

**Political parties and climate policy. A new approach to measuring parties' climate policy preferences.**

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## **Abstract**

This study presents an innovative approach to hand-coding parties' policy preferences in the relatively new, cross-sectoral field of climate change mitigation policy. It applies this approach to party manifestos in six countries, comparing the preferences of parties in Denmark, France, Germany, Ireland, Italy, and the UK over the past two decades. It probes the data for evidence of validity through content validation and convergent/discriminant validation and engages with the debate on position-taking in environmental policy by developing a positional measure that incorporates 'pro' and 'anti' climate policy preferences. The analysis provides evidence for the validity of the new measures, shows that they are distinct from comparable measures of environmental policy preferences, and argues that they are more comprehensive than existing climate policy measures. The new measures strengthen the basis for answering questions that are central to climate politics and to party politics. The approach developed here has important implications for the study of new, complex, or cross-cutting policy issues and issues that include both valence and positional aspects.

**Keywords:** Climate change, political parties, party policy, manifestos, environmental politics

The success of the Paris Agreement, adopted at the COP21 climate conference in December 2015, depends heavily on the effectiveness of national climate change mitigation policies (henceforth: climate policies). Political parties will play a critical role in determining whether governments develop these policies (Birchall, 2014; Jensen and Spoon, 2011; Schulze, 2014); they also have a unique role in shaping attitudes (Brulle et al., 2012); and they are central to our understanding of political risks and uncertainties in climate policy (IPCC, 2014: 6). This article addresses a lacuna in the literature by presenting an innovative approach to measuring the climate policy preferences of political parties that involves coding the climate change mitigation policy content of party manifestos.

Developing valid measures of parties' climate policy preferences is a pre-requisite for comparative research concerning issue politicization, party competition, party government and political leadership on climate change and we argue that existing measures, while useful, have important shortcomings, some of which are related to characteristics of climate policy itself. First, it is a relatively new policy area. While collecting data on new issues is obviously important they can be difficult to incorporate into established coding schemes (Dolezal et al., 2014: 57). Second, climate policy is a cross-cutting and multi-sectoral issue, which makes it difficult to accommodate in hierarchically-organised coding schemes. Third, climate policy may have both 'valence' and 'positional' aspects, which has implications for how it is measured (Carter and Clements, 2015; Gemenis et al., 2012). It shares these characteristics, to varying degrees, with other issues such as social exclusion, European integration, and immigration (Kriesi et al. 2008: 66; Guinaudeau and Persico 2013; Castelli Gattinara 2016: 18-20). We will argue further that existing

attempts to measure parties' climate policy preferences are limited by their relatively narrow focus on single countries, single parties, and on subsets of climate policies.

This study contributes to the nascent literature on parties' climate policies by presenting a new approach that we apply to six countries, measuring the preferences of the two largest parties in Denmark, France, Germany, Ireland, Italy, and the UK over the past two decades. Using Adcock and Collier's (2001) types of measurement validation as a framework, we provide evidence for the measures' validity through content validation and convergent/discriminant validation and we build on existing research on parties' environmental policy positions to develop a positional indicator of parties' climate policy preferences.

The article begins by reviewing existing approaches to measuring parties' environmental and climate policy preferences while setting out properties that valid measures of parties' climate policy preferences should possess. It presents a new approach to comparing parties' climate policy preferences and describes the coding of data from party manifestos. The analysis then examines the validity of the measures produced through content validation and convergent/discriminant validation, respectively, before assessing the validity of a positional measure of parties' climate policy preferences. Finally, it discusses the strengths and weaknesses of the measures it produces, identifies questions to which they can be usefully applied, and highlights the potential of this new approach for measuring party preferences in other policy areas.

### **Measuring parties' climate policy preferences**

A climate policy is 'a human intervention to reduce the sources or enhance the sinks of greenhouse gases' (IPCC, 2014: 4). Climate policies therefore range across many

substantive policy domains. There has been growing interest in national climate policies in recent years as a subject that is distinct from environmental policy. However, comparative scholarship on the *domestic politics of climate change* is relatively underdeveloped (Bernauer 2013; Lachapelle and Paterson, 2013: 548) and political parties' climate policy preferences, including their measurement, have received little attention.

Most measures of party preferences related to climate change focus on environmental policy, broadly construed. The Comparative Manifestos Project (CMP) (Budge et al., 2001; Klingemann et al., 2006) identifies and codes a diverse set of environmental issues in its 'Environmental protection' category (*per 501*). The Comparative Agendas Project (CAP) takes a similarly broad approach to coding environmental policy in party manifestos in its 'Environment' category. Significantly, it contains a subcategory (#705) that includes some important climate policy content ('Air pollution, Global Warming, and Noise Pollution'; henceforth CAP705) (Bevan, 2014). Several expert surveys include measures of parties' environmental policy preferences (Bakker et al., 2015; Benoit and Laver, 2006; Rohrschneider and Miles, 2015). The expert-coded *EU Profiler* and *EU&I* data also includes parties' positions on some specific environmental issues in 2009 and 2014 (Trechsel, 2009; Trechsel et al., 2014). Others have used relational content analysis of media coverage to measure parties' preferences (Helbling and Tresch, 2011), including on the environment (Kriesi et al., 2008: 60).

Studies specifically addressing parties' climate policy preferences are limited in their scope and comprehensiveness. Båtstrand (2014) examines the climate policies of four Norwegian parties in 2009, while Båtstrand (2015) provides a qualitative cross-national analysis of nine conservative parties. These studies identify climate

policy pledges in party manifestos, but only if the party itself explicitly linked them to climate change. Moreover, Båtstrand's interest is specific to certain research questions. The Norwegian study codes pledges only if they are relevant to the dimension underlying 'old' and 'new' politics (Båtstrand, 2014). The later, cross-national study, focuses on whether the parties 'express trust in in the concept of anthropogenic climate change' and whether they propose climate policy measures 'in line with free market environmentalism' (Båtstrand, 2015).

Other studies focus on short periods in individual countries. De Blasio and Sorice (2013) compare the attention devoted to climate change by Italian parties in mid-2012, using keyword searches for 'climate change' and cognate terms in party documents. Case studies of individual parties (Carter and Clements, 2015) and studies of single-party governments also focus on parties' climate policies (Carter and Jacobs, 2014; Birchall, 2014), but do not develop a systematic, general approach to measuring parties' policy preferences.

We develop and examine new measures of parties' climate policy preferences using two of Adcock and Collier's (2001) types of measurement validation: content validation and convergent/discriminant validation. *Content validation* refers to the relationship between the indicator and the 'systematised concept' and it is a necessary condition for establishing overall validity. In this regard, a first desirable property of any indicator is that *it should include key elements and exclude inappropriate elements* (Adcock and Collier 2001: 538-539).

The most fundamental problem regarding the validity of the measures described above relates to content validation. Some clearly leave out important elements of climate policy (e.g., Båtstrand, 2014, 2015; De Blasio and Sorice, 2013): the CMP codebook did not mention climate change until 2014. Hierarchical coding

schemes such as the CAP and CMP present a more general problem: while mutually exclusive, hierarchically-organised categories enable these data sets to cover a wide range of policy domains, they invariably exclude important content because a piece of text can belong only to one category (e.g., climate policy *or* energy *or* agriculture). Consequently, the salience of issues cutting across many categories is likely to be underestimated (Guinaudeau and Persico, 2013) and some measures leave out important elements of climate policy, such as renewable energy and energy efficiency measures, that are contained in other categories.

Some measures have the opposite problem: they include elements that clearly fall outside any definition of climate policy. This is the case for all general measures of environmental policy preferences, whether from manifestos, expert surveys, or media content analyses. The CMP Environmental Protection category refers, amongst other issues, to ‘Animal rights’ and a ‘great variance of policies that have the unified goal of environmental protection’ (Volkens et al., 2016). The CAP Environment subcategories are likewise wide-ranging, including, for instance, Drinking Water Safety and Water Supply (Bevan, 2014). This problem also applies to some climate policy-specific indicators. CAP705 includes such issues as ‘noise pollution development, rules of upper decibel levels in public space, noise nuisance in kindergartens’ (Green-Pedersen and Mortensen, 2015: 20).

