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Bringing the policy making perspective in: A political science approach to social acceptance

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Abstract

Recent years have seen a growing interest in the concept of social acceptance, especially in the wake of the transition from non-renewable to renewable energy sources. Social acceptance is thereby studied from very different backgrounds and based on distinct conceptualizations. We argue that the reason for the great variety in the use of 'acceptance' is not mainly its interdisciplinary and multidimensionality, but a missing policy making perspective and its insights and knowledge about processes, actors and (in)formal decision-making.

This contribution proposes a framework to refine the concept of social acceptance. Taking into account that the stage and specificity of the policy making process heavily influence the response towards RET and the process triggered, we identify three steps that need to be addressed when defining a research design that includes social acceptance: the object and context under scrutiny, the relevant actors, and the roles they play. Our proposed framework thereby adopts a political science point of view and the main research interest deals with political actors deciding upon and implementing future policies.

Keywords

Social Acceptance, Political Behaviour, Policy Studies, Research Design, Ecological Tax Reform

1. Introduction

Recent years have seen a growing interest in the concept of social acceptance, especially in the wake of the transition from non-renewable to renewable energy sources (Tabi and Wüstenhagen, 2015). At the same time, it has repeatedly been argued that the notion of 'acceptance' is being used inconsistently in the context of renewable energy research (van Rijnsoever et al., 2015). One reason might be that many disciplines such as psychology, geography, economics and political science have been using the concept, meaning that 'acceptance' is studied from very different backgrounds and based on distinct conceptualizations. However, inconsistencies are also related to the fact that the notion of acceptance is used both as reference to a research perspective in renewable energy policy, and as reference to one among various actors' responses towards renewable energy technologies.

In the first and more general sense, Wüstenhagen et al. (2007: 2683) describe the notion 'social acceptance' and its breakdown into three dimensions as "one factor that can potentially be a powerful barrier to the achievement of renewable energy targets". This perspective emphasizes that the successful implementation of, e.g., a technology, has a "social side" (Batel et al. 2013: 1) which has to be considered scientifically but also practically. Hence, the notion 'social acceptance' denotes the *interest in and research area concentrating on* understanding different potential responses to renewable energy policy, while it does not inform us about the actual manifestation of these reactions. This is where the second perspective comes in: In fact, regarding the more specific use of the word 'acceptance', several authors (e.g., Batel et al. 2013; Fast 2013) characterize acceptance *as one among various reactions* towards renewable energy technologies, whereby opposition, preferences, and support are other such reactions.

Both perspectives have their strengths and weaknesses: The first, general perspective, and particularly the three-dimensional approach by Wüstenhagen et al. (2007), effectively guides the

contextualization of (research) questions regarding social acceptance. However, this view is rather general or even unspecific regarding the processes, the actors, and their specific reactions towards renewable energy policy. The second, more actor-centered approach, can in contrast fill this latter gap. Research in this field contributes to a better understanding of these varying actors' reactions as well as the processes behind. An example is Gross' (2007) contribution on how a lack of perceived procedural justice can lead to opposition in communities towards a wind farm. This second perspective so far lacks a specification and theorization of the context in which actors' reactions towards renewable energy policy take place.

This is the starting point of this paper arguing that we need a framework that helps to *structure* these different perspectives on and aspects of social acceptance. We propose that a *policy making perspective* can serve as a foundation of such a framework. Our central argument is twofold:

First, we aim at integrating the strengths of both perspectives to propose a framework which guides researchers to create a precise research design in renewable energy research. We argue that the type of response towards RET under investigation is heavily dependent on what aspect of social acceptance we are looking at. Second, including the policy making perspective allows bringing in important knowledge about processes, actors and (in)formal decision-making. We emphasize that the context in which actors' reactions take place is strongly contingent also on the stage of the decision making process. The latter determines the role political actors play in a specific case under investigation (e.g., being a decision-maker or the target group; having the power to actively support a proposition or only stating preferences while lobbying for them), and thus their potential reactions (Batel et al. 2013).

In the following, we are going to illustrate that adopting this political science perspective can contribute substantially to a better definition, conceptualization, and finally empirical operationalization of the different processes and responses leading to social acceptance. In this vein,

we will present in the third chapter three steps that need to be addressed when defining a research design that includes social acceptance: *the object of interest, the relevant actors, and their roles*.

