From a theoretical perspective, [Rangel \(2003\)](#) develop a game-theoretic model in which backward-looking intergenerational transfers, such as social security, are instrumental in sustaining investments in forward-looking intergenerational public goods, such as education and environmental protection. However, this proposition remains largely theoretical, as it has not been subjected to systematic empirical testing.

This research project addresses this gap by empirically investigating whether redistribution policies, particularly those designed to ease the costs of the green transition, affect political support for environmental policies.

3 Data

We assemble a municipality level dataset by combining information on European Union (EU) transfers, electoral outcomes, and local socio-economic characteristics. Data on EU-funded projects are drawn from the OpenCoesione³ platform, which provides detailed information on all projects financed under EU Cohesion Policy from the 2000-2006 programming period. In particular, we identify payments tar-

³<https://opencoesione.gov.it/en/>

geted at environmental sustainability and green transition objectives. The dataset includes information on the amount of funding, the timing of projects, the type of intervention, and the beneficiaries.

Electoral data at the municipality level are obtained from the Eligendo portal of the Italian Ministry of the Interior⁴. We collect results for national and European Parliament elections from 2001 onward. As it will be explained later, we combine elections with parties' environmental positions from the Chapel Hill Expert Survey (Jolly et al. (2022)).

Finally, we merge these data with municipality-level socio-economic indicators provided by ISTAT⁵.

3.1 Measuring Environmental Voting

To construct a measure of environmental voting, we combine national and European election results with survey-based data on parties' positions toward the environment. The environmental score for each municipality is calculated as follows:

$$Score_{i,t} = \sum_p Voteshare_{p,i,t} \times Environment_{p,t},$$

where $Score_{i,t}$ represents the environmental voting score of municipality i at election t , $Voteshare_{p,i,t}$ is the vote share received by party p in municipality i at election t , and $Environment_{p,t}$ is the environmental position of party p at the time of the election. This score captures the extent to which voters in a given municipality support parties with pro-environmental stances.

A survey measuring parties' environmental positions can be found in the Chapel Hill Expert Survey (Jolly et al. (2022)). Among other dimensions, the survey evaluates parties' environmental position on a 0–10 scale, where 0 indicates "strongly supports environmental protection" and 10 indicates "strongly supports economic growth even at the cost of environmental protection." For an easier understanding of this score, we reverse it, so that higher values represent more concern for the environment, and we normalize it on a 0-1 scale. The survey provides data for 2010, 2014, 2019 and 2024, allowing the use of multiple elections and accounting for potential changes in parties' environmental positions over time.

⁴<https://elezioni.interno.gov.it/>

⁵<https://esploradati.istat.it/databrowser/en>

An alternative source for assessing parties’ environmental positions at the time of national elections is the Manifesto Project, which evaluates party manifestos ([Lehmann et al. \(2025\)](#)). In particular, the project provides measures for each party on the following dimensions: “Anti-Growth Economy: Positive”⁶ and “Environmental Protection”⁷.

An alternative specification scales parties’ environmental positions by the salience of environmental issues in their platforms. The environmental voting score can then be calculated as:

$$Score_{i,t} = \sum_p Voteshare_{p,i,t} \times Environment_{p,t} \times EnvironmentSalience_{p,t},$$

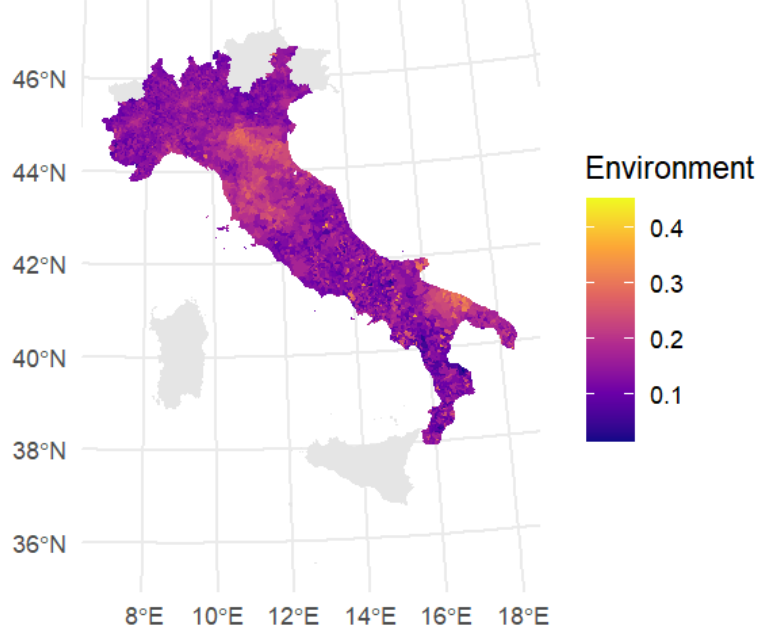
where $EnvironmentSalience_{p,t}$ measures the salience of the environmental position of party p in election t . A corresponding measure of $EnvironmentSalience_{p,t}$ is available in the CHES dataset.

