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Environmental tax issues
Chapter XX: Public acceptability of a carbon tax – conceptual model and policy implications
Carbon Taxation Handbook

Note by the Secretariat

Summary

Chapter XX, **Public acceptability of a carbon tax – conceptual model and policy implications,** is presented to the Committee FOR DISCUSSION at its 21st Session, with a view to present it for acceptance at the 22nd Session.

Chapter XX was prepared by Sverker C. Jagers, Niklas Harring (Centre for Collective Action Research, University of Gothenburg, Sweden) and Simon Matti (Political Science Unit, Luleå University of Technology, Sweden), based on a presentation given at the Subcommittee meeting in February 2020. Although the Subcommittee did not have an opportunity to provide written comments to the draft Chapter XX, they gave feedback on the content of the chapter during the February meeting, and the three experts (who are not members of the Subcommittee) prepared the draft below based on that discussion.

The Chapter was drafted as an independent, self-standing piece, as indicated to the Committee in its 20th Session (and not just as part of Chapter 5 on revenue use), and was therefore expanded in scope to cover public acceptance considerations that go beyond the use of revenues. Given its scope, the Chapter has not been identified with a number yet – awaiting the Subcommittee's discussion on where it would be best placed in the flow of the Handbook on carbon taxation.

The Chapter makes the argument that, when introducing a carbon tax, policymakers should take into account how to achieve public acceptability, and not just how to achieve the best technical design; failure to do so may result in the inability to effectively implement the instrument and, in the worst cases, it can generate negative perception and mistrust of environmental instruments as a whole.

Chapter XX starts by developing a conceptual model of which factors potentially affect individual behaviours and preferences towards environmental instruments, including carbon tax. Based on these considerations, the chapter then analyses what elements of a carbon tax can increase public acceptability, for example increasing transparency, addressing distributional concerns, and clearly communicating the intended use of revenues (e.g. to

adapt to the effect of climate change, or to increase welfare). Finally, the chapter provides some example of how public concerns can be addressed, both from a policy design and from a timing perspective.

The Subcommittee would like to hear the Committee's views on whether the chapter should include a Section on real-world examples (potentially Section 4), and in the affirmative case, whether Committee members would be interested in contributing to this section.

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Chapter XX: Public acceptability of a carbon tax – conceptual model and policy implications

XX.1. Introduction

1. Following the multilateral agreement on a global climate change mitigation goal adopted at the Paris Climate Conference (Conference of the Parties (COP) 21) in December 2015, growing pressure is placed on governments worldwide to achieve greater reductions in the emissions of greenhouse gases.

2. For several reasons, relying on voluntary behavioural changes among societal actors will not suffice, and governments will therefore be tasked with designing and adopting increasingly more stringent domestic policies governing such changes. This, however, requires that policy-makers carefully consider the opportunities and pitfalls of implementing policy measures that hold the potential to achieve the mandated emission cuts – what can be called "feasible policy measures".

3. With a specific focus on carbon taxation (carbon taxes) as a policy measure addressing climate change mitigation, this chapter discusses the significance of acceptability for policy success, which factors that determine acceptability, as well as what policy-makers need to consider in order to increase the possibilities for successful policy implementation.

XX.1.1. Designing a feasible carbon tax

4. In order to negotiate the problem of climate change and reach the international targets for carbon emissions, a range of policy measures aimed at changing behavioural patterns among individuals have been proposed, developed and implemented. Evaluating the merits of different climate policy designs is, however, a complex task, which needs to be based on several criteria.

5. In particular, direct and indirect effects on the climate (i.e. effectiveness) must be considered in combination with the cost of implementing and enforcing the policy, and the possible side-effects of implementation (i.e. cost-efficiency) (cf. IPCC 2014). In regard to both effectiveness and cost-efficiency, pricing externalities through a carbon tax have apparent advantages compared to other types of price-based or regulatory measures (cf. Coria and Sterner 2012).

6. However, the extent to which a policy measure successfully addresses climate change is not solely dependent on technical or political-administrative factors. Especially when implementing a policy measure with the aspiration to alter social choice mechanisms and govern towards individual-level behavioural change, as is the case with carbon taxation, its effectiveness and cost-efficiency are also clearly interconnected to another component: the extent to which the policy measure is, or have the potential to be, *accepted* by the general public. Only when these three components coincide can the policy measure be defined as feasible (see figure XX.1 below). Although the focus of this chapter is placed specifically on public acceptability of carbon taxation, the last part of the chapter will also

discuss how policy-mixes, simultaneously addressing all three components in figure 1, may increase the probability for a successful policy implementation.

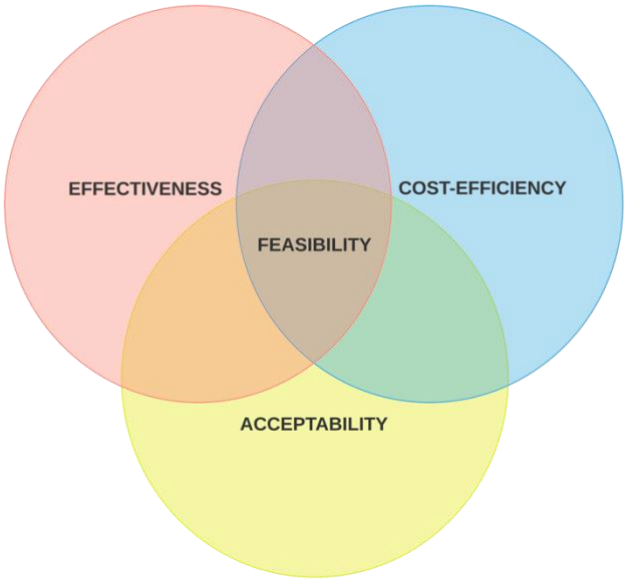

Figure XX.1: Feasibility as a function of Effectiveness, Cost-Efficiency, and Acceptability

XX.1.2. The importance of acceptance/acceptability

7. The basic notion behind any environmental tax, carbon taxes included, is to put a price on an activity that generates negative consequences (externalities) in order to foster behavioural change and in turn limit both the activity itself and subsequently its externalities (Janusch et al. 2020). It is a tool to, simply put, internalise the externalities. The introduction of environmental taxes is, furthermore, also in accordance with the normative position that actors should bear the costs of their own pollution.

8. This type of Pigouvian taxes (e.g. Pigou 1920) aimed at pricing externalities have long been promoted by both economists and policy-experts as being the most effective and cost-efficient way of forwarding environmental protection globally (cf. Tietenberg 1990; Chalifour et al. 2008, OECD 2010, Kallbekken & Aasen 2010, Sumner et al. 2011, Milne & Andersen 2012, Sterner 2012), not the least since they are relatively cheap to implement and administer, difficult to evade, and stimulate the future development of less carbon intensive processes and products.

9. Even though carbon taxes are both effective and cost-efficient tools for mitigating climate change, they are at present only implemented in a small number of jurisdictions around the world (World Bank Group 2014).

10. This cross-national difference in policy-choice can in part be attributed to contextual factors such as system of government and policy-making, path-dependency, economic conditions and dependencies, quality of government, and political culture (cf. Davidovic, Harring, & Jagers 2019, Harring, Jagers & Matti 2019, Kenny 2018, Linde 2018, Ščasný et al. 2017, Harring 2016, Cherry et al. 2014, Lachapelle & Paterson 2013).

11. However, previous research also points towards the highly politicized nature of climate policy measures in general and, given the costs involved for the individual citizen, carbon taxes in particular, making them exceedingly sensitive to public opinion for their successful implementation (Jagers et al. 2010; Harrison 2010; 2012; Crowley 2017; Feldman and Hart 2017; Shwom et al. 2010). More specifically, the marginal prevalence of carbon taxes in a global perspective is considered reflecting a lack of public acceptability[1] for such policy measures, thereby making them unfeasible (cf. Carattini et al. 2019).