*Convergent/discriminant* validation concerns an indicator’s relationships with other measures. We expect measures of the same concept to be empirically associated (i.e., to converge) (Adcock and Collier, 2001: 540); this is a second desirable property of any new measure. Following from this, *the closer the association of a given measure with parties’ climate policy preferences (rather than environmental policy preferences), the stronger the relationship should be with the measures of climate*

*policy preferences developed here. Yet it should not be so strong (i.e., approaching identity) to suggest that the measures developed here add little or nothing to existing measures.*

Drawing on the literature on *position-taking* in environmental policy, we identify a third desirable property of a valid measure of climate policy preferences: *that it can take into account policy preferences that directly subvert climate policy goals.* Even where a party proposes climate change mitigation policies, the effects of those policies could be undermined if it also proposes policies that would increase emissions, such as increased support for new coal-fired power stations. Identifying such measures helps to control for internal inconsistency in party policy that may arise from ‘greenwashing’, the kind of ‘cheap talk’ that can be mistaken for an indicator of a party’s policy preferences.

While environmental policy is widely regarded as ‘a classic valence issue’, this assumption is increasingly being questioned. Climate policy in particular is an issue sometimes characterised by sharp disagreement, which can range from climate change deniers questioning the very fundamentals of climate science to conflict over specific climate measures, such as expanding onshore wind power or the use of green taxes. Such tensions can underpin partisan divisions over climate change (Guber, 2013; Carter and Clements, 2015). More generally, saliency theory has been questioned (Dolezal et al., 2014); the value of measuring both salience and position has been highlighted (e.g., Guinaudeau and Persico, 2014); and the CMP has been criticised for failing to separate its indicators of salience and position (Lowe et al., 2011: 133; Dolezal et al., 2014: 61-62; cf. Volkens, 2007: 117). We do not settle these questions here, but we do build on Compston and Bailey’s (2013) concept of ‘anti-climate policy’ and Weale et al.’s (2000: 247-250) approach to constructing an



environmental policy index to develop a measure that can be regarded as ‘positional’ at the level of climate policy preferences.

### **Coding parties’ climate policy preferences**

Existing manifesto-based projects using hand-coding provide a basis for important elements of our coding scheme. Like the CMP, CAP and Båtstrand (2014, 2015), we use parties’ main pre-election documents as the principal source of data (see Appendix A). The benefits of using these documents are well-known: they set out the party’s official policy preferences, they are publicly available and amenable to *ex post* analysis, and they are unlikely to contain only ‘cheap talk’.

Like the CMP and CAP projects, we use quasi-sentences – ‘the verbal expression of one political idea or issue’ (Klingemann et al., 2006: 165) – as the unit of observation (see Appendix B). We also share their assumption that the proportion of a party document devoted to a particular type of content is related to its ‘salience’ for that party, which in turn reflects its policy preferences.

Unlike these projects, we focus on a single policy area (climate policy), anchored in a single hypothetical policy outcome (greenhouse gas [GHG] emissions). We assume that the relative simplicity of our coding scheme reduces coding error compared to more complex schemes covering numerous policy areas, consistent with criticisms of coding scheme complexity made by both architects and critics of the CMP (Budge, 2006: 84; Mikhaylov et al., 2012: 80).<sup>1</sup> Moreover, its relative simplicity

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<sup>1</sup> We outline several ways in which we aimed to minimise error. We cannot measure the reduction in error resulting from these decisions; rather, our argument that these features reduce error is based on assumptions that are grounded in the existing literature.

facilitates the coding of a cross-sectoral issue, building on previous approaches to coding EU issues in the CAP project (Guinaudeau and Persico, 2013).

We aim to reduce potential ambiguity in the coding scheme (and, thus, the likelihood of coding error) by explicitly articulating our coding categories, which follow from the definition of climate policy set out above. Our first substantive concern is with ‘pro-climate’ content: content that *indicates support for policies that would, if implemented, reduce GHG emissions or enhance GHG sinks*. Many such policies in developed economies are well-mapped in standard accounts (e.g., Compston and Bailey, 2016). They typically include supports for energy efficiency, the reduction of emissions from specific sectors (e.g., energy, transport, and agriculture), and overarching measures such as carbon pricing and the creation of institutions to govern climate policy. However, party documents are not simply lists of policy proposals: much text simply expresses a party’s general attitude or sentiment on an issue. Where this indicates support for emissions-reducing policies, it is also coded as ‘pro-climate’ content. Examples include content acknowledging climate change as a policy problem and expressing support for climate change mitigation or for environmental protection that implicitly includes climate protection.

Coding was carried out by researchers with expertise in climate policy and with knowledge of each country. Hand-coding of manifestos facilitated the application of context-sensitive expertise at the level of individual quasi-sentences (Volkens 2007: 117). This expertise is important for two reasons: first, because the coding of these categories is, in principle, context specific: the same policy in two countries may have a different significance. For example, building nuclear power capacity in a country that depends wholly on coal for electricity generation will reduce greenhouse gas emissions; building it in a country that depends wholly on

renewable sources of electricity may increase emissions. Second, sometimes further research was required to establish the policy's prospective impact on GHG emissions at the time the manifesto was published, and coders with expertise were well-placed to carry out that research. An example was high speed rail in the UK, which was ultimately coded as having an ambiguous effect on the UK's emissions.<sup>2</sup> While, in practice, many policies were coded similarly across contexts, the accommodation of context-sensitive expertise speaks to criticisms of manifesto-based data for being insufficiently sensitive to context (Franzmann and Kaiser, 2006; Mölder, 2016) and has a precedent in evidence-based expert-coding (Trechsel, 2009).

We aimed to minimize error further through central coordination and standardized procedures, drawing on lessons from other, larger hand-coding projects (Budge et al, 2001, Ch.4; Volkens, 2009). Coders received a set of instructions (Appendix B) and a piece of correctly-coded text as an example. Where difficult coding decisions arose, these were coded as such and then discussed and resolved with (and among) the authors, who coordinated the coding process. Some 69% of manifestos were double-checked by different coders. This was particularly intensive earlier in the coding process, as difficult coding issues were resolved and coding decisions standardized (see Volkens, 2009: 244). However, this did not amount to independent coding of manifestos by multiple coders and like other projects based on hand-coding, we face potential problems of reliability (Volkens 2007: 118). Where doubts remained about an item, claims made in the party document regarding the emissions-impact of a policy measure were taken into account (i.e., parties were given the 'benefit of the doubt').

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<sup>2</sup> 'Ambiguous' quasi-sentences were not counted as pro- (or anti-) climate content.

A set of subcategories was developed to provide insights into the substantive content of the ‘pro-climate’ text and as a means of systematically varying the content of our measures (see Table 1). To assign text to these substantive subcategories, each quasi-sentence was inductively labelled with a topic and then aggregated into broader, logically coherent categories. The aggregation of these labels fed back into the development of a codebook delimiting the categories (Appendix C). Coders also completed a questionnaire concerning basic document characteristics for each manifesto that we use later in the analysis (Appendix D).

Following the same procedures, we laid the basis for a positional measure of climate policy preferences by identifying ‘anti-climate’ content. Drawing on Compston and Bailey’s (2013) work on governments’ ‘anti-climate’ policies and a broader definition of climate policy covering all policy measures that influence emissions (EBRD and GRI, 2011: 60), we identified content that *indicates support for policies that would increase GHG emissions or diminish GHG sinks*. It includes quasi-sentences that deny that climate change is a problem, oppose climate change mitigation policies, or make specific policy proposals (e.g., opening a new airport) that would increase GHG emissions (Compston and Bailey, 2013: 147–148; see Table 2).<sup>3</sup>

### **Case selection**

The data cover 64 parties-at-elections in six countries (Denmark, France, Germany, Ireland, Italy, and the UK) from the mid-1990s until 2015. The manifestos vary in length: the Danish documents are particularly short: 338 quasi-sentences on average, compared to a mean document length of 1161 quasi-sentences across all coded

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<sup>3</sup> We use Compston and Bailey’s (2013: 148) list of anti-climate policies as a starting point, but we do not adhere to it strictly (see Appendix B).

documents.<sup>4</sup> Occasionally, the main parties were electoral coalitions (e.g., in Italy in 2001 and 2006) Sometimes a party's manifesto also represented smaller parties belonging to their electoral coalition (e.g., the Danish centre-left in 2011); here, we assume that the preferences of the main coalition party are accurately represented in the document (see Appendix A for details).