Figure 1 below reports a map of Environmental voting in the 2024 European Elections.

⁶Favourable mentions of anti-growth politics; rejection of the idea that all growth is inherently good; opposition to growth that causes environmental or societal harm; call for sustainable economic development.

⁷General policies in favour of protecting the environment, combating climate change, and other “green” initiatives. Examples include preservation of natural resources, protection of countryside and forests, national parks conservation, and animal rights. Policies may vary widely but share the common goal of environmental protection.

Figure 1: Environmental voting 2024



3.2 Measuring Climate Discontent

To construct a measure of Climate Discontent, we need to recall the two sources that originate it. First, the vulnerability to climate change, that is the direct threat imposed on people by climate change, as an example rising sea levels in coastal regions. Second, the vulnerability to the transition, an indirect threat which comes from the need to fight climate change transitioning from a brown economy to a green economy, an example of this could be the fear of losing the job because highly polluting firms need to close their facilities or reduce production.

As highlighted in [Bourdin et al. \(2025\)](#), these vulnerabilities result in two forms of discontent: “We are doing too little” to fight climate change and “We are doing too much” to sustain the transition.

Exploiting the *Environment* score (abbreviated e) from the CHES survey, we can construct a measure of these two positions:

$$Too_Little_{pt} = \max(0, 2e_{pt} - 1),$$

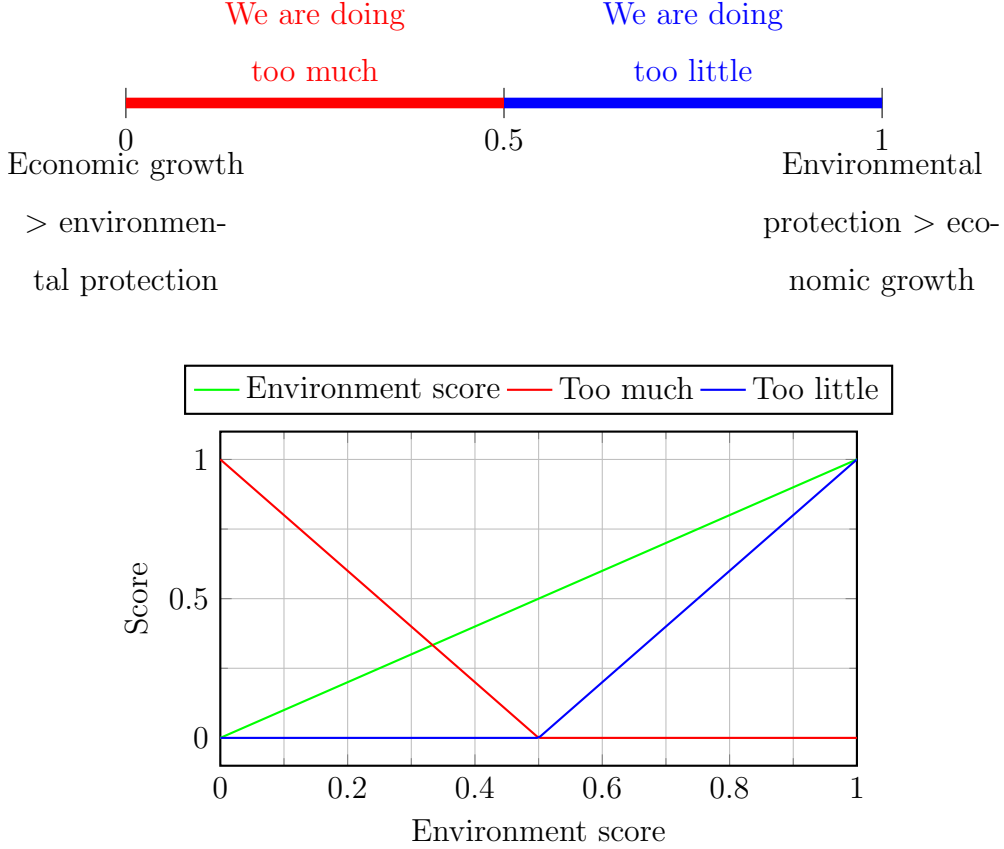
$$Too_Much_{pt} = \max(0, 1 - 2e_{pt}).$$