12. Within the large body of research studying the opinion-policy relationship, public opinion has been shown to both constrain (Sobel 2001; Foyle 2004) and direct the actions of decision makers (Stimson 2007; Soroka and Wlezien 2010), as political leaders attempt to steer clear of decisions that risk upsetting large parts of the public. Apart from increasing the costs for monitoring and enforcing compliance in the short-term, low policy acceptability will also have long-term negative consequences for the legitimacy and authority of the political leadership itself (cf. Burstein 2003, Wallner 2008, Matti 2009).

13. The necessity of considering public acceptability alongside the more technical-administrative concerns for effectiveness and cost-efficiency is also apparent in political practice, where several attempts to implement carbon taxes has failed as a result of failing acceptability. Most

[1] In many studies of policy attitudes, the concepts of acceptability, acceptance and support are used interchangeably, without considering neither the timing or strength of the attitude in question. Here, we focus on *acceptability* as denoting an ex-ante attitude towards a proposed, but not yet implemented, policy measure. *Acceptance*, on the other hand, signals the ex-post evaluation of an already implemented policy, which commonly is not the case for CO-2-taxes as they are non-existent in many parts of the world. *Support* is, as opposed to the passive evaluation of acceptability/acceptance, an attitude signalling a readiness also to act as to realise the policy and its goals (cf. Schuitema et al. 2010, Kyselá et al. 2019). For policy-makers aiming to avoid public protests and discontent as a reaction to policy implementation, reaching a state of (passive) acceptability will be sufficient.

recently in Washington State, where a ballot initiative for a carbon tax was rejected in both 2016 and 2018, as well as in France, where the *gilets jaunes* (yellow vests) protests during the winter of 2018-19 led to the Macron-government's suspension of its proposed carbon tax (Maestre-Andrés et al. 2019, Carratini et al. 2019). Several other examples of the consequences of low public acceptability also exist. Harrison (2010, 2012) demonstrates how the ups and downs in Canadian climate opinion has both affected and constrained federal policy choice before the Trudeau-government's decision to implement the current fee-and-dividend system for carbon pricing. Crowley (2017) suggests that the Australian repeal of its carbon tax in 2014 was at least partly due to public opposition, and several studies show how governmental attempts to implement sustainability transitions are slowed down due to a lack in public support (cf. Drews & van den Bergh, 2016). In a U.S.A. context, both Feldman and Hart (2017), as well as Shwom, Bidwell, Dan, and Dietz (2010), contend that public support is key for motivating politicians to take climate action. Finally, Rabe and Borick (2012; see also Löfgren & Nordblom, 2009) point to the importance of reframing carbon pricing measures as neither a 'tax', nor on 'carbon', in response to an unfavourable mass opinion.

14. Thus, for governments in general – and perhaps for developing countries' governments in particular - it is crucial to recognize the importance of policy acceptability, as well as to design carbon taxes in a way that minimize public resistance and other political and economic costs. In order to do so, knowledge on the factors that determine (non-)acceptability is imperative. However, and as will be further asserted throughout this chapter, although some factors are known to generate positive environmental policy attitudes in general, how these function as drivers for attitudes towards carbon taxes in a particular country is very much an empirical question. Furthermore, it is a question that has yet to be answered for countries aspiring to implement carbon taxes in the future.

XX.1.3. Aim

15. The aim of this chapter is threefold. *First*, to develop a conceptual model of the main factors driving policy acceptability, drawing on findings in the current research literature. Such a model will in itself constitute a helpful guide for policy-makers aspiring to design and implement a purposeful carbon tax without sparking public outcry. *Second*, to utilize the conceptual model for discussing the implications for policy design in a more concrete way, including the provision of some hypothetical examples of how knowledge on policy acceptability can be utilized for combining carbon taxation with one or more additional policy measures. *Third*, to acknowledge the importance of conducting empirical pre-analyses for elucidating the interplay between individual-level drivers of policy

attitudes and the specificities of the country context, before designing and implementing carbon taxation in new settings.

XX.1.4. Specifications and limitations

16. Research in the field of environmental attitudes is both broad and multidisciplinary, with studies attempting to explain and map factors driving everything from the development of active pro-environmental behaviours (such as household waste sorting, travel behavior, and change consumption patterns) to the participation in pro-environmental demonstrations and organizational membership, or the petitioning of decision-makers (cf. Stern et al 1995; Stern et al 1999; Stern, 2000). Also, among studies focusing more specifically on policy attitudes - including policy acceptance - the dependent variable is treated rather differently and the distinction between diverse types of policy responses is commonly not theorized or discussed at any length.

17. Thus, whereas some studies use more active positions such as *policy* support or *policy demand* as the dependent variable, others have the ambition to map drivers behind more passive positions such as *policy tolerance*, *policy acceptance*, or *policy acceptability*, with the latter signalling an evaluation of a proposed policy rather than an already implemented one (cf. (Eriksson, Garvill & Nordlund, 2006; Schade & Schlag 2003; Batel et al. 2013, and note 1 above). Other concepts, such as *policy preferences*, *willingness to pay*, and *willingness to accept* has also been used as the dependent variable in analyses of policy attitudes. In the same way, studies also display a great diversity in the measures – both question wording and response categories – used to capture policy attitudes (Kyselá et al. 2019).

18. Given this multiplicity in both definitions and measurements, a full review of factors found as determining policy attitudes in general, and climate policy attitudes in particular, is rather difficult. Still, although different studies emphasize slightly different concepts and measurements, a number of factors have consistently been shown to drive policy attitudes more in general. These factors span both the individual level, focusing on personal values, beliefs, and norms; the (perceived) relationship between different societal actors; factors connected to the design of the policy measure itself; and a range of contextual variables that set different countries and cultures apart. Therefore, in the following overview we draw on the broad variety of studies on policy attitudes whilst at the same time acknowledging studies focusing on attitudes towards carbon taxes in particular.

19. Although not all of these factors have yet been systematically studied in relation to the public's acceptability of carbon taxes specifically, there are good reasons to believe that they constitute important drivers also for attitudes towards carbon taxes. Throughout previous research,

most of them have been shown to determine an overall propensity to support or accept governmental environmental action, as well as to drive attitudes towards other types of climate and environmental policy measures (policies which are often more popular than, and perceived to be less offensive than carbon taxes, cf. Hammar & Jagers 2006). Thus, it is reasonable to expect that thoroughly scrutinizing these factors and taking them into account also when designing and implementing a carbon tax will be decisive for future policy success.

20. Finally, it should again also be emphasized that most of the research on public attitudes towards carbon taxes, and other pro-environmental policy measures alike, is strictly limited in terms of geographical scope. For example, very little systematic research on public acceptability of a prospective carbon tax has been conducted in the Global South. This fact obviously (and negatively) impact our possibilities to draw any more direct conclusions for developing countries. Nonetheless, this fact again emphasize the importance of conducting empirical pre-studies before designing and implementing the policy proposal. This will be further elaborated in the final section of the chapter.

XX.2. Explaining attitudes towards carbon taxes and other pro-environmental policy instruments.