The six West European countries selected have much in common: they are all longstanding EU member states; they each have an established environmental policy arena; and, with the exception of France, they are heavily dependent on fossil fuels. Within that universe, they are diverse along dimensions that may influence the structure of climate politics (although given the paucity of existing research our expectations are necessarily tentative). They encompass both leaders and laggards on climate policy; small and large countries; a range of public concern about climate change; a variety of greenhouse gas emissions profiles, measured by per-capita emissions, the share of emissions from agriculture compared to fossil-fuel use, and the range of policy effort required for the 2012 and 2020 commitment periods. Overall, we expect inter-country differences to be relatively small given these important similarities; an expectation supported by ANOVA tests on each of the measures, which show no statistically significant differences between country means.

The period covered encompasses several electoral cycles in each country (32 in total) allowing us to examine variation in climate policy preferences within parties over time. It begins before the Kyoto Protocol was agreed (1997) and after climate change had become a distinct policy problem for governments in the early 1990s.

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<sup>4</sup> We ran the tests for convergent/discriminant validation that follow while excluding the Danish documents ( $n=14$ ). Our findings are generally borne out by these tests, although in some instances the reduced  $n$  leads to higher  $p$ -values. See Appendix F.

Within each country, we focus on the two largest parties by vote share before each election.<sup>5</sup> Due to their centrality to coalition formation, national policy, and public opinion, these are parties of particular substantive importance and therefore for the study of party government and political leadership on climate change. The selection of parties also limits diversity in key respects. Each party could expect to enter government in the short or medium term (i.e., they were ‘parties of government’). Consequently, they could anticipate having to solve emergent policy problems; , variation in their responses to climate change is therefore interesting and, in the face of a clear policy problem such as climate change, potentially puzzling.

In each country, we cover periods when each party has been in government and in opposition and, in each country, the two parties fall on either side of the main left-right cleavage structuring the party system (the exception being the Irish party system). Following from existing studies of parties’ climate policies (e.g., Batstrand, 2014, 2015) we expect left-of-centre parties to develop more progressive climate policy preferences than right-of-centre parties.

### **Pro-climate content: general description**

Across 64 documents, 4568 quasi-sentences were coded as ‘pro-climate’ content. The mean proportion of a manifesto accounted for by pro-climate policy is 6.0% (sd=3.1). Figure 1 shows considerable variation between parties and, within parties, variation over time. Denmark’s centre-right *Venstre*, for example, included no pro-climate content in 1994 or 1998, while in 2007 it occupied 17% of its manifesto’s text. This extreme case of within-party variation finds confirmation in case studies developed

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<sup>5</sup> There is one marginal exception to this rule: Denmark’s *Venstre* before the 1994 election. In 1990, it had secured 0.6% less than the Conservatives.

elsewhere (Seeberg 2016). Other high-points in the amount of pro-climate content (e.g., the Italian *Partito Democratico* in 2008; the Danish Social Democrats in 2007) also accord with existing case studies (Carter et al. 2014), as do some low-points (the UK Conservatives in 1997 and 2001; Ireland’s Fianna Fáil in 2011; the Italian centre-right in 2006) (Carter and Clements 2015; Little 2017; Pizzimenti 2009). More generally, the difference between centre-left parties (mean = 6.8%) and centre-right parties (mean = 5.4%) is in the expected direction and statistically significant ( $p = 0.04$ ), while the difference between pre-economic crisis (before mid-2008; mean = 6.4%) and parties since the crisis (after mid-2008; mean = 5.2%) is significant at the 0.1 level.<sup>6</sup>

[FIGURE 1 ABOUT HERE]

### **Content validation and a Core measure**

Perhaps the most fundamental difference between our data and alternative measures is the amount of content coded as relevant to climate policy and thus its comprehensiveness. The most directly-comparable measure in the CAP (CAP705) includes an average of four quasi-sentences for each document we code. The CMP Environmental Protection category (mean = 34 quasi-sentences) and the CAP Environment category (mean = 50) both have a broader base of content. The content coded for our measure incorporates an average of 70 ‘pro-climate’ quasi-sentences per document and is more squarely focused on climate policy *per se*.

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<sup>6</sup> One-tailed t-tests assuming equal variance.

Table 1 provides an overview of the substantive content of the text coded as ‘pro-climate’. In the average manifesto, 84% of pro-climate content is accounted for by six categories of quasi-sentence encompassing content that is generally acknowledged as being relevant to greenhouse gas emissions. These are general pro-environment content indicating support for reduced GHG emissions (35%); and content indicating support for lower-carbon transport (11%); energy (13%); energy efficiency (7%); carbon sinks (3%); and other specific climate policy content (14%).

The remainder of the coded content, accounting for 16% of the average manifesto’s pro-climate content (and 1% of the manifesto’s overall content), concerns policies typically seen as being less central aspects of climate policy: planning, waste and agriculture measures, and negative mentions of economic growth. To address doubts concerning the relevance of the coded text in these categories, and following Adcock and Collier’s (2001: 539) advice to examine the effects of varying the content of indicators, we propose a second, Core, measure that focuses on indications of support for a narrower set of core climate policies.<sup>7</sup>

[TABLE 1 ABOUT HERE]

### **Convergent/discriminant validation**

We assess the evidence for validity through convergent/discriminant validation in two parts. First, we examine the relationship between our measures of parties’ climate policy preferences and *document attributes* that serve as crude indicators of parties’

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<sup>7</sup> The Core measure developed here is unrelated to Jahn’s (2011) Core measure of Left-Right preferences.



preferences. Second, we examine their relationship with *established measures* of parties' environmental and climate policy preferences.

#### *Document attributes*

We examine the following document attributes: whether the document acknowledges climate change as a problem; whether it commits the party to climate change targets; whether it mentions climate change in its front matter; and the number of mentions of 'climate change' and cognate terms as a proportion of the overall word count. The relative frequency of these attributes appears to correspond to their significance as indicators of climate policy preferences: of the 64 documents, 40 acknowledge climate change as a problem; 31 make commitments to national climate change goals; and 19 mention climate change in the document's front matter.

We find strong evidence that these attributes are related to the General and Core measures of parties' climate policy preferences. For both measures and all of the document attributes the difference in mean values is in the expected direction and, with one exception, these differences are statistically significant. The size of the mean differences (see Table 2) ranges from 0.7 to 2.3 percentage points, which, given that the General and Core content accounts on average for 6% and 5% of manifesto content, respectively, seems sizeable. Climate change mentions (mean = 0.03) correlate positively and moderately with both measures. The correlation with the Core measure ( $r = 0.45, p = 0.00$ ) is stronger than the correlation with the General measure ( $r = 0.32, p = 0.01$ ).

[TABLE 2 ABOUT HERE]

### *Established measures*

We also compare our measures to established measures of climate and environmental policy preferences for which data are available: the CAP climate policy and Environment measures, the CMP Environmental Protection measure and its log-transformation devised by Lowe et al. (2011), and expert survey environmental salience measures. We expect positive correlations with each measure, but we do not expect the relationship to be so strong that they might be considered effectively identical. We also expect more specific measures of climate policy preferences (e.g., the CAP climate policy measure) to correlate more strongly than more general measures of environmental policy preferences.

[TABLE 3 ABOUT HERE]

The results in Table 3 bear out these expectations. The relationship between both General and Core measures of ‘pro-climate content’ and four established salience-based measures of environment and climate policy is positive in all instances and is statistically significant ( $p < 0.05$ ) in eight of ten instances. The correlations are moderate rather than strong and do not approach identity in any instance. They are stronger for CAP’s climate-specific measure than for the general environmental policy measures, with the exception of Lowe et al.’s (2011) measure. It is notable that the Core measure correlates considerably more strongly with CAP705 than the

General measure. The wide range of the expert survey correlation coefficients may reflect the small number of observations available for these data.

### **Positional measures**

To develop a positional measure of climate policy preferences, we counterpose pro- and anti-climate content. For content validation, and in contrast to established positional measures, this has the merit of pitting two ‘opposites’ against one another, rather than two more loosely related concepts (i.e., environment vs economy). Overall, 1971 quasi-sentences (2.7% of coded quasi-sentences or 31 per document, on average) were coded as ‘anti-climate’ content. Despite our relatively conservative approach to coding ‘anti-climate’ content (cf. Compston and Bailey, 2013) a large proportion of the substantive content of the anti-climate category consists of general economic policies (Table 4). These categories may contribute to a fuller picture of parties’ climate policy preferences, but they also risk ‘stretching’ the concept of climate policy (Sartori, 1970). At first sight, then, the relationship between this content and the concept of ‘climate policy preferences’, seems more tenuous than for the ‘pro-climate’ category.