They capture a party’s position on the two dimensions: when a party highly supports environmental protection at the cost of economic growth *Too_Little* is positive

and *Too_Much* is zero; when a party highly supports economic growth at the cost of environmental protection *Too_Little* is zero and *Too_Much* is positive. This means that the two positions are close to zero when a party is equally balancing the economy and the environment.

In Figure 2 below we show a visualization of the two measures. Looking at Figure

Figure 2: Environment position



2, a party's climate discontent would be measured as the V-shaped function where both Too Little and Too Much are positive, recalling that each party can have only one of the two to be positive.

Now we can measure a municipality's climate discontent, but first we need to measure a municipality's Too Little and Too Much voting. We do this in a similar way to Environmental Voting:

$$Too_Little_{it} = \sum_p Voteshare_{pit} \times Too_Little_{pt},$$

$$Too_Much_{it} = \sum_p Voteshare_{pit} \times Too_Much_{pt}.$$

Now we can define two measures of Climate Discontent:

1. The first is a measure of overall discontent, the weighted sum of each party's discontent:

$$\begin{aligned} Climate_Discontent_{it} &= \sum_p Voteshare_{pit} (Too_Little_{pt} + Too_Much_{pt}) \\ &= Too_Little_{it} + Too_Much_{it}. \end{aligned}$$

It captures a higher discontent when one of the two components is high.

2. The second is a measure of overall polarized discontent:

$$Climate_Discontent_{it} = Too_Little_{it} \times Too_Much_{it}.$$

It captures a higher discontent when both components are high, reflecting a higher degree of disagreement in voters.

Figure 3 below report the different measures of climate discontent and their values for Italian municipalities. We can notice that the main difference is that for the second measure, we need both dimensions to be high to have a higher level of discontent.

Figure 3: Climate discontent

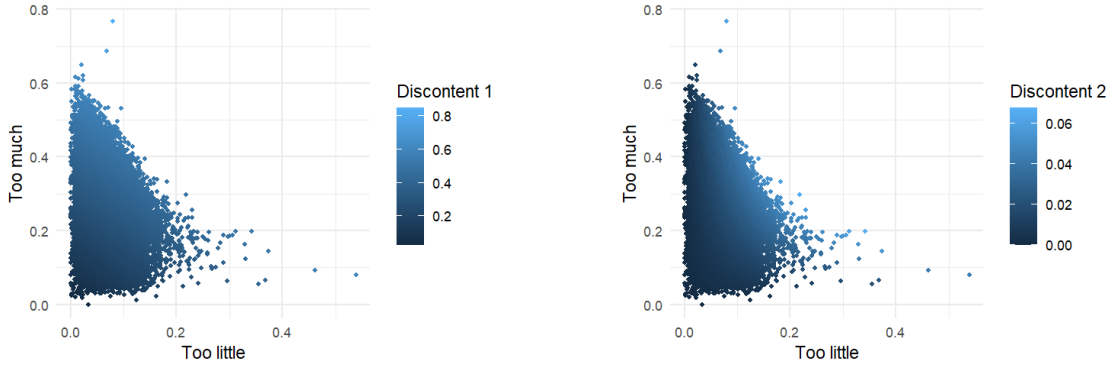
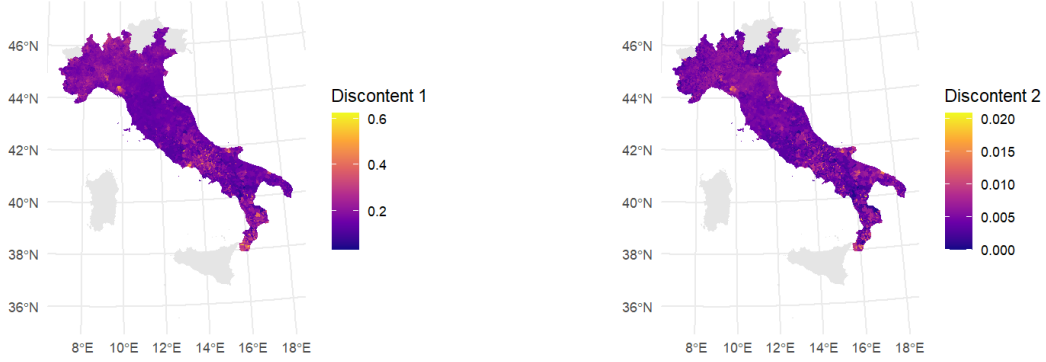