XX.2.1. Factors on the individual level

21. That individuals differ in terms of their propensity to act in favour of the environment, either through accepting or even demanding governmental action or by themselves changing behaviours is commonly explained by their personal motivation. Put shortly, individuals who hold pro-social and pro-environmental values, and perceive the current situation as problematic are more prone both to themselves act in favour of the environment and to develop positive attitudes towards policy measures. For policy attitudes in particular, the question of political values and political ideology also comes to the fore, as perceptions of governmental action and third-party steering are intimately tied to different ideological positions and political values.

a) Values and Beliefs

22. A major strand of research attempting to explain public policy attitudes takes its point of departure in different assumptions on individual motivation. For example, models drawing on standard rational choice theory (e.g. Arrow, 1951; Olson, 1965; Becker, 1976) generally assume that individuals are motivated by a rational self-interest to maximize personal utility and minimize personal costs. This leads proponents of neoclassical economics and public choice to suggest that individuals will accept the introduction of a policy instrument, or engage in collective action, in so

far as their behavior is perceived to further these goals. Now, while individual rationality seems to be a reasonable explanation in certain situations, a desire to maximize personal utility is hardly the sole driver behind policy acceptability. Various scholars have instead suggested that each individual hold multiple preference orderings and thus apply different preference maps in different contexts; sometimes allowing the inner consumer to make decisions based on personal utility, and sometimes being guided by the collective concerns of the citizen (Sagoff, 1988; Hausman & McPhearson, 1996). There is also ample research that demonstrates how the issue at hand serves as to activate these different roles. Although individuals more frequently will take on a consumer-role when asked to value a market good, a growing body of evidence indicates that for non-market goods and issues closely related to collective interests, moral and normative concerns play a significant role in guiding behavioral choices (Berglund and Matti, 2006; Sagoff, 1988; Spash and Hanley, 1995; Jacobs 1997; Wilson and Howarth 2002; Howarth and Wilson 2006; Mill et al. 2007; Dietz, Stern, and Dan 2009; Lo 2013; Söderholm and Sundqvist, 2000; Ebreo and Vining, 1990 & 2000; Pelletier et al. 1998; Guagnano et al, 1995; Brandon and Lewis, 1999; De Young, 2000; Heath and Gifford, 2002; Thøgersen 2003).

23. By this account, a wide range of studies has instead focused the role of individuals' values-based moral-normative concern to explain both environmental policy attitudes in specific, and pro-environmental behavior more generally (c.f. Schleich, Schwirplies, & Ziegler, 2018; Linda Steg, Dreijerink, & Abrahamse, 2005). These values-based models, such as the Value-Belief-Norm (VBN) theory (Stern, Kalof, Dietz, & Guagnano, 1995), assert that individuals' attitudes are the result of a causal chain of value priorities and beliefs, activating a personal norm or a feeling of moral obligation to act in a specific way. Research on the function of personal value priorities demonstrates how values, defined broadly as enduring and trans-situational goals (cf. Rokeach, 1973; Rohan, 2000), play an important role as explanatory factors for individuals' behavioral predispositions (Allport, 1961; Davidov, Schmidt and Schwartz, 2008; Schwartz and Boehnke, 2004; Schwartz, 1992; Schwartz and Bilsky, 1987; Grafton and Permaloff, 2005a & 2005b; Glynn et al, 1999; van Deth and Scarbrough, 1995; Feldman and Zaller, 1992; Sniderman, Brody and Tetlock, 1991; Eckstein, 1988; Dawson, 1979; Inglehart, 1977). An individual's value-orientation also have a clear relevance for policy attitudes, as most people understand political issues in terms of values and base their political choices and policy preferences on the connections they draw between the issue and their priorities among core values (Brewer and Gross, 2005; Schwartz, 1994; Feldman, 1988; Hurwitz and Peffley, 1987; Converse, 1964). Thus, following Jacoby (2006:720), "citizens can 'translate' their choices among core values into stands on public policy issues". In line with this, consistent support has also been found for the conclusion that an individual's value-priorities have both direct and indirect

explanatory power for preferences in the environmental sphere. The VBN-theory places individuals' pro-environmentalism within a self-transcendent, pro-social, altruistic or biospheric value-domain, as the values subscribed to within these domains motivate the restriction of personal interests in favor of the common good (Perlaviciute & Steg, 2014, Jagers and Matti, 2010; Jagers, Martinsson and Matti, 2014; Steg et al, 2005; Nordlund and Garvill, 2002 & 2003; Schultz and Zelezny, 1999; Stern et al, 1995; Stern and Dietz, 1994; Thøgersen, 1996; Eriksson, Nordlund and Garvill; Thørgersen and Grunert-Beckmann, 1997). Studies on policy attitudes – for example on environmental taxation – have confirmed the significance of values as relevant for carbon tax attitude formation (e.g. Dietz, Dan & Shwom 2007; Harring & Jagers, 2013).

24. Values are, however, only activated in situations when a person feels that the goals they signal are being threatened. As such, the explanatory model of the VBN-theory predicts that a set of beliefs mediate the effect of values on policy attitudes. Beliefs constitute a person's basic conceptions of how the world is and could be (e.g. Glynn et al, 1999; Rohan, 2000) and serve as to link abstract, cross-contextual values with situational specific attitudes by determining how values are interpreted, bestowed meaning and activated in relation to a specific area of the person's life (Converse, 1964; Altemeyer, 1998; Rohan and Zanna, 1996; Parsons, 1951). In most environmentally related studies, the New Ecological Paradigm (NEP)-scale (e.g. Dunlap and Van Liere, 1978; Dunlap, Van Liere, Mertig and Jones, 2000) has been applied for mapping individuals' environmental beliefs and drawing conclusions on behavioral predispositions. Originally designed as a measure of environmental concern, the NEP-scale serve as to tap the individual's understanding of the environmental problem: its overall causes (if stemming from human activities); its seriousness (in terms of a crisis or a catastrophe); as well as the prospect for society to solve it (a trust in human ingenuity). Previous studies suggest that the items included in the NEP-scale holds high validity for making predictions of both pro-environmental behavior in general (Schultz and Zelezny, 1999; Widegren, 1998; Schultz and Oskamp, 1996; Stern and Dietz, 1994; Stern et al, 1995; Blake et al. 1997; Clark et al. 2003), as well as of environmental policy attitudes in particular (Kim and Wolinsky-Nahmias 2014, Bord et al, 1998; Poortinga et al, 2004; Jaeger et al, 1993). Furthermore, by combining these belief-dimensions into coherent worldviews or paradigms, Milbrath (1996) proposes that it also captures a tension between different preferences for political solutions. On the one hand, subscribing to a strong environmental concern suggests a preference for comprehensive social change and openness for new and radical political solutions to deal with the environmental problem. On the other, low levels of environmental concern rather signals a resistance towards structural societal change, a strong trust in expert-driven politics, and a preference for the mechanisms of current, market driven

socioeconomic systems. How a person perceives the environmental situation should therefore be taken not only as a reflection of her inclination to form pro-environmental attitudes on a wide range of issues, but also of her response towards the introduction of specific policy instruments to govern change. I addition to more general beliefs about the environmental situation, the VBN-theory also predicts that two sets of more specific beliefs about the environmental situation serve as drivers for policy attitudes: an awareness of consequences (AC) i.e. a belief that a situation poses a threat to others of great value, and an ascription of personal responsibility (AR) i.e. a belief that the individual can adverse those consequences by taking personal action.

b) Awareness and knowledge

25. Taking inspiration from the latter set of specific beliefs included in the VBN-theory, some studies focus specifically on the extent to which awareness and knowledge matter for policy attitudes where both risk-perception (e.g. Lubell & Vedlitz, 2006; Lubell, Zahran & Vedlitz, 2007 Clark et al. 2003; Black et al. 1985; McKenzie-Mohr et al. 1995; Der-Karabetian et al. 1996;Wakefield et al. 2001; McDaniels et al. 1996; Stedman 2004; Berk and Schulman 1995) and a sense of personal efficacy (e.g. Finkel, Muller & Opp, 1989; Finkel & Muller; 1998; Gibson, 1997; Klandermans, 1984; Lubell & Vedlitz, 2006; Lubell, Zahran & Vedlitz, 2007) has been found important determinants for triggering positive policy attitudes. For example, people who are more knowledgeable about climate change are also more willing to accept climate change policy (e.g. Bord, O'connor, & Fisher, 2000; Krosnick, Holbrook, Lowe, & Visser, 2006; McCright, 2008; Park & Vedlitz, 2013; Stoutenborough & Vedlitz, 2014). Objective (i.e. actual) knowledge of, for example, climate change, as opposed to subjective knowledge ("I know a lot about climate change"), have also been found to be positively correlated with risk perceptions (O'Connor et al. 1999). The significance of knowledge and awareness for policy acceptance further highlights the importance of considering the communication surrounding environmental issues and environmental policy implementation, as elite and media cues (Druckman and Bolsen, 2011; Fiske and Taylor, 1991; Lupia, 2002; Lupia et al., 2000; Zaller, 1992) as well as different framings (Frey, 1997; Kahneman and Tversky, 1979; Tversky and Kahneman, 1981) affect our perception of societal issues.