[TABLE 4 ABOUT HERE]

To address this problem, we again identify two groups of quasi-sentences: Core content, referring to support for policies that are generally acknowledged as

having a direct impact on greenhouse gas emissions and additional content referring to more general economic policies.

To produce the General ‘positional’ measure of parties’ climate policy preferences, we subtract the total anti-climate content from the total pro-climate content. This derives a mean climate policy position of 2.7 (sd = 6.2). Likewise, to produce a Core positional measure, we subtract parties’ Core anti-climate content from their Core pro-climate content. The mean Core position is 4.2 (sd = 3.5). The mean (absolute) difference between the General and Core positional scores is 2.1 points (median = 1.3).

We again engage in convergent/discriminant validation by comparing these measures with document attributes and with established positional measures. The former comparison shows substantial and statistically significant mean differences in the expected direction (Table 5).

[TABLE 5 ABOUT HERE]

General and Core climate policy positions also correlate positively and significantly with four existing measures of parties’ environmental policy positions: an additive index of two expert-coded positional climate policy items; Weale et al.’s (2000) environmental policy index using CMP data; a log-transformed measure proposed by Lowe et al. (2011); and positional items in expert surveys (Bakker et al., 2015; Benoit and Laver, 2006). These correlations are by far the strongest for the most climate-specific measure (almost reaching  $r=0.6$ ); for the general environmental policy measures, they range between 0.29 and 0.48.

[TABLE 6 ABOUT HERE]

## **Discussion**

Our analysis produces three sets of findings. First, regarding *content validation*, while the content of the ‘pro-climate’ text tends to accord with existing knowledge concerning those policy categories most relevant to GHG emissions, the content of the anti-climate text as coded initially was less obviously related to the concept of climate policy. We responded by creating ‘Core’ measures. Second, regarding *convergent/discriminant validation*, the measures are related to document attributes and to established measures of climate and environmental policy preferences. Their relationship with climate policy measures is markedly stronger than with environmental policy measures, suggesting that they are better measures of climate policy preferences than measures of general environmental policy preferences. Yet they do not come close to being identical with existing measures, suggesting that they constitute a new and distinctive contribution to the measurement of parties’ climate policy preferences. Contextual differences between parties (left-right differences, the effect of the economic crisis) and accounts of individual cases also converge with expectations. Third, we have developed *positional measures*, which also accord with our expectations of convergent/discriminant validation.

Not only are our measures empirically distinct from extant measures of parties’ environmental and climate policy preferences, the approach that produces them also has several advantages. It accommodates the cross-sectoral nature of climate policy; so, in common with Guinaudeau and Persico’s (2013) approach to EU policy, it can provide a model for studies of other cross-sectoral policy areas. The coding scheme is relatively simple and, based on existing arguments concerning coding scheme design, we assume that this minimises error. The coding process

allows for contextual specificity within a systematic framework for scoring cases, which enables its application to other contexts, including future party documents, whilst being based on a fixed assumption: that reducing GHG emissions will remain the central outcome in climate policy. It covers as many aspects of ‘climate policy’ as possible, as evidenced by the amount of content coded compared to other projects. In the ‘trade-off between parsimony and completeness’ (Adcock and Collier, 2001: 539), we argue that existing measures err on the side of parsimony, not least in the case of climate policy. Where there is doubt about the evidence from content validation, our coding of subcategories allows researchers to vary the content of the measures systematically without having to recode the texts themselves. Finally, in contrast to measures of salience, we produce a measure which aims to account for the positional aspect of climate politics and which may help to control for contradictions in party policy, including ‘greenwashing’.

These observations require at least two riders. First, our measurements should be regarded as ‘falsifiable claims’ (Adcock and Collier, 2001: 532). Second, we do not claim that existing approaches or data are without merit. The moderate-to-strong correlations with our measure indicate convergence, even if these measures evidently include content that is not relevant to climate policy, or exclude content that is relevant to climate policy. Moreover, beyond their measurement of climate policy preferences, these approaches have further added value, such as including multiple other issues (CAP, CMP) and focusing on interesting theoretical questions (Båtstrand, 2014, 2015).

A question that we have not addressed directly is which of our four measures is ‘best’. Content validation – a pre-requisite for overall validity – suggests there is doubt about our General positional variable, as elements of ‘anti-climate’ policy may

stretch the concept of climate policy. More generally, we show that ‘anti-climate policy’, while intuitive and useful, can be problematic in its application, even when applied conservatively.

Distinguishing between the merits of the other three measures (General, Core, and Core positional measures) is more difficult. We have no ‘true’ measure of parties’ climate policy preferences against which they can be evaluated for criterion validity. The three measures take into account overlapping but somewhat different content (Tables 2 and 4). The relative merit of the positional measure may vary depending on how climate policy is conceived as an issue (valence or positional). We have highlighted arguments indicating the latter, but we do not regard them as definitive. The nature of the issue may vary between context and over time and it may be useful to measure both salience and position (Guinaudeau and Persico, 2014). Moreover, ‘Core’ and ‘Non-core’ content as presented here is an informed approximation rather than a definitive distinction.

Significantly, our analyses show that binary indicators of document attributes are valid indicators of parties’ climate policies, as they discriminate between parties with stronger and weaker climate policy preferences – a potentially valuable insight highlighting measures of party policy preferences that can be collected at low cost.

We acknowledge that our approach has possible shortcomings. Although our positional measure has the merit of pitting two clearly-articulated opposing concepts against one another, rather than the traditional ‘economy vs environment’ approach, it is not a ‘pure’ positional measure. This problem is difficult to avoid in manifesto-based approaches focusing on a broad policy dimension. In common with previous efforts to derive measures of policy preferences from manifestos, we weight each unit of content equally, whereas clearly some policies are more significant for GHG

emissions than others. The main alternative is to estimate the ‘weight’ of various pieces of content in terms of GHG emissions; outside this approach, a climate policy expert survey may implicitly take this into account. Finally, although we explicitly focus on minimising error (and maximising validity) through the design of the coding scheme and mechanisms of control, standardisation and cross-checking, we also acknowledge that using multiple independent coders is desirable and would allow us to measure that error.

## **Conclusion**

This article has presented an innovative approach to measuring parties’ policy preferences consisting of a set of salience and positional measures of climate change mitigation policy and has applied it to party manifestos in six European countries. It has presented evidence for the validity of these measures and has found that they are empirically distinct from and more comprehensive than extant measures. It argues that these measures represent a significant improvement on existing measures of parties’ climate policy preferences.

When new, cross-sectoral issues come on to the policy agenda and become increasingly distinct from established policy dimensions, parties’ preferences regarding those issues need to be measured so that questions central to party politics can be answered. The approach developed here can be extended to other policy areas and may be particularly beneficial for policies that are new, complex or cross-cutting, or that include valence and positional elements. One example is immigration policy (Castelli Gattinara 2016: 17-20; Kriesi et al., 2008: 66). While immigration is more regularly seen as a positional issue than climate change, it could benefit from



anchoring its coding in two opposite policy outcomes (more vs less immigration) and from the overall simplicity of a one-dimensional coding scheme. Other such issues may include European integration and social exclusion.

Measuring parties' climate policy preferences is an important step towards understanding their development and how they might shape other outcomes, especially government policy. We hope that these measures will be taken forward and applied to questions that are central to climate politics and to party politics. This may lead to further evidence for the validity of these measures, corresponding to 'nomological/construct validation' (Adcock and Collier, 2001: 543) as hypothesised relationships (e.g., between party preferences and government policies or between economic conditions and party preferences) are confirmed. This kind of research can also contribute to the broader climate change research agenda, and specifically to our understanding of the political obstacles to and opportunities for effective policy.