Figure 4 below show how these measures map for Italian municipalities in the 2024 European Elections. Again we see that the two measures do not overlap over municipalities.

3.3 Defining Treatment and Control Groups

The treatment group consists of municipalities that start receiving EU Green Funds from 2014 onward. We define “Green Funds” as EU transfers explicitly earmarked

Figure 4: Climate discontent Map 2024



for environmental sustainability and green transition objectives.

Because municipalities may simultaneously benefit from multiple EU funding streams, we restrict the sample to municipalities that receive at least one type of EU funding over the period of analysis. This restriction ensures that treated and control municipalities are comparable in terms of their baseline exposure to EU resources and administrative capacity to attract funds.

Within this restricted sample, the control group comprises municipalities that receive EU funding exclusively for non-green purposes, while the treatment group includes municipalities that receive both non-green EU funding and Green Funds starting in 2014. Hence, identification relies on comparing municipalities that all benefit from EU transfers, but differ in whether they are additionally exposed to Green Funds after 2014.

In this framework, we contrast municipalities that begin to receive green-targeted transfers in addition to other EU funds with municipalities that continue to receive only non-green EU funding. This design allows us to isolate the effect of exposure to Green Funds from the broader impact of EU financial support.

4 Empirical strategy

To assess the impact of the Green Funds on environmental voting, we employ a difference-in-differences (Diff-in-Diff) strategy. We consider municipalities to be treated as soon as a Green project starts.

First, we start with a simple TWFE model to assess extensive margin of green

funding, regardless of the amount of funds received. Our specification is:

$$Y_{it} = \alpha_i + \gamma_t + \beta X_{it} + \tau d_{it} + \epsilon_{it},$$

where Y_{it} is the outcome variable, α_i and γ_t are unit and time fixed effects, X_{it} is a set of controls, d_{it} is a dummy equal to 1 if a unit is treated and 0 otherwise, and ϵ_{it} is the error term. The coefficient of interest, τ , provides the causal estimate of the effect of being target of Green funds.

Second, to assess the intensive margin of green funding, we employ a CTWFE model:

$$Y_{it} = \alpha_i + \gamma_t + \beta X_{it} + \tau Funds_{it} + \epsilon_{it},$$

where $Funds_{it}$ is a continuous variable measuring the amount of funds received. This variable is 0 before receiving the treatment and positive after the start of some project.

Finally we employ more recent estimators as the [Callaway and Sant'Anna \(2021\)](#) estimator and the [Sun and Abraham \(2021\)](#) estimator.

5 Conclusion

Climate change has become a central issue in political debate, yet the policies required to mitigate it entail significant short-term economic and social costs, while their benefits will largely materialize in the future. This temporal asymmetry can fuel climate-related discontent, either in the form of opposition to costly environmental measures or frustration with the perceived inadequacy of existing policies.

This research project investigates whether financial transfers supporting the green transition can mitigate such discontent. By empirically assessing the political effects of Green Funds at the municipality level, we evaluate whether compensatory policies reduce resistance to environmental action and dampen anti-green backlash.

If the hypothesis is confirmed, the results would suggest that well-designed redistribution mechanisms accompanying climate policies can play a crucial role in limiting climate discontent.

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