c) Ideology

26. A pro-environmental value-orientation, coupled with beliefs that the current environmental situation is problematic and should be amended, increases not only the overall propensity to act in favour of the environment but also to form positive attitudes towards political attempts to introduce policy measures to this effect. However, attitudes towards the introduction of specific policy measures, such as a carbon tax, to govern behavioural patterns is also affected by preferences for

political steering and state intervention in general, i.e. by a person's political values and/or ideological orientation (cf. Harring et al. 2020, Harring et al. 2017). Whereas political values are defined as the basic normative principles about government, citizenship, and society that individuals want to see implemented in the political system (McCann, 1997; Inglehart & Klingemann, 1979), ideology is understood as a set of values-based ideas by which a social group tries to make sense of the world. An ideological position is thus founded in ideas that explain, predict as well as evaluate social conditions, and gives its bearer a personal understanding of his or her relation to the rest of the world (Ball and Dagger 1999; Shively 2003). Ideological orientations can be measured by different scales, although the most well-used approach focuses on individuals' subjective positioning on either a left–right or liberal-conservative scale. Each position on the scale represents conscious beliefs and attitudes towards the political, social, and economic system. Thus, when moving to the left of the spectrum, we increasingly find enhanced support and acceptance for an active, protective, redistributive and non-neutral state, combined with a deepening skepticism against the market. Conversely, growing preferences for a passive, neutral state and acceptance for an unregulated market is located on and increases along the right-hand side of the same spectrum.

27. In a range of studies, political-ideological orientation have been demonstrated as a powerful explanatory factor for both voting, party preferences, and attitudes to specific political issues and propositions (cf. Jacoby 1991; Jost 2006; Lijphart 1984; Treier and Hillygus 2009, Kumlin, 2004, Gilljam & Holmberg, 1995; Karlsen & Ardal, 2016, Tobler, Visschers, & Siegrist, 2012; Campbell & Kay, 2014; Feygina, Jost, & Goldsmith, 2010; Häkkinen & Akrami, 2014; Jagers, Harring, & Matti, 2018; Ohlsson, Oscarsson, & Solevid, 2016). Also for pro-environmental attitudes in specific, political-ideological orientations have been demonstrated as an important driver (Clements 2012, 2014; Greenhill et al. 2014; Hamilton and Saito 2015; Jones and Dunlap 1992; Krosnick et al. 2000; Liu et al. 2014; Neumayer 2004; Tranter 2011). A consistent finding over time is that individuals self-identifying as being to the right are more hesitant to embrace environmentalism and environmental concern compared to those on the left-hand side of the scale (Dunlap and McCright 2008; Dunlap, Xiao, and McCright 2001; McCright and Dunlap 2011, 2012; McCright et al. 2014; Smith and Leiserowitz 2012; Xiao and Dunlap 2007, Aasen 2017).

28. The assumed reason behind this ideological divide is the strong associations between ideological orientation and the formation of preferences for market regulation and the economic growth paradigm, which generates scepticism towards the environmentalist vision of a steady-state economy among rightists. Also from a perspective more readily connected to fundamental visions of state–society relations, ideology can be expected to affect attitudes towards pro-environmental policy

measures in particular. For example, it is reasonable to assume that individuals who position themselves to the left on the political spectrum will be less negative to the introduction of environmental policies not only because such measures are compatible with their conviction that the market economy needs to be regulated, but also because they believe that government should take a more active role overall.

29. Although the role of political values and ideology is important for the formation of attitudes both towards the environment in general and political steering in particular (cf. Feldman & Hart, 2018), few studies have focused the particular relationship between ideology and climate policy attitudes and even fewer outside the developed parts of the world. Empirical examples on how a political orientation to the left are conducive for more positive attitudes towards the implementation of climate policies, including carbon taxes, can for example be drawn from studies in Norway (e.g. Aasen, 2017; Aasen & Vatn, 2018; Kvaløj et al., 2012), Sweden (Hammar & Jagers, 2007; Harring & Jagers, 2013 Harring & Sohlberg, 2016, Harring et al. 2017), Switzerland (Tobler, Visschers, & Siegrist, 2012, Bornstein & Lanz, 2008; Thalmann, 2004), and the US (Severson & Coleman, 2015, Leiserowitz, 2006; McCright, 2008; McCright et al., 2013a, 2013b; Park & Vedlitz, 2013; Zhao, Leiserowitz, Maibach, & Roser-Renouf, 2011). Simultaneously, however, recent research asserts that such a left–right cleavage only appears to be valid for some countries and some contexts, and even runs in the opposite direction for others (Fairbrother 2015; McCright et al. 2016; Harring and Sohlberg 2016), and the ideological divide also seems particularly relevant for some policies while much less so for others (McCright et al. 2016; Nawrotzki 2012). Furthermore, although the general pattern of an ideological divide in environmental attitudes is fairly well established, significantly less is known about why, and by which mechanisms, the left and the right differ in their evaluation of different policy proposals and policy designs. Taken together, the relationship between ideology and policy attitudes is far from fully elucidated and thus deserves further scrutiny.

XX.2.2. Inter-relational factors

30. Recently, studies aimed at better grasping the nature of collective action problems have done so focusing the concept of trust. High levels of trust, both in other people's voluntarily compliance with policy initiatives (i.e. interpersonal trust) and in the political-administrative system responsible for implementing and enforcing policy (i.e. institutional trust), is suggested to benefit the stability and effectiveness of a number of societal processes, including the acceptance of, support of and compliance with political decisions (Hetherington 1998). However, with a few notable exceptions (e.g. Jakobsson et al. 2000, Hammar and Jagers 2006, Dietz et al. 2007, Kallbekken et al. 2013, Harring 2014b), most models of environmental policy acceptance have, to date, neglected this

collective action aspect of the individual's decision-making processes and therefore either overestimated the significance of values and beliefs as governing behavioral choice, or failed to demonstrate the mediating effect of trust in a model of individual motivation.

a) Interpersonal trust

31. Similar to the way social norms serve as a compass indicating how people in a society ought to behave, beliefs about others intentions to comply also affect personal attitudes toward political decisions and policy instruments (Biel and Thøgersen 2007). Of particular interest is the conclusion by Ostrom (2005) and Torgler (2003) that many individuals are 'conditional cooperators', ready to engage in collective action only to the extent they perceive others are willing to do the same. In small-scale settings, characterized by regular interaction and face-to-face communication, previous experiences and reputation guide expectations of reciprocity. In contrast, in large-scale situations the extent to which other people are believed to cooperate is instead based on estimated trustworthiness, where high levels of interpersonal trust increase personal willingness to cooperate (cf. Sønderskov 2011). In guiding public acceptance for policy instruments more specifically, interpersonal trust works in several different ways. On the one hand, distrust in others' predisposition for voluntary behavioral change can be expected to drive general acceptance for the introduction of policy measures mandating change or compensating for defective behavior, in particular if the policy problem is perceived as highly pressing. On the other, low levels of interpersonal trust also affect evaluations of a policy instrument's effectiveness and fairness negatively, and can therefore reduce acceptance of a particular measure if perceived as too easy for free-riders to evade (Hammar et al. 2009, Harring and Jagers 2013). In fact, using cross-national data, Harring (2014b) finds that low levels of interpersonal trust increase the acceptance for stricter regulation and policy instruments that punish non-cooperation, whereas high interpersonal trust rather drives preferences for policy measures that reward cooperation.

b) Institutional trust

32. As the successful implementation of a policy instrument is clearly dependent on both the ambition and ability of political institutions to monitor and enforce compliance; to create incentives for behavioral change; and to present viable alternatives to the public, also institutional trust becomes decisive for policy acceptance (Devos et al. 2002, Lubell et al. 2007). Thus, unless people trust the competence of either politicians or political institutions to understand the problem at hand and know what is required for amending it, they will neither be prone to accept policy measures nor to comply with them. As proposed by Dietz and colleagues (2007) as well as Kellstedt and colleagues (2008),

there are also good reasons to expect the effect of institutional trust to be particularly tangible for shaping attitudes in complex and contested issues such as climate change, as the public has to rely more heavily on political elites to accurately evaluate the need for different policies. Furthermore, the effect of institutional trust on policy attitudes is most pronounced for redistributive policies and those implying personal sacrifices, which the implementation of for example a carbon tax indeed does (Hetherington 1998, Rudolph and Evans 2005).