While our framework integrates a political science approach to develop on the conceptualization of social acceptance and responses towards RET, this does not mean that all research on social acceptance needs to adopt a policy science perspective. Our main claim is that our framework can be applied to many different approaches and thereby helps researchers from different disciplines to specify their view on how a policy is implemented or a target reached. Conversely, it is important to note that previous research on renewable energy policy has actually integrated political (science) aspects. Most importantly, the role of policy design (van Rijnsoever et al. 2015), actor constellations (Kriesi and Jegen 2001), or public attitudes and voting behaviour (Bidwell 2016a, 2016b; Bornstein and Lanz 2008; Stadelmann-Steffen 2011; Thalmann 2004) have been investigated. While this earlier work illustrates that varying actors' reactions are relevant in different political stages of the policy making process and regarding various aspects of the political sphere, we make this more explicit by systematizing the effect of the policy making perspective on social acceptance research in general, and the role actors assume when shaping or implementing policies in particular.

In this vein, the contribution and relevance of our framework is at least twofold. From a *scientific point of view*, our framework – based on the policy making perspective – structures the different existing views on social acceptance in renewable energy policy. Moreover, the framework helps to characterize various responses to RET, which in turn will be associated with varying definitions and research designs. Against this background, our framework augments the clarity and the comparability of results. Moreover, and from a *practical perspective*, a transparent conceptualization, taking into account the stage and specificity of the policy making process, is necessary in order to derive the correct practical implications from scientific research.

Our framework and this paper both focus on *policies*. We thereby adopt a broad understanding of what a policy refers to. In most general terms, a policy stands for decisions and rules by the political system, e.g., in the sense of a broader political program or strategy, but also a policy instrument or measure or a vote on a specific infrastructural project. The perspectives researchers might have on these various understandings of policies furthermore include not only the decisions about a specific policy itself, but could also focus on how a policy is formed, how a policy is implemented, the reaction towards a policy by stakeholders before/after its adoption, and also if the envisaged goals are fulfilled by the chosen solution.

The remainder of this article is structured as follows: The next section provides a literature review about how ‘social acceptance’ and ‘acceptance’ have been defined and conceptualized in previous research. Section 3 then proposes our own framework by identifying three steps for researchers when preparing their research design. Next, to illustrate our arguments, we will use the case of energy policy and the related restructuring of the energy sector towards more renewable energy. Questions related to social acceptance are particularly relevant in the field of renewable energies, which also reflects in the broad application of the concept in this area of study. The article concludes with a summary of the main findings and their implications.

2. Conceptualizing social acceptance – a literature overview

2.1 What social acceptance is about

In their introduction for a special issue on Social Acceptance of Renewable Energy Innovation, Wüstenhagen et al. (2007, 2684ff) propose an interdisciplinary and three-dimensional approach to social acceptance. First, socio-political acceptance is the most general level, referring to how policies and technologies are seen by political stakeholders and the broad public. Second, community acceptance is relevant when trying to build a power plant in a community, where local stakeholders and especially residents are asked not to oppose a certain project. Lastly, market acceptance builds

on the economy, where new technologies have to be introduced by market players on the supply side and used on the demand side (e.g., the diffusion of innovation).

However, while these dimensions mostly guide researchers on the approach of their research and do not constitute fixed categories, research on responses towards RET, based amongst others on perspectives from geography, psychology and political science, have identified other aspects to be considered when researching reactions to RET. Most authors' thereby put an emphasis on factors at the actors' level that may help to achieve consent. Fast (2013), for instance, argues that *geographical concepts* including place, space and landscape should be considered in order to understand actors' responses to alternative energy technologies. Huijts et al. (2012) present a framework emphasizing *psychological factors* that influence how technologies are perceived. Moreover, van Rijnsoever et al. (2015) draw attention to the need of clearly conceptualizing the *roles* individuals can have in the different dimensions of social acceptance. Research on social acceptance, conclusively, can depart from varying starting points and may be based on various perspectives.