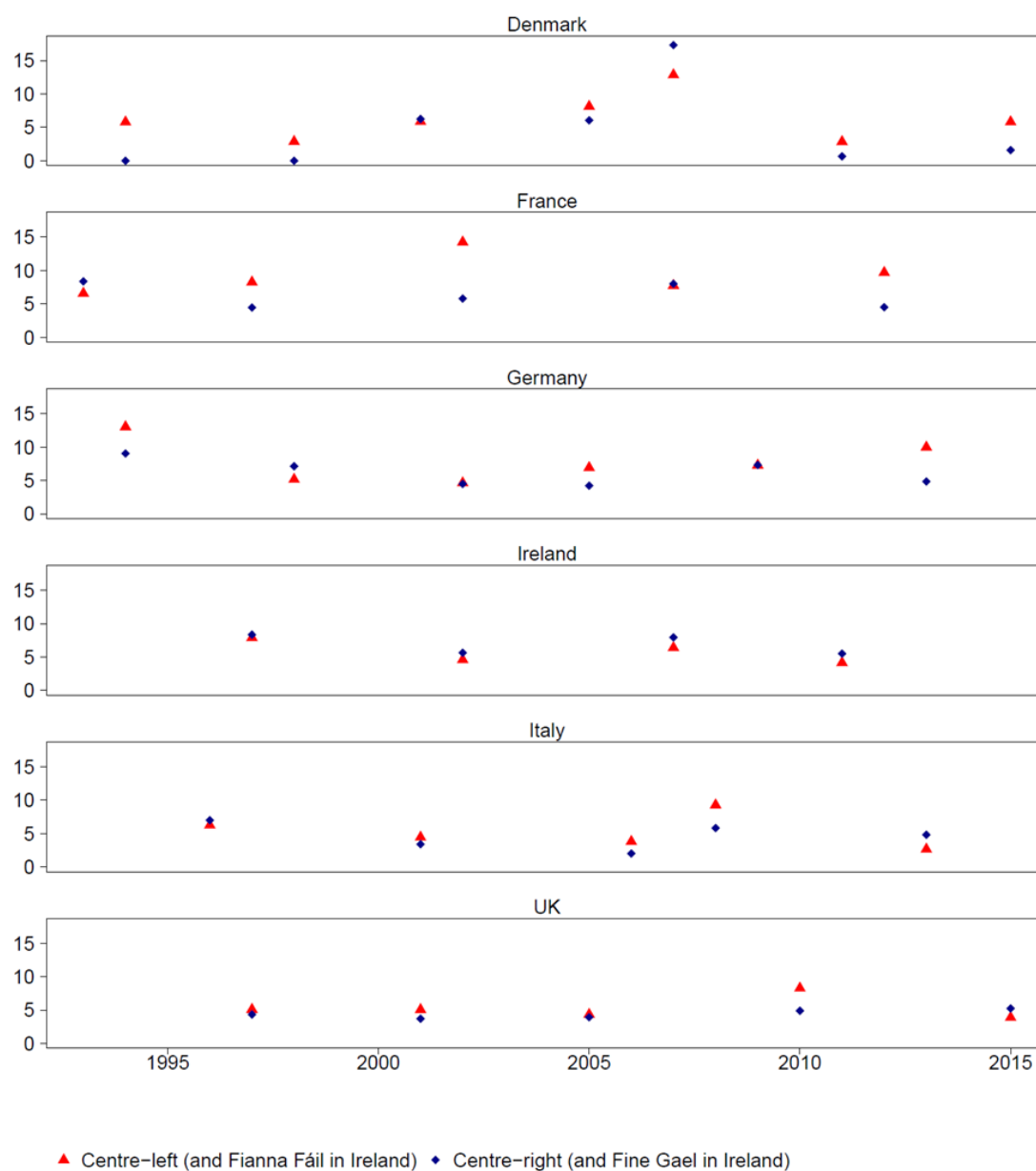
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See Online Appendix Table A1 for a list of parties. The two main parties in Ireland are both on the centre-right

**Figure 1. Pro-climate content**

**Table 1. Pro-climate subcategories**

<u>Core subcategories</u>	<u>Mean % of pro-climate content</u>
Pro-environment	35.1
Pro-climate policy (other)	14.4
Pro-lower carbon energy	12.8
Pro-lower carbon transport	11.4
Pro-energy efficiency	6.9
Pro-carbon sinks	3.1
<u>Non-core subcategories</u>	
Planning	7.6
Agriculture and food	5.6
Waste	3.1
Anti-growth	0.03

See Appendix C for detailed descriptions of these subcategories.

N=62. Two manifestos contained no 'pro-climate' content.

**Table 2. Document attributes and climate policy preferences**

			<u>% pro-climate content</u>		<u>% Core pro-climate content</u>	
		N	Mean	<i>p</i> -value	Mean	<i>p</i> -value
Acknowledges climate change	No	24	5.1	0.04	3.7	0.00
	Yes	40	6.6		5.8	
Commits to national climate goals	No	33	5.7	0.16	4.4	0.04
	Yes	31	6.4		5.7	
Climate change in front matter*	No	43	5.5	0.02	4.3	0.01
	Yes	19	7.3		6.6	

*p*-values are for one-tailed t-tests. *p*-values for tests assuming unequal variance are in italics.

\*Two documents did not include front matter.

**Table 3. Comparison with existing salience-based measures**

Data source	Issue	N	Measure	Pearson's <i>r</i>	<i>p</i>
CAP	Climate*	34	General	0.42	0.01
			Core	0.54	0.00
CAP	Environment	34	General	0.29	0.1
			Core	0.39	0.02
CMP	Environmental protection	62**	General	0.4	0.00
			Core	0.48	0.00
Lowe et al.	Environment (importance)	50	General	0.46	0.00
			Core	0.54	0.00
Expert surveys (CHES 2010; Benoit and Laver)	Environment	24***	General	0.42	0.04
			Core	0.32	0.12

\* CAP705. The available CAP data does not include Ireland or Germany.

\*\* See Appendix E for details.

\*\*\* Benoit and Laver (2006) and Bakker et al. (2015). See Appendix E for details.



**Table 4. Anti-climate subcategories**

<u>Core subcategories</u>	<u>Mean % of anti-climate content</u>
Pro-roads	8.6
Pro-aviation and shipping	6.2
Pro-fossil fuels	3.8
Anti-environmental taxes	3.4
Anti-climate (other)	1.8
Anti-nuclear	1.5
<u>Non-core subcategories</u>	
Pro-growth	32.5
Anti-taxes	18.6
Pro-tourism	10.4
Pro-global free trade	6.5
Agriculture	2.3

See Appendix C for detailed descriptions of these subcategories.

N=62. Two manifestos contained no 'anti-climate' content.

**Table 5. Document attributes and climate policy preferences (positional)**

			<u>General climate policy position</u>		<u>Core climate policy position</u>	
		N	Mean	<i>p-value</i>	<i>Mean</i>	<i>p-value</i>
Acknowledges climate change	No	24	0.1	<i>0.02</i>	2.6	0.00
	Yes	40	4.2		5.2	
Commits to national climate goals	No	33	1.2	<i>0.02</i>	3.3	<i>0.02</i>
	Yes	31	4.2		5.1	
Climate change in front matter*	No	43	1.4	<i>0.00</i>	3.3	0.00
	Yes	19	5.6		6.1	

*p-values* are for one-tailed t-tests. *p-values* for tests assuming unequal variance are in italics.

\*Two documents did not include front matter.

**Table 6. Comparison with existing positional measures**

Data	Issue	N		Pearson's <i>r</i>	<i>p</i>
EU Profiler/EU&I	Index: Renewables and private transport taxation*	21	General	0.59	0.00
			Core	0.58	0.01
Environmental policy index (Weale et al.)	Environment	62	General	0.48	0.00
			Core	0.44	0.00
Lowe et al.	Environment	50	General	0.34	0.02
			Core	0.29	0.04
Expert surveys**	Environment	32	General	0.38	0.03
			Core	0.46	0.01

\* See Appendix E for details.

\*\* Benoit and Laver (2006) and CHES 2010 and 2014. See Appendix E for details.