33. Furthermore, institutional trust reflects views on the ability of political government to handle demands for reciprocity. The possibility for regulative measures to increase predictability of human interaction and thereby eradicate the free-rider problem is intimately connected to a trust in political institutions' ability to simultaneous implement an effective system for monitoring and rule-violation, so as to increase both the effectiveness and fairness of these measures (Jagers and Hammar 2009, Harring 2014a). A related approach focuses on the effects of institutional trust on public acceptance for taxes more specifically. As market-based policy instruments in general and taxes in particular are the measures of choice in most countries' climate policy, this is a highly significant strand of research that also further substantiates the connection between institutional trust and policy-specific beliefs. For example, a range of studies (Tyler 1990, Sandmo 2005, Hammar and Jagers 2006, Dresner et al. 2006, Kallbekken and Sælen 2011, Harring and Jagers 2013, Kallbekken et al. 2013) find that a lack of trust in government, and in particular in the government's use of the revenues generated from the tax, is a key explanatory factor for low levels of public acceptance. They further suggest that the significance of institutional trust might explain why earmarking of revenues, ensuring a fair and proper recycling of public funds, has been found to increase the acceptance for new taxes.

34. To conclude, there are good reasons to assume that both institutional and interpersonal trust play an important part in promoting or hindering public acceptance of climate policy instruments and ultimately political legitimacy. It potentially affects acceptance directly by shaping the way in which individuals' perceive and understand the need for policy instruments in general, as responses to climate change-problems as well as for compensating non-cooperative behavior of others. Trust also has several indirect effects on policy acceptance channelled through policy-specific beliefs; it contributes to shaping evaluations of policy effectiveness and the distributional effects of a specific instrument. Despite the fact that several studies include trust as a possible explanatory factor driving public policy acceptance and acceptability, very few studies systematically analyze the mechanisms by which it impacts acceptance by accounting for both versions of trust alongside individual moral-normative motivations and policy-specific beliefs. It thus seems reasonable to suggest that any attempt to comprehensively explore and explain variations in public acceptance for climate policy

instruments on the individual level should open up for the effects of trust. A suggestion for such a model is illustrated in Figure 1 below. Moreover, since an individual's level of interpersonal and institutional trust is not readily connected to the specific issue of climate change, we should also expect the effect of trust on acceptance for climate policy instruments to be independent of, rather than stemming from, the factors included in values-based models.

XX.2.3. Factors tied to the policy measure

35. Although acknowledging the significance of individual-level and inter-relational factors, the development of attitudes towards specific policy proposals cannot be solely assigned to the individual's environmental motivation, his or her ideological positioning, or outlook on the trustworthiness of governmental administrations and other societal actors. These factors certainly determine a general propensity to form positive attitudes towards the implementation of environmental policy tools, but it tells us less about the formation of preferences for different types of policy measures, or how negative attitudes might be mitigated through different policy designs. As plenty of research demonstrates, there are significant variations in support and acceptance across different types of policy measures and between different policy designs. For example, more coercive measures are usually received more negatively, as they are perceived as both more unfair and more infringing on personal freedom of choice (Eriksson, Garvill, & Nordlund, 2006; Jagers & Matti, 2010; Poortinga, Steg, & Vlek, 2004; Steg, 2005; Steg & Vlek, 1997). Similarly, attitudes towards the introduction of carbon taxes rather than carbon trading schemes or increased emission-regulations, is commonly lower although the outcomes are essentially the same (cf. Rabe 2012). Furthermore, recent experimental studies (e.g. Jagers, Martinsson & Matti 2018) demonstrate how altering policy design can be a route towards ameliorating some of these negative perception-based sentiments. Thus, the perceived characteristics and consequences of the proposed measure should be added to the catalogue of factors determining policy attitudes. The effect of personal perceptions of policy consequences for the formation of attitudes is evident both in research on traditional political behaviour (e.g. Caprara et al. 2006; Fiske and Taylor 1991; Zaller 1992; Tversky and Kahneman 1986) as well as in relation to the design of pro-environmental policies (Eriksson, Garvill and Nordlund, 2006; Harring 2016; Jagers and Matti 2010; Steg, Drejjerink, and Abrahamse 2005), where specific beliefs about a policy measure's consequences, or *policy-specific beliefs*, have been suggested to mediate the effect of individual-level factors.

a) Policy-specific beliefs

36. The individual's evaluation of a policy measure's consequences is hypothesized to be based on at least four dimensions (e.g. Samuelson & Messick, 1995). First, *personal outcome expectancy* refers to the extent to which the implementation of a policy instrument is expected to imply consequences in terms of higher costs for the individual (Jakobsson, Fujii, & Gärling, 2000; Joireman et al., 2001; Schuitema, Steg, & Forward, 2010). A fundamental account in much of the literature on policy acceptance is that attitudes are shaped by individuals' beliefs about whether, and to what extent, they are negatively or positively affected by a certain policy (e.g. Ajzen & Fishbein, 1980; Lubell et al 2007). Hence, people are more likely to support, accept and comply with policies that are in line with their interests or the interest of the group to which they belong. For example, owners of diesel cars are more critical of diesel bans in cities. There are also a number of individual-level demographic or socioeconomic factors (e.g., gender, income level, ethnicity, class position) that affect people's acceptance of third-party interventions such as carbon pricing. Whether or not a certain factor plays a role is linked to whether individuals perceive that this policy may affect their group or themselves. Accordingly, also gender, income level, ethnicity, and class position have been shown to affect attitudes toward environmental policy (Van Liere & Dunlap, 1980). Indeed, although pro-environmental behavior is usually governed by a value-based sense of collective benefits, an individual's decision not to accept the introduction of a specific policy instrument tends to be motivated by consequences for personal utility and a lack of alternative behavioral options (cf. Frey 1997, Guagnano et al. 1995). Costs and benefits are, however, not only calculated in material- or convenience-terms. In social dilemma research, the restraints on behavior arising from descriptive or prescriptive social norms are well researched (Cialdini et al. 1990). In short, social norms determine what is socially approved within the specific context or collective, and can thereby both hinder and promote expressions of acceptance for political initiatives in a manner similar to other resource-related costs. Given that social norms operate both on macro (i.e. national) and micro (i.e. group) levels, we can furthermore expect them to be one of the culprits behind both cross- and within-country differences in policy acceptance.

37. *Second*, attitudes towards new policy measures are based on their perceived distributional effects. More precisely, the extent to which the consequences of a policy instrument are perceived as fair is highly significant for the degree of acceptance it receives (Bamberg & Rölle, 2003; Fujii, Gärling, Jakobsson, & Jou, 2004; Jakobsson et al., 2000; Johansson-Stenman & Konow, 2010; Joireman et al., 2001; Schuitema, Steg, & Van Kruining, 2011). However, perceptions of fairness are not always tied to the type of policy instrument (e.g. a tax), but rather to the design of a specific scheme and, not least, the suggested use of its generated revenues (Bento, Franco, & Kaffine, 2009; Dresner et al., 2006; Jagers & Hammar, 2009). For example, both in Sweden and elsewhere, studies

on the introduction of carbon taxes concludes that their perceived distributional effects, and therefore whether the individual lends his or her aqcceptance, are clearly dependent on how the revenues from the tax are used. Whereas an increased carbon tax might be perceived as highly unfair to those with limited options for alternative modes of transportation and a constrained personal economy, using the revenues to expand public-transport could significantly reduce this perception as it lessens the negative effects of making one mode of private transportation more expensive.