Despite this variety of arguments and conceptualizations, some common challenges can be identified. First, one crucial point refers to the question what the notion of 'acceptance' at the actors' level actually refers to. Batel et al. (2013: 2), in this vein, criticize that the notion of 'acceptance' normatively implies a top-down perspective on RET implementation, where actors' rather passive acceptance of a new technology or a project is considered sufficient. Hence, these authors ask for a multilateral and participatory approach to renewable energy technologies and policies, which involves citizens more actively, and eventually may lead to support for these projects. Moreover, a more differentiated wording regarding actors' reactions also prevents researchers from ignoring other types of responses to RET, for example support or uncertainty, resistance, or apathy (ibid.). Batel et al.'s (2013) argument points to the fact that the heterogeneity in how actors' acceptance is conceptualized actually concerns two levels: a) the conceptualization of acceptance either as attitude or behavior and b) what kind of actual (re)action we look at.

When reflecting on the difference between *attitude* and *behavior*, acceptance has been used to describe very different reactions of individuals towards a new technology (Rijnsoever et al. 2015). The relevance of these different responses subsumed under acceptance, for example, stimulates the prominent discussion regarding the value-action gap and the not-in-my-backyard (NIMBY) syndrome. The value-action gap refers to the observation that behavior actually *deviates* from an individual's attitudes (Batel and Devine-Wright, 2015; Bell et al., 2013; Owens and Driffill, 2008; Castro, 2006; Bell et al., 2005; Diekmann and Preisendörfer, 2003; Kollmuss and Agyeman, 2002). With a focus on local projects, according to Wolsink (2000, 50), it has been "one of the most common mistakes in facility siting to take general support for granted and to expect people to welcome developments they claim to support", whereby the oversimplifying explanation is the NIMBY syndrome (see van der Horst, 2007; Wolsink, 2007, 2006, 2000). More recent publications show that these two concepts are not to be intermingled, as general public support is an inapt point of departure when one is interested in the specific reaction of a community towards a siting project. More specifically, van der Horst (2007) and others (Bidwell, 2016a; Batel and Devine-Wright, 2015; Devine-Wright, 2009; Gross, 2007; Möller, 2010) show, that the elements provoking resistance towards a project are not the technology itself (e.g., related uncertainty, or lacking experience) or distance, but rather how the project and process is designed, such as fairness, environmental impact, how people value the land used for siting and the information on the specific project people receive to form their attitudes. One reason for the persistence of NIMBY (as criticized by Wolsink, 2007) is thus the shortcut from public opinion to expected local behavior, i.e., from attitude to behavior.

On the other hand, and beyond the attitude-behavior distinction, many notions have been used to describe actors' reaction to a policy.¹ Besides 'acceptance' itself, 'acceptability', 'support' and

¹ For an example, within the 967 papers citing Wüstenhagen et al. (2007) as of November 2016, a Google Scholar search yields 895 hits which use the word 'acceptance', 850 'support', 480 'preference(s)', 329 'acceptability', and 539 the negative 'opposition', 352 'resistance' and 170 'objection(s)'.

'preference' are often referred to. Huijts et al. (2015, 526), for example, distinguish between attitude as 'acceptability' and behavior as 'acceptance'. Van Rijnsoever et al. (2015) refer to 'preferences', as they ask respondents to choose which energy source should be used in the future Dutch energy system, and thus request a comparative evaluation in the choice tasks. The heterogeneity is not just a matter of wording but makes a substantive difference. Schweizer-Ries et al. (2010, 11), in this context, state that 'acceptance' has been operationalized both as 'no opposition' and 'active endorsement', whereby silent citizens would be counted as accepting in the first case, but not in the second. While one perspective simply asks for passive silence to 'achieve' social acceptance in a community, the other asks for an active reaction. Moreover, as Batel et al. (2013) show, the wording we use in surveys influences what people report: In their study, 16.5 per cent of the participants indicated that they would accept high voltage lines, but not support an according project. For this reason, Batel et al. (2013) emphasize that researchers need to differentiate between the various responses by citizens.