## Online Appendices

### Online Appendix A. Parties and documents.

**Table A7. Party documents**

<b>Country</b>	<b>Election</b>	<b>Centre-left party</b>		<b>Centre-right party</b>	
<b>Denmark</b>	1994	Socialdemokraterne	<i>Det går bedre for Danmark.</i>	Venstre	<i>Det vil Venstre.</i>
	1998	Socialdemokraterne	<i>Det kan gå to veje. Vores vei – Deres vej.</i>	Venstre	<i>Det vil Venstre.</i>
	2001	Socialdemokraterne	<i>Mennesker Først: Fri og fælles i det 21. Århundrede.</i>	Venstre	<i>Tid for forandring.</i>
	2005	Socialdemokraterne	<i>Mærkesager: Her kan du læse om de områder, hvor Socialdemokraterne vil gøre en ekstra indsats.</i>	Venstre	<i>Valgløfter.</i>
	2007	Socialdemokraterne	<i>Vi vælger velfærd: Socialdemokraternes grundlag for folketingsvalget d. 13. November.</i>	Venstre	<i>Valggrundlag, Folketingsvalg 13. november 2007: Et endnu bedre samfund.</i>
	2011	Socialdemokraterne	<i>Danmark skal videre.**</i>	Venstre	<i>Valggrundlag.</i>

	2015	Socialdemokraterne	<i>Det Danmark du kender.</i>	Venstre	<i>Flere danske job i hele Danmark.</i>
<b>France</b>	1993	Parti socialiste	<i>Le contract pour la France.</i>	Union pour la démocratie française/ Rassemblement pour la République*	<i>Le 40 priorites de l' UDF pour l'alternance /La France en mouvement. Rassembler pour changer.</i>
	1997	Parti socialiste	<i>Changeons d' Avenir.</i>	Union pour la démocratie française / Rassemblement pour la République*	<i>Programme du RPR et de l'UDF pour les elections legislatives de 1997.</i>
	2002	Parti socialiste	<i>Programme pour les legislatives 2002.</i>	Union pour un mouvement populaire	<i>25 engagements pour la France, avec Jacques Chirac.</i>
	2007	Parti socialiste	<i>Réussir ensemble le changement.</i>	Union pour un mouvement populaire	<i>Contrat de legislature 2007-2012.</i>
	2012	Parti socialiste	<i>Le changement c'est maintenant.</i>	Union pour un mouvement populaire	<i>Projet 2012: Protéger et préparer l'avenir des enfants en France.</i>
<b>Germany</b>	1994	Sozialdemokratische Partei Deutschlands	<i>Reformen fuer Deutschland.</i>	Christlich-Demokratische Union/Christlich-Soziale Union*	<i>Regierungsprogramm von CDU und CSU.</i>
	1998	Sozialdemokratische Partei Deutschlands	<i>"Arbeit, Innovation und Gerechtigkeit"</i> <i>SPD-Programm für die</i>	Christlich-Demokratische Union/Christlich-Soziale Union*	<i>Wahlplattform von CDU und CSU.</i>

<i>Bundestagswahl 1998.</i>					
	2002	Sozialdemokratische Partei Deutschlands	<i>Erneuerung und Zusammenhalt - Wir in Deutschland Regierungsprogramm 2002 – 2006.</i>	Christlich-Demokratische Union/Christlich-Soziale Union*	<i>Leistung und Sicherheit Zeit für Taten Regierungsprogramm 2002/2006 von CDU und CSU.</i>
	2005	Sozialdemokratische Partei Deutschlands	<i>Vertrauen in Deutschland.</i>	Christlich-Demokratische Union/Christlich-Soziale Union*	<i>Deutschlands: Chancen nutzen.</i>
	2009	Sozialdemokratische Partei Deutschlands	<i>Sozial und Demokratisch.</i>	Christlich-Demokratische Union/Christlich-Soziale Union*	<i>Wie haben die Kraft – Gemeinsam für unser Land</i>
	2013	Sozialdemokratische Partei Deutschlands	<i>Das wir Entscheidet.</i>	Christlich-Demokratische Union/Christlich-Soziale Union*	<i>Gemeinsam erfolgreich für Deutschland.</i>
<b>Ireland</b> ***	1997	Fianna Fáil	<i>1997 General Election Manifesto.</i>	Fine Gael	<i>Securing and sharing our prosperity.</i>
	2002	Fianna Fáil	<i>Election manifesto 2002.</i>	Fine Gael	<i>A Forward looking Ireland.</i>
	2007	Fianna Fáil	<i>Now, the next steps.</i>	Fine Gael	<i>General election manifesto 2007.</i>
	2011	Fianna Fáil	<i>Real Plan, Better Future.</i>	Fine Gael	<i>Let's get Ireland working.</i>
<b>Italy</b>	1996	L'Ulivo	<i>Tesi per la definizione della piattaforma</i>	Forza Italia	<i>Contratto con gli italiani.</i>

			<i>programmatica dell'Ulivo.</i>		
	2001	L'Ulivo*	<i>Rinoviamo l'Italia, insieme. Il programma dell'Ulivo per il governo 2001/2006.</i>	Casa delle Libertà*	<i>Piano di governo per un'intera legislatura.</i>
	2006	L'Unione*	<i>Per il Bene Dell'Italia. Programma di Governo 2006-2011.</i>	Casa delle Libertà*	<i>Programma Elettorale.</i>
	2008	Partito Democratico	<i>Un Italia moderna. Si puo' fare.</i>	Popolo delle Libertà	<i>7missioni per il future dell'Italia.**</i>
	2013	Partito Democratico	<i>L'Italia Giusta. Programma.</i>	Popolo delle Libertà	<i>Noi Ci Impegniamo. Programma. Elezioni Politiche 24 25 Febbraio.**</i>
<b>UK</b>	1997	Labour	<i>New Labour because Britain deserves better.</i>	Conservatives	<i>You can only be sure with the Conservatives.</i>
	2001	Labour	<i>Ambitions for Britain. Labour's manifesto 2001.</i>	Conservatives	<i>2001 Conservative Party General Election Manifesto. Time for Common Sense.</i>
	2005	Labour	<i>Britain forward not back. The Labour Party manifesto 2005.</i>	Conservatives	<i>Are you thinking what we're thinking? It's time for action.</i>
	2010	Labour	<i>The Labour Party Manifesto 2010. A future fair for all.</i>	Conservatives	<i>Invitation to Join the Government Britain. The Conservative Manifesto 2010.</i>
	2015	Labour	<i>2015. Britain can be</i>	Conservatives	<i>Strong leadership, a clear economic</i>

*better.*

*plan and a brighter, more secure future.*

\* = electoral coalition, \*\* = programme of a broader electoral coalition, \*\*\* = both parties are centre-right

## **Online Appendix B. Coding instructions.**

*This is an abridged and annotated version of instructions sent to coders in December 2014. It excludes some variables relating to policy domains that we did not carry forward into the coding of all manifestos and which are not relevant to this study. These instructions were supplemented by a correctly coded piece of text, by more detailed and context-specific discussions with the authors about individual pieces of content/policies, and by a guide to identifying quasi-sentences from Froio (2012). Existing research indicates that using sentences would have no significant impact on our measures' validity (Däubler et al., 2012), but we follow the CMP and most national CAP projects in using quasi-sentences for practical reasons: for four countries we had access to the quasi-sentences used by the CAP.*

There are four basic coding categories for quasi-sentences: 1. Pro-climate policy; 2. Anti-climate policy; 3. Neutral; 4. Not sufficiently relevant. They correspond to codes for the 'ccode' (climate code) variable.

### **1. Pro-climate policy quasi-sentences**

These are pieces of text that *indicate support for policies that, if implemented, would reduce net greenhouse gas emissions or increase carbon sinks.*<sup>8</sup> These quasi-sentences may be general statements that acknowledge climate change as a policy problem (e.g., 'Climate change is a challenge'), that are in favour of policies that would reduce emissions (e.g., 'We must fight climate change.'), or they may form

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<sup>8</sup> Further discussions with coders established that this should be a reduction relative to a counterfactual situation in which the policy was not implemented (rather than a reduction *per se*).



part of specific proposals for policies that would reduce net<sup>9</sup> greenhouse gas (GHG) emissions. Typical examples of climate policy instruments include: emissions trading, carbon taxes, feed-in tariffs, low carbon energy quota schemes, bans on fossil fuel plants without CCS and emissions or fuel economy standards for cars (Bailey and Compston, 2013)<sup>10</sup>. They may also include elements of a domestic framework for climate policy (e.g., climate legislation, new or more ambitious emissions targets, climate-specific institutions) (EBRD and GRI, 2011). Quasi-sentences that are ‘pro-climate policy’, may also include proposals to reverse anti-climate policy measures (see below). However, they may also include indications of support for a wide range of other policies that, if implemented, would reduce greenhouse gas emissions. The party may or may not explicitly link the policy proposal with emissions reductions. Note that climate policies may also include the *enhancement of carbon sinks* (e.g., wetlands).