38. *Third*, the extent to which a policy instrument is perceived to impact the individual's freedom of choice, and thus whether its implementation necessitates a change in behaviour, seems to affect acceptability both directly and indirectly: directly, as coercive push-measures are generally less accepted (Hölzer, 2003; Jagers & Matti, 2010; Rienstra, Rietveld, & Verhoef, 1999; Linda Steg & Vlek, 1997); and indirectly as significant infringements of personal freedom of choice are also understood as being less fair (e.g. Eriksson et al., 2006). However, it is important to stress that we should expect policy-specific beliefs to vary significantly between both individuals and contexts. For instance, it seems reasonable that the distributive principle used for evaluating a policy instrument and judge its degree of fairness is based in value-priorities. Similarly, the extent to which infringements of personal freedom affects the level of acceptance for a policy instrument depends on the importance of personal autonomy as a core value, as well as on the individual's willingness or possibilities to personally comply with the mandated behavior change.

39. *Fourth*, perceptions of the measure's effectiveness, or the extent to which a policy instrument is expected to achieve the aims it is introduced to achieve, affect the individual's policy acceptance in several ways. Without elaborating further on the underpinning mechanisms, some studies note the negative correlation between perceptions of ineffectiveness and acceptance of a policy measure (Jaensirisak, Wardman, & May, 2005; Jagers & Hammar, 2009; Kallbekken & Sælen, 2011; Schuitema et al., 2010). Furthermore, there is ample evidence that, in particular for more coercive measures, perceived effectiveness is linked to perceived fairness. Confidence in the policy measure's ability to contribute to a common good is positively linked to a perception of its consequences as fair (Bamberg & Rölle, 2003; Eriksson et al., 2006). Most basically, perceptions of effectiveness are causally linked to general problem awareness thus further verifying the connection between policy-specific beliefs and the VBN-model (cf. Rienstra et al. 1999). Specific views on the nature of the problem, including its basic causes, severity, negative impacts and possible solutions, can also be hypothesized to affect the perception of a policy instrument as more or less effective. In particular, understanding the climate problem to be highly pressing and requiring immediate large-

scale changes in public behavior, or considering a slow-moving development of personal values and norms as sufficient, opens up for different views of what an effective policy entails.

40. In figure XX.2 below, the proposed relationship between the individual, relational, and policy-specific factors is illustrated.

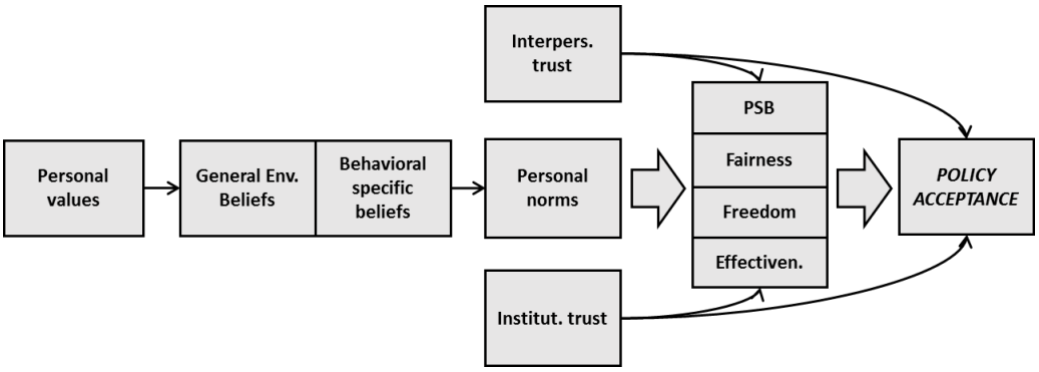

Figure XX.2: the relationship between the individual, relational, and policy-specific factors (to be further elaborated).

XX.2.4. Contextual factors

41. Differences in policy acceptance is, however, not only evident between individuals. Also in a country-comparative perspective we note significant differences in both policy acceptance and subsequent policy implementation. Attempts to explain these country-level differences have guided researchers to target contextual factors in addition to the individual-level focus to better understand the development of policy attitudes. Even more importantly, although context can be expected to shape overall attitudes towards policy measures, it is also reasonable to assume that contextual factors interact with individual-level and interrelational factors thus altering their effect on policy attitudes (cf. Davidovic et al. 2019, Jagers et al. 2018). In the literature, cross-national variations in policy implementation have been attributed to, for example, system of government and policy-making (Harrison & Sundstrom 2010, Lachapelle & Paterson 2013), path-dependency (REF!), national economic dependencies (Harring, Jagers, & Matti, 2019; Kenny, 2018; Ščasný, Zvěřinová, Czajkowski, Kyselá, & Zagórska, 2017), political culture (Cherry, García, Kallbekken, & Torvanger, 2014, Inglehart & Baker 2000, Bardi & Sagiv 2003, Schwartz 2006), wealth and affluence (Franzen and Vogl 2013), quality of government (Harring, 2014), social capital (ref), weather events (ref) and the political context in which policy decisions are taken and implemented (see for example, Linde, 2018, Stoll-Kleemann, O'Riordan, & Jaeger, 2001, for an overview see Drews and van den Bergh 2016). For example, studies targeting the effect of political culture suggest that even among Western democracies, distinct differences in policy attitudes can be found. Where individual autonomy and

active self-assertion are core cultural elements, such as in the Anglo-Saxon culture, policy preferences favor less governmental regulation and are more positive towards certain types of market-based instruments (Cherry et al, 2017; Jagers et al, 2010). In contrast, a general cultural emphasis on group well-being and egalitarianism, as to be found in the Scandinavian context, is likely to be expressed in more cooperative terms with a significant element of state power (Inglehart & Baker 2000; Schwartz 2006).

42. A context where climate denialism is present may, through elite cues, also affect people's environmental policy acceptance. One such example is the U.S context where conservative media and politicians have endorsed a climate denial message. In the literature on environmental attitudes in general and environmental policy attitudes in particular there is an overarching line of thought saying that there Yin-Yang-relationship between the state of the economy and the public's attention to environmental issues, both over time and between countries. When the economy is doing well people can afford to prioritize the environment. In a similar vein, it is argued that people in developing countries prioritize (and hence accept climate policy) to a lower degree than people in developed countries. However, these findings and arguments have been questioned. Some datasets have shown that economic cycles do not always correlate with environmental concern (Harring et al. 2011) and that people in developing countries are not less willing to accept and support environmental protection policies (ref, e.g., Dunlap).

43. Recent studies also suggest that differences in political and institutional quality, so called *Quality of Government* (QoG) explain why policy attitudes differ across countries. In particular, some evidence points towards that higher levels of corruption and related problems of institutional quality correlate negatively with attitudes towards the use of economic policy tools, such as taxes and subsidies, but positively with a preference for command-and-control regulation. Focusing on welfare policies, Svallfors (2013; see also Holmberg, Rothstein, and Nasiritousi 2009; Rothstein, Samanni, and Teorell 2012) concludes that an overall perception of institutions as being efficient and fair drive positive attitudes towards higher taxes and governmental spending. Di Tella and MacCulloch (2007) suggest that perceived corruption is connected to acceptance of more governmental market regulation, and several authors demonstrate how the anticipated efficacy of non-corrupt governments' market interventions is both higher and thus more readily supported and accepted (Acemoglu and Verdier 2000; Shleifer and Vishny 1993). In country-comparative studies on attitudes towards environmental policy measures, Harring (2014, 2016) concludes that the general public in countries with higher levels of corruption have weaker preferences for economic policy measures as these are perceived as being less efficient (see also Damania 2002; Aghion et al. 2010). Although not entirely conclusive

and worthy of further in-depth scrutiny, these effects of the level of QoG for public policy attitudes should be highly relevant in the environmental domain as most policy specialists agree that market-based interventions, such as carbon taxes, are among the most effective tools for addressing collective environmental problems.