A second, common challenge concerns the question *to what extent social acceptance (both as an outcome and referring to actors' reaction) is necessary*, and, relatedly, whether research on social acceptance should focus on 'non-opposition' or rather aim at a better understanding of public attitudes and responses in a more encompassing manner (Aitken, 2010; Barry and Ellis, 2011; Batel and Devine-Wright, 2016). Batel et al. (2013) clearly propose the latter and argue that policy makers should strive for real 'support' instead of top-down imposed consent. Taking the example of RET and the transition to a low carbon energy system in mind, it can be argued that according policy measures require a certain level of active support not only regarding to the decision making process but most importantly regarding their effective implementation (Batel et al., 2013). Finally, it has been emphasized in this context, that researchers need to consider the normative aspect of social acceptance, i.e., whether social acceptance of a new technology or project is really the desired

outcome. In fact, opposition to specific projects can also arise for good reasons, e.g., because a project or policy is not suitable for a community or simply not elaborated sufficiently (Aitken, 2010).

2.2 *The role of the political elite*

Most research contributions to the success of RET and related infrastructures focus on the public, while research on the political elite as decision-maker or stakeholder is less widespread. However, when adopting a stronger policy perspective, the field of policy studies, which largely focuses on elites in policy processes, seems valuable in order to grasp the design, introduction, effects and impacts of so-called policy outputs. Policy outputs can be conceived as political goals or instruments designed to achieve such goals (Knill and Tosun, 2012; Schubert and Bandelow, 2014). Here, the notion of acceptance is defined as an antecedent condition for success in agenda-setting, policy formulation or implementation (Ingold, 2011; Kriesi and Jegen, 2001). In policy process theories (see Weible and Sabatier, 2014; Kingdon 1984), 'acceptance' is one among different factors impacting policy change. Preferences of policy instruments and measures are strongly dependent on the deeper values and beliefs of an actor, which define coalitions in decision-making processes (Ingold, 2011; Sabatier, 1988). Similarly, 'acceptance' also matters in policy design studies (see Howlett, 2011). When evaluating what instruments best meet predefined policy goals or targets, traditional policy choice theories focus on instrument categories (see Hood and Margetts, 2007; Vedung, 1998) and on the different groups of actors that benefit from an instrument or pay for its implementation (Knill and Tosun, 2012).

In order to define which actors are relevant for the decision-making process, Stokman and Zeggelink (1996; see also Stokman and van den Bos, 1992) differentiate between the negotiation stage that is open to a broader set of actors and the voting stage that is only open to formal decision-makers. Similarly, when distinguishing between agenda-setting and political formulation, policies are designed and introduced only during the latter. In this context, two sets of actors seem to be relevant (Wilder, 2015): so-called *advocacy groups* during the agenda-setting process and *policy*

communities, including party officials as well as administrative entities and experts, during policy formulation (Dostal, 2004). Hence, in political elite studies, two types of actors' reactions matter: first the reaction of those actors who have the opportunity to lobby and advocate, and second the reaction of those who additionally have the formal power to decide. The first group and their participation in the process is typically being identified through the decisional approach, the second group through the positional approach and thus through their capability to formally vote. Through the reputational approach further actors that are perceived to be powerful in any of the four stages can be identified (Magill and Clark, 1997; Pappi and Henning, 1998).

3. A policy science framework on social acceptance

The previous chapter illustrates the challenges while conceptualizing a valid research design on social acceptance. In the following, we argue that combining the existing knowledge from these different perspectives on social acceptance and explicitly *including the policy making perspective* helps to address these issues. The added value of a political science stake in social acceptance is the knowledge about *processes, actors* and (in)formal *decision-making*, as in many cases the researched responses are inherently related to political decisions and preferences by citizens, local authorities, or government. Considering what aspect and stage of the policy making process is of interest in their own study, researchers will be able to better clarify their own conceptualizations and definitions of specific responses towards policies. Hence, in this section, we present three steps researchers should consider when researching social acceptance in order to reflect how the policy making process frames what context, who and what reaction is relevant (see Fig. 2).

This framework relies on the basic assumption that researchers start with a specific research interest. Researchers usually want to shed light on a certain object, e.g., they are interested in how a certain policy was shaped, decided or implemented. From a policy making perspective, these varying research objects are not only very different things, but will also trigger quite different

processes of social acceptance. For example, depending on whether one investigates how political actors and stakeholders chose between varying policy proposals at a pre-parliamentary stage, or whether the parliament or even citizens decide on the introduction of a final policy instrument, actors' reactions are quite different. Moreover, these multiple types of responses are related to varying processes of social acceptance.