## 2. Anti-climate policy quasi-sentences

These are pieces of text that *indicate support for policies that, if implemented, would increase net greenhouse gas emissions or reduce carbon sinks*.<sup>11</sup> These quasi-sentences may be statements that deny that climate change is a problem, general statements against policies that would reduce emissions (e.g., ‘We should not give in to climate change alarmism’) or (more commonly) they will be policy proposals that would increase net GHG emissions (Compston and Bailey, 2013: 147)<sup>12</sup>. These

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<sup>9</sup> ‘We specify net emission to exclude policies that simply shift emissions from one location [i.e., country] to another’ (Compston and Bailey, 2013: 147). In practice, this proved difficult to establish empirically, so we do not refer to net emissions in the main body of the paper.

<sup>10</sup> Later published as Compston and Bailey (2016).

<sup>11</sup> See fn.8.

<sup>12</sup> Note that, in contrast to Compston and Bailey, we do not insist that this should be a proposal for policy *change*. An affirmation that a party will stick with a status quo policy that

proposals may include the reversal of climate policies (see above). They may also include a wide range of policies that have increased emissions as a side-effect. Compston and Bailey identify the following as examples of anti-climate policy: construction of, or approval/incentives for, new fossil fuel power stations; new or increased fossil fuel subsidies; new or increased subsidies for energy-intensive industries: iron and steel, non-ferrous metals, chemicals and fertilizers, petroleum refining, cement and lime, glass and ceramics, pulp and paper, food processing; new trade liberalization agreements; new or increased subsidies for the automotive, aerospace or shipping industries; construction of, or approval/incentives for, new airports; increased support for meat production; and action by state agencies to clear forests for farmland, or approval/incentives for this. For a wider range of examples, see Table 2 in Compston and Bailey (2013: 148). This table may be a useful (but not definitive) guide to identifying anti-climate policies.

Anti-climate policies can be more difficult to identify than pro-climate policies. Therefore, in addition to the general guidance provided by Compston and Bailey's (2013) lists, we are developing a list of commonly encountered questions and answers so that we can maintain consistency between coders.

1. *Do all policies that would stimulate economic growth count as anti-climate policies?* Economic growth is linked to emissions (e.g., Stern, 2006: xi, xii). In order to maintain consistency across codings, we identify a) positive mentions of economic growth and b) proposals for general growth stimulus packages as anti-climate policies. However, we do not identify economic activity, job-

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will increase emissions is, for our purposes, just as significant as a policy change that would have this effect.

creation, house-building, pro-business policies etc. (as such) as anti-climate policies. Mentions of “green growth” are pro-climate.

2. *Do low-tax policies count as anti-climate policies?* They count only if they are statements that could include opposition to a carbon tax. E.g., “We promise no new taxes” in a context where there is no carbon tax. However, specific promises on income tax or other types of tax do not count as anti-climate policies.
3. Likewise, *general statements against regulation* might cover regulatory climate policies and therefore should be coded as anti-climate policies.
4. *The promotion of international tourism* is coded as an anti-climate policy, although it is not identified by Compston and Bailey as such. We disregard tourism promotion that is explicitly domestic (non-international).
5. *Policies that might encourage population growth* (e.g., subsidised childcare) are not counted as anti-climate policies (contra. Compston and Bailey). We would argue that they are too widely diffused in manifestos and the effects of individual policies are too marginal to be coded.

Other guidelines:

- Some pieces of text (pro- and anti-climate policies) will require some further research to assess whether they would increase or reduce emissions. One example of this has been High Speed Rail in the UK (see Appendix to the

coding instructions). You are welcome to submit similar notes with your coded data.

- Context (year and country) is important. Remember that we are examining whether text support policies that would increase (reduce) emissions in a specific context. For example, in an (hypothetical) energy system powered fully by coal, developing new nuclear capacity will clearly be a pro-climate policy; in an (hypothetical) energy system powered fully by renewables, developing new nuclear capacity would be an anti-climate policy.
- If in doubt, code the text as you think it should be coded, code it as ‘hcode’ (hard to code), enter a comment, and then discuss it with others in the project team.

### **3. Neutral or ambiguous quasi-sentences**

Neutral quasi-sentences are not the same as quasi-sentences that are not sufficiently relevant to GHG emissions. A neutral (or ambiguous) quasi-sentence should be relevant to net GHG emissions, but its content should imply that net emissions would be maintained at current levels (e.g., by clearly displacing emissions nationally or internationally [see footnote on net emissions, above] or by including policies that both increase and reduce emissions).

### **4. Quasi-sentences that are not sufficiently relevant**

These are quasi-sentences that are not sufficiently relevant to net greenhouse gas emissions to be coded as 1, 2 or 3 (e.g., ‘We are committed to improving language education in schools’). We identify these quasi-sentences (so that we can count them)

but we do not need to enter ‘4’ in each instance (we can simply leave the cells blank for now).

### **Summary of variables**

The key variables are as follows:

- Year
- Party.
- Qsno: Sequential numbers assigned to quasi-sentences.
- Qstext: “text” of the QS
- Hsplit: ‘hard split’ (0/1) – if you are unsure about whether the sentence should be split into quasi-sentences or not (see Froio 2012: 5).
- Junk (0/1) (see Froio 2012: 5)
- Head (0/1) (see Froio 2012: 5)
- Ccode: 1, 2, 3 or 4 (see above)
- Hcode (0/1): ‘hard code’ – if you have remaining doubts about some aspect of the coding that you have done (see also Froio 2012: 7).
- Comment: to help anyone who uses the data with resolving outstanding problems or understanding the coding.

### **Appendix to Coding Instructions: High speed rail in the UK 2010 manifestos**

How should high speed rail content be coded for UK manifestos in 2001, 2005 and 2010?

1. The Government's March 2010 plan entitled *High Speed Rail* cited HS2's estimate that the emissions impact would be between -25 and +26.6 million tonnes (Department for Transport, 2010: 53).
2. In 2010, the Climate Change Committee also suggested that it would be carbon neutral (Climate Change Committee, 2010: 185).
3. An NGO report in 2012 suggested that there would be savings in the 60 year timeframe (Greengauge, 2012) and in November 2013 the Department of Transport believed that it would produce carbon savings (Department of Transport, 2013).
4. A HS2 briefing ('CS034') published in November 2013 suggested that in the first sixty years of the project, savings would be less than emissions.

For the purposes of coding the manifestos, #1 and #2 are most important, as they reflected the available analysis at the time of the 2010 manifestos and they are the most authoritative sources. Note also that Greengauge is a pro-HS2 NGO. Therefore, I suggest coding high speed rail in the UK as ambiguous/neutral.

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## Online Appendix C. Coding subcategories.

These are the categories that we use in the coding scheme to describe individual pieces of text. They were developed inductively. Initially, coders gave the text a primary label and a secondary label if appropriate. Where more than one label applied, final decisions on the primary label were based on which category was primary in a quasi-sentence or (if that did not differentiate between the elements) which was mentioned first. The categories listed below were constructed by merging multiple logically coherent subcategories (i.e., labels). Coding is context-specific (i.e., the same policy proposal may have a different effect on GHG emissions in different countries or at different times). The descriptions below indicate content that is *typically* included (and not included) in the subcategories and, thus in the overall pro-climate and anti-climate categories.

An asterisk\* indicates a subcategory that is excluded for the calculation of Core measures.

### *Pro-climate categories*

**Pro-environment.** *Pro-environment text that potentially includes climate policy.*

Includes general statements in favour of environmental protection that may include the climate, pro-environmentalism, pro-sustainable development, pro-green growth, general criticisms of the government's environment policy that potentially include but are not specific to climate policy, pro-general environmental EU action that potentially includes climate change, pro-use of environmental indicators, pro-foreign environmental aid, pro-environmental taxation, sustainable tourism.



**Pro-lower carbon energy.** *Pro-renewables and cleaner energy. Includes nuclear and includes gas distribution where this would be an improvement on the status quo in terms of GHG emissions.* The coding scheme is typically indifferent on privatization of the energy sector unless there is evidence that it would contribute to reduced GHG emissions. Inclusion of content in favour of international interconnections depends on context. It includes proposals on clean coal in the few instances where they occur, giving parties the benefit of the doubt regarding its feasibility and impact.