44. We can thus conclude that context most likely influence individuals' policy attitudes, not the least towards carbon taxes. However, due to data limitations, where the most comprehensive cross-national survey data sets cover about 30 to 50 countries, it is hard to disentangle these contextual effects as they are highly correlated and interconnected. For example, countries with high quality institutions oftentimes also experience high levels of economic development and high economic equality. In figure XX.3 below, these different contextual elements are added to the general model of policy acceptance.

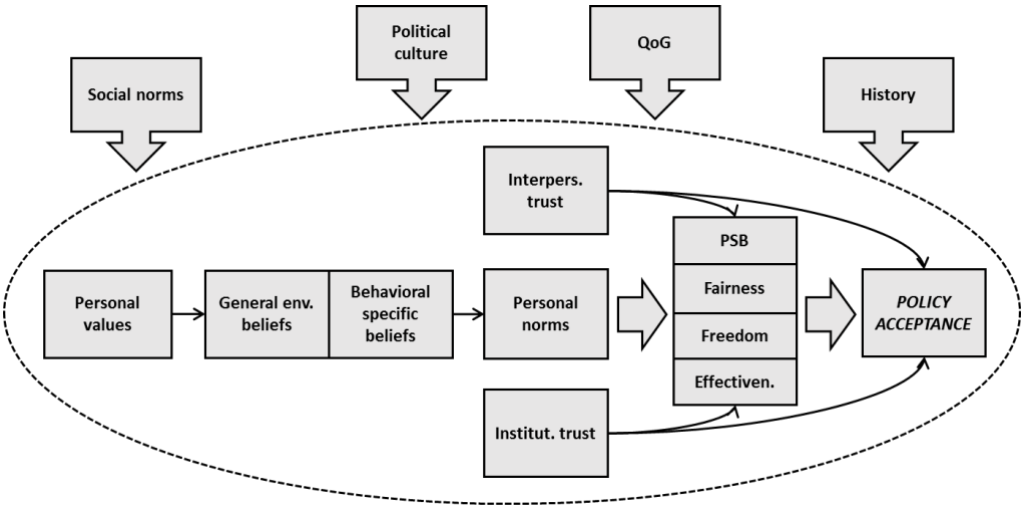

Figure XX.3. Context as interacting with individual-level, interrelational and policy-specific factors (to be further elaborated)

XX.3. Policy Implications

XX.3.1. How to generate public acceptability

45. This chapter applies a feasibility-perspective on the issue of carbon taxation. In short, this means that for any carbon tax to be successfully designed, decided upon and eventually implemented, effectiveness and cost efficiency should be considered *in combination* with public acceptability. Most likely, however, any attempt to balance these three components will entail certain costs. For example,

accounting also for the acceptability of carbon tax can imply refraining from full optimality in terms of the tax's cost-efficiency, or setting the tax-level at a slightly lower level than would be perfectly effective. On the other hand, even if combining all three targets only results in the implementation of a second best policy measure in terms of effectiveness and cost-efficiency, this will nevertheless be significantly better than the risk of a completely failed implementation, due to public protests. In addition to the high indirect societal costs of attempting to forcefully implement an unpopular (yet optimal) tax, introducing policy measures that do not enjoy acceptability among broad layers of the public should also be questioned from a perspective of democratic legitimacy. As such, striving for feasible approaches should be seen as a worthwhile route for decision-makers.

46. Below we first highlight a number of factors, presented in figure XX.3, that policy-makers aiming to introduce a carbon tax should consider in order to increase its public acceptability. Thereafter we provide some examples of how policy-mixes can be developed in order to overcome or negotiate negative public attitudes due to the perceived consequences of the policy measure.

a) The role of political and institutional trust

47. Since government is the key actor when deciding on and implementing policy measures, the characteristics and quality of government, and consequently it's trustworthiness, is crucial for whether or not a proposed carbon tax will be considered acceptable among affected actors or not. This is obviously a challenge for most governments, but will be particularly problematic in countries where overall trust in both government and the governmental administration is low (Harring 2016; Davidovic et al. 2019). Institutional trust is important since it is linked to people's general beliefs about the legitimacy of the political system, i.e. a belief that the existing political institutions and processes are the most appropriate (cf. Lipset 1981). Without political legitimacy, most governmentally initiated policies are difficult to implement and uphold.

48. Unfortunately, there are no known quick fixes or short cuts when it comes to generating or renewing institutional trust. However, trust might be generated more readily concerning a specific issue, for example for a proposed carbon tax. The standard prescription for doing this is to ensure transparency in all steps of the decision-making process and, furthermore, to open up for stakeholder dialogue early on in the process. A large body of social science research suggest that deliberative practices are crucial for generating acceptability for authoritative decisions, in particular when they conflict with stakeholders' short-term self-interests (e.g. Gutmann & Thompson 1996, Chambers 1996, 2003, Howarth and Wilson 2006; Alvarez-Farizo and Hanley 2006, Black 2008, McLaverty and Halpin 2008).

49. Another emerging research field, involving both economists, political scientists and behavioural scientists, conclude that increased transparency can be a way to compensate for low level of trust in a government or a bureaucratic body. For example, through both qualitative studies and various types of survey experiments, it has been shown that openly displaying the use of tax revenues can be a successful way to develop higher levels of acceptability for a carbon tax, also among groups with low levels of political and institutional trust (cf. Bento et al. 2009, Jagers and Hammar 2009). Since attempts to clearly and transparently connect tax revenues with offsets easily can be associated with, or even become, a case of ear-marking, which is typically not allowed in most democratic countries, such approaches should be further investigated especially from a legal point of view.

b) Focus on the revenues

50. As further discussed elsewhere in this handbook, a carbon tax is often a more reliable tax in terms of guaranteed tax revenues, compared to other sources of income for a government. This fact can potentially be utilized and contribute to increased levels of acceptance, especially if it can be convincingly demonstrated what welfare improvements will be targeted with the prospective revenues from the carbon tax (Hammar & Jagers 2009). Furthermore, over time, the costs for climate change *adaptation* are likely to increase in most countries around the world. By linking mitigation policy, e.g. carbon taxes, to the funding of various adaptation policies might be a way to increase acceptability for the former (Ref: recent article in Climate Policy 2020). Simply put, focusing on revenues and adaptation would be away to emphasize local/national returns instead of focusing on mitigation and global costs and benefits.

c) The importance of perceived fairness

51. Previous research has emphasized the importance of *perceived fairness* for policy acceptance (Maestre-Andrés, Drews & van den Bergh, 2019). Although this is discussed more in detail in the forthcoming example section, it is worth some special attention already here. For example, if the general public's expectation is that some groups will benefit more, or suffer less than other groups, this is a hotbed for perceptions of unfairness, which has a strong tendency to results in negative opinions about a carbon tax (and not necessarily only among those who expect to be worse off than others, but also among, e.g., morally righteous winners). Such reasonings imply that the fewer exceptions being associated with the tax (e.g., tax reliefs for certain industries), the more likely that the tax will be accepted on a more general basis. At the same time, people tend to have different fairness perceptions (Povitkina et al 2021). Thus, arguing that certain groups – e.g., those groups who are proportionally more negatively affected by a tax, or who are particularly essential for society – should have certain tax exemptions, could simultaneously be a way to reach *increased* acceptance.