[Fig. 1 about here]

Step 1. Defining the object of interest

Given a specific research question, researchers need to define the object of interest, and particularly the related *context* under which the success of a policy or technology will be observed. As mentioned above, this context depends on the treated object, on the related policy decision as well as on the timing or maturity of the proposal.

Regarding the first aspect, the three dimensions of social acceptance previously identified by Wüstenhagen et al. (2007; see also Wolsink, 2012, 827 for an adapted version) are relevant. These three dimensions define the type of 'decision' we are interested in. It is important to distinguish whether researchers are interested in the social acceptance of measures for the promotion of renewable energy at the ballot box (socio-political acceptance), the construction of local wind plants in resident specific municipality (community acceptance), or of increased energy costs for consumers (market acceptance). Hence, in order to correctly interpret analytical findings and their implications we have to be aware of this decisional *context*. It is important to note that the three dimensions are in reality typically interrelated, i.e., the successful realization of a local wind park necessities a certain degree of socio-political, community, and market acceptance, although the focus of research might be specifically on the community. Indeed, when focusing on a particular research question, but also due to constraints in research practice, many studies will focus on just one of the three dimensions. In this context, the distinction between the three dimensions can guide

researchers in their focus on *what* is at stake and *whose* response is of interest (Wolsink 2012; Wüstenhagen et al. 2007).²

The context, moreover, is also more specifically related to the characteristics of policy making. In particular, the type of response and the process triggered is contingent on the timing and maturity of a policy proposal. Generally, we distinguish three process stages during which questions of acceptance may be relevant, almost independent of whether a specific policy or a project is under investigation. A first stage refers to the *drafting* of a policy or a project, the second stage concerns the *decision to introduce* a policy or a project, while the third stage is about the *implementation* of a policy or realization of a project. Figure 3 depicts an exemplary process for a policy that moves from drafting to adoption and implementation in the socio-political dimension. Depending on the timing of the decision and thus the maturity of a proposal, varying types of responses and most importantly different actors will be relevant. Each stage may be investigated as a full stand-alone research project. Actually, this is often the case, e.g., different research disciplines in political science are interested in distinct stages of the policy process and thus mostly also different researchers investigate subfields of the development of a policy. Moreover, if the focus is on the implementation stage of a new energy act, for example, the specific focus on how this energy act is translated into subnational policy or local projects will trigger new processes including again stages 1 to 3.

Defining the context of a research interest is thus the first step in order to translate a research question into a research design. It specifies the crucial outcome of interest, i.e., the specific aspect of social acceptance, which then allows in the next steps to identify actors, their roles, and the more specific actors' reactions.

Step 2. Identifying relevant actors

² Exceptions are holistic explorations, such as Sovacool and Ratan (2012), which are interested in how several factors of acceptance are necessary for the overall success of a technology in a country, and therefore will need to consider all dimensions simultaneously.

The second step largely centers on the question of whose' reaction is relevant regarding the object of interest as specified in step 1. In this second step, we move more specifically to the actors' level (see Fig. 1): Given the object and the context, researchers can now identify the actors who are relevant for answering their research question, i.e. whose reactions to a policy should be studied.

Most importantly, the timing and maturity of a policy proposal determines whether just formal decision-makers should be considered for the analysis or whether the group of relevant actors needs to be more comprehensive. Let's take the example of a new policy in the socio-political context: If we are interested in the stage of formal adoption of this policy (i.e., the second stage in Fig. 2), formal decision-makers including executive and legislative branches seem in the core of a researcher's attention. However, if earlier stages of policy making, i.e., when a new policy is drafted, are in the focus of research, a larger set of actors - with more or less direct access to decision makers and the drafting of a policy - needs to be considered (Stokman and Zeggelink, 1996; Magill and Clark, 1975). Also following Knoke et al. (1996; see also Kriesi, 1990), not only formal, but also informal arenas of decision-making or implementation should be taken into consideration when studying policy processes and preferences: Actors participating to hearings, round tables, etc. should hence be at least as much considered as government officials or parliamentarians.

However, it is important to note that the stage alone does not automatically determine the relevant actors. Most obviously, relevant actors may vary contingent on the object under scrutiny (e.g., the policy