**Pro-energy efficiency.** *Energy efficiency measures.* Includes buildings' energy efficiency. Includes smart grids and efficiency in transmission and generation. Includes measures to prevent water wastage during distribution or consumption.

**Pro-lower carbon transport.** *Pro-public transport, cycling and pedestrians, cleaner vehicles, road-pricing.* Includes general mentions of 'sustainable transport', pro-road pricing. Includes high-speed rail where there is evidence that it would reduce emissions. Safety (eg., rail safety) is not included. Establishment of transport regulators or chiefs not generally included unless specifically aimed at improved lower carbon transport. Anti-road congestion measures are not included. Rural transport schemes are included if they mainly imply public transport supports. Includes bus links to airports. Includes teleworking.

**Pro-carbon sinks.** *Pro-forestry, wetlands, protection of green areas.* Includes promotion of brownfield development instead of greenfield development.

**Pro-climate policy (other).** *Content that has not been included in named categories in this table.* Includes acknowledgement of climate change as a problem; acknowledgement of climate change impacts; general statements in favour of emissions reductions and climate action; specific climate policy proposals (e.g., climate legislation, carbon tax, GHG emissions limits).

**Waste.\*** *All pro-climate content at all stages of the waste cycle.* Includes all related content that indicates support for waste policies that would reduce GHG emissions or increase sinks.

**Planning.\*** *Spatial planning, pro-urban living measures.*

**Agriculture and food.\*** *Environmental protection measures in agriculture, aquaculture and forestry that include (or that may include) emissions-relevant measures.* Opposition to subsidies for GHG-intensive agriculture (including pro-CAP reform statements). Pro-domestic consumption of local and national food. Includes policies for better provenance labelling but do not include international trade promotion of local produce. Does not include organic farming.

**Anti-growth.\*** Explicit anti-economic growth statements.

*Anti-climate categories*

**Anti-environmental taxes.** Includes text that is anti-environmental taxes, anti-carbon tax, anti-fuel tax, pro-lower carbon tax, opposition to increased environmental taxation or pro-additional exemptions to an environmental tax.

**Pro-aviation and shipping.** Includes support for the aerospace industry. Pro-shipping content is included where this does not clearly displace higher-carbon transport.

**Pro-roads.** Support for road-building. Support for buying cars and for the car industry. Road safety is not included.

**Anti-nuclear.** Does not include opposition to specific waste storage facilities or to specific facilities abroad (e.g., Sellafield in the Irish case).

**Pro-fossil fuels.** Pro-fossil fuel extraction and in favour of consumption where these are not ‘cleaner’ (i.e., less GHG-intensive) sources.

**Other anti-climate.** Content that has not been included in named categories above.

**Agriculture.\*** *Text explicitly in favour of GHG-intensive agriculture.* Includes content in favour of the CAP and other subsidies for GHG-intensive farming. We code this conservatively; only explicit supports for GHG-intensive farming are coded.

**Pro-growth.\*** *Explicit positive mentions of economic growth.* Only explicit positive mentions of ‘economic growth’. Also includes general growth-stimulus measures (e.g., general stimulus packages) and explicit pro-consumption mentions. Does not include economic growth in the context of least-developed countries.

**Anti-taxes.\*** *Fewer or lower taxes.* General: must not be specific to one type of (non-climate relevant) taxation.

**Anti-regulation.\*** *Less regulation.* General: must not be specific to one type of (non-climate relevant) regulation. And can be specific to environmental or climate regulation. Does not include general statements concerning national competitiveness.

**Pro-tourism.\*** Does not include measures directed explicitly at domestic tourism. Does not include ‘sustainable tourism’, which is coded as pro-climate.

**Pro-global free trade.\*** Support for global free trade regimes. Does not include specific pro-export or pro-trade content. International regime level: content that is simply in favour of national exports is not included. Global scope: EU single-market not included.

## **Online Appendix D. Questionnaire.**

### **Coding document 3: Document description questionnaire**

Which party, year and document are you answering for?

#### **Problem acknowledgement**

1. Does the document reject, ignore or acknowledge the problem of climate change? If it rejects or acknowledges climate change, then provide a typical example from the text in native language with an English translation.
2. Does the document acknowledge present or future impacts of climate change (e.g., on health, immigration, biodiversity, flooding etc.)? Which impacts does it acknowledge? This can include local, national and international impacts.

#### **Climate goals**

3. Does the document commit the party to general national climate goals (e.g., specific emissions levels at specific dates, carbon neutrality). Describe these goals. You can disregard specific goals on renewable energies or on sectoral emissions.

#### **Prominence/attention**

4. What was the title of the section that dealt (more than any other section) with climate change issues? Where was the section that dealt with climate change placed in the manifesto? Answer: section X of Y. And: begins on page X of Y

(for this, use the overall number of pages in the pdf/paper document rather than the assigned page numbering).

5. Is climate change mentioned in the ‘front matter’ of the document? Which parts (cover, table of contents, foreword, introduction, leader’s introduction, other [describe]).
6. How often is “climate” (in a climate change-relevant context, excluding uses such as ‘political climate’ or ‘business climate’) or “global warming” mentioned in the document? What is the overall word count? Use the text file from polidoc.net to get an overall word count.

## **Online Appendix E. Notes on data used for Tables 3 and 6.**

**Note on CMP data used in analyses described by Table 3.** *Forza Italia*'s values in the CMP for 2006 were compared with the *Casa delle Libertà* document in our data. For France in 1993, we used the mean value of the UDF and RPR in the CMP data. We compared the Italian *Ulivo*'s value in 1996 to the *Partito Democratico della Sinistra* in the CMP data.

**Note on expert survey data used in analyses described by Table 3.** Benoit and Laver's (2006) measure refers to the importance of the issue for the party; CHES data refers to the 'importance/salience' of the issue for the party. Expert survey (and EU Profiler/EU&I data in the analyses that follow in Table 6 were paired with the closest election within 2.5 years either side of the time point. The time point for Benoit and Laver's data is assumed to be mid-2003; CHES is assumed to be mid-2010 (and mid-2014 for the analyses in Table 6. For the *Ulivo* in 2001, we use the mean of DS and the *Margherita* in the Benoit and Laver survey; likewise, we use the mean of UDF and RPR for the French centre-right.

**Note on EU Profiler/EU&I data used in analyses described by Table 6.** The items used for the index are as follows: 'The promotion of public transport should be fostered through green taxes (e.g. road taxing)' and 'Renewable sources of energy (e.g. solar or wind energy) should be supported even if this means higher energy costs'. The responses range from 'Strongly agree' to 'Strongly disagree' on a five-point Likert scale.

**Note on expert survey data used in analyses described by Table 6.** The CHES item is as follows: ‘0 = Strongly supports environmental protection even at the cost of economic growth; 10 = Strongly supports economic growth even at the cost of environmental protection’. The Benoit/Laver item is identical, with the exception of the word ‘strongly’, which it excludes. The correlations with the CHES data only (n=20) are very similar to the results in Table 6, albeit with higher  $p$  values.



## **Online Appendix F. Report on results excluding Denmark.**

Document characteristics (cf. Tables 2 and 5): across the four sets of tests that we did (one for each measure), the mean differences between groups decline. They lose their significance only for one of our four measures (the General measure). In all instances, the differences continue to be in the expected direction.

Comparisons with existing measures of environment and climate policy preferences (cf. Tables 3 and 6): the results range from very similar results to those with the full data set (for the CMP,  $n=50$ ); to higher correlation coefficients that lead to substantively similar conclusions (for the expert survey data,  $n=26$ ); to similar correlation coefficients that lose significance (CAP Environment category [ $n=24$ ], expert survey salience measures [ $n=24$ ]; EU Profiler/EU&I positional measures [ $n=17$ ]). The correlation coefficients between our positional measures and Lowe et al.'s positional measure becomes considerably weaker ( $r = 0.2$ ;  $n=40$ ) and clearly non-significant. One set of results is substantively different: correlations with the CAP climate measure ( $n=24$ ) loses significance and becomes negative (albeit weakly so). Both this and increased p-values associated with other variables may be accounted for by the low number of observations for which data is available in both the CAP and our data set.

In addition, the comparison of parties of the centre-left and centre right produces almost identical results and the mean difference between pre- and post-economic crisis documents remains similar, albeit losing its statistical significance.