d) Searching for windows of opportunity

52. Previous experience of carbon tax implementation (e.g., in Sweden) suggest that *timing* can be an important factor. If an introduction of a carbon tax is an isolated phenomenon, then much attention will inevitably be paid to this single event, compared to if the carbon tax only constitute one policy event out of many. Thus, if a country is about to reform several components in its tax system, then this can be a window of opportunity.

e) Consider trial periods

53. Research on the acceptance of other environmental policies, e.g., congestion taxes and charges, find that there is typically a larger resistance against the policy *before* implementation. Once the policy has been in place for a period of time, the level of acceptance tends to increase (e.g Schuitema, Steg & Forward, 2010). This again indicate the importance of policy-specific beliefs and especially that *expected* outcomes are a key driver for negative opinions and attitudes, pre-implementation. Once the policy has been in place for a while, several things appear to happen; people get used to the policy, they perceive that it has intended effect and perhaps are not even the expected negative consequences as negative as they were initially expected to be. A way to "await" these gradual positive changes in the opinion, without risking that a carbon tax will fail/be dismissed already in the decision-making phase, can be to utilize a *trial period*. This way, those groups who initially expect the policy to have very negative economic or other consequences, will get a chance to evaluate whether or not these consequences/apprehensions in the end *came* true. However, one should be cautious in the sense that this has been shown to matter for policies where there are clear local benefits – improved air quality and less congestion – while not for policies where there are fewer local benefits, such as for a carbon tax. A similar strategy may be to introduce modest carbon taxes to reach acceptability and then gradually (and transparently) increases the tax rate.

XX.3.2. Examples of potential policy-mixes/packages

54. For some of the factors that the research has identified as drivers behind acceptance or non-acceptance for carbon taxes, there are no simple solutions. For example, the fact that people's core values affect their propensity to accept a carbon tax does not take policy-makers far in terms of policy design since (a) core values are very difficult to change and (b) it is difficult to design a tax that is sensitive to, or regard the great variation in core values that people can have, and apparently do have. In that respect, a factor such as *personal norms* is probably less challenging. Not because the tax can be designed to match with these norms but rather because such norms *can* be changed. Two important

channels for such norm changes are education and media. Thus, through the national curricula for education, a longer set target can be to educate students that environmental policies in general are relevant for sustainable development and also that a carbon tax is a desirable policy goal. However, we do not aim at discussing such grander political endeavors here, and will instead concentrate on the factors more directly affecting public acceptance, namely *policy-specific beliefs* (PSB).

55. As was established in the previous section, there are mainly four PSB factors that have been identified as major drivers of (non)acceptance: Personal outcome expectancy, freedom, fairness and effectiveness.[2] Proceeding from these findings, it can be asked: *Would it be possible to reduce or increase the impact of various PSBs on acceptance for a carbon tax, by combining the tax with additional policy measures?* It should be said, upfront, that the current empirically based research on policy mixing is still rather scant. Thus, the following exercise should primarily be seen as food for thought for policy makers when designing policy packages aimed at overcoming challenges constituted by the various PSB factors.

a) (Un)fairness in outcome

56. If conducted pre-studies[3] demonstrate that perceived unfairness in outcome is a crucial reason why actors express disapproval with an intended carbon tax, reducing the potential resistance by combining the tax with compensatory measures should be considered. This can obviously be done in various ways. For example, an already a flat dividend will compensate for perceived "wallet effects", especially among lower-income groups. If this compensation is connected to an annual income tax return, then a flat dividend can even have a certain re-distributional effect, since many citizens with lower incomes may not have access to a car at all, but will – in this example - still benefit from the dividend. An alternative compensation scheme would be to connect the tax revenues to other policy goals, e.g., to materialize the compensation by improving healthcare, education or other policies aimed at increasing the general welfare.[4] Finally, based on previous research, avoiding exceptions is another approach that can lower resistance, since the tax will then "hit" more equally among society.

[2] It is true that all four aspects in a sense can be seen as different expressions of fairness, but here we disregard this and stick to the terminology in the literature.

[3] See further below under "*Measuring acceptance in due time"*

[4] Such connections should not be conflated with "ear-marking", which is typically not compatible with many countries' constitutions.

b) Freedom

57. Introducing a carbon tax is often associated with reduced freedom (e.g., of movement). When the price increases, some people can only afford public transportations or vehicles without combustion engines. For example, one often pronounced argument against the intended increase of the French carbon tax was that it would mainly affect people living in suburbs or in rural areas and since the public transportations are (relatively speaking) poorly developed, such a tax increase would hit disproportionally hard on those who have no alternatives but to drive their car. To avoid such reactions, it would be possible to combine the carbon tax with policies aimed at increasing the availability of public transportations, e.g., by broadening the public transportation system altogether, or at least by improving the public's access to the existing system (for example through the provision of parking space nearby train- or bus stations).

c) Effectiveness

58. As we have seen, a common reason for questioning a carbon tax among the public is to dispute the degree to which it is necessary at all and/or whether it will have intended effect. It is obviously difficult to overcome such arguments only by complementing the tax with some kind of compensation scheme. This challenge has more to do with overcoming people's skepticism. I.e., it has more to do with knowledge, conviction and eventually with experience. For the former two factors, one should not underestimate the importance of both a good rhetoric/pedagogics, as well as to make use of easily accessible scenarios and prognoses in order to convince the public about the benefits and the most likely outcomes of the implemented tax. The pedagogical path can be built upon various lines of reasoning, e.g., either by applying pure cost-efficiency arguments, or more ethical motivations, such as to convincingly argue that it is more *reasonable* that only the actual polluters are paying, rather than society as a whole. The latter will for example most likely be the consequence if a country chose to subsidize biofuels (and where that funding could be spent on general welfare investments instead) or the government decides to invest in public transportations while sustaining unpriced carbon emissions by avoiding the implementation of a carbon tax. As for experience, the use of trial periods might be a way to milder potential resistance (see above). A typical tendency for other policy measures is that here is often a larger resistance against the policy *before* implementation. However, once the policy has been in place for a while, the level of acceptance tends to increase. By adopting a trial period, it would be possible to decrease the initial concerns while at the same time "pick up" the amount of public support gradually being generated after implementation.

d) Personal Outcome Expectancy

59. This factor very much resemblances unfairness in outcomes but is specifically directed towards the consequences for the individual consumer or citizen. Yet, pretty much the same logic can be applied for both, i.e., the tax should either be complemented with a purer form of compensation, such as a dividend or a deduction in the income tax return and/or investments in more general welfare policies such as improved public transportations, educational programs or improvements in the health sector.

XX.3.3. Measuring acceptance in due time

60. Throughout this chapter, it has been emphasized that trying to prognosticate if a prospective carbon tax will be considered acceptable or not, is both difficult and - perhaps first and foremostly - an empirical task. The reviewed literature clearly signals that the acceptance of carbon taxes is determined by numerous factors (though some are considerably more important than others) and also that one can expect variation from one country to another. Thus, there is hardly any panacea or a universal "one-fit-all-solution" to consult or to hope for. For these reasons, it is important to *survey* the opinion in order to establish which are the main objections against such a tax and to do this in order to come up with complementary policies that can help overcome these objections. The previous examples of how to develop policy mixes can hopefully give some inspiration. Furthermore, it is important to do this already at an early stage of the decision-making process.

61. At least three approaches are conceivable. *First*, and also discussed above; policy-makers should open up for dialogue – consultation procedures – which can primarily provide important qualitative input into the designing of the tax. *Second*, through the use of survey instruments, also important quantitative aspects of potential objections of the tax can be discovered (e.g., which factors matter most). *Thirdly*, survey-experimental approaches can be used in order to determine if a certain policy package will/would be more friendly received compared to other policy mixes. The latter approach become more and more common in the research literature and methodological guidance can thus be collected from there (e.g. Fesenfelt et al. 2020).

XX.4. Real world examples

[The Subcommittee requests the view of the Committee on whether to include a section outlining some real-world examples, and in the affirmative case, welcomes inputs from Committee Members].

XX.5. Bibliography

[Under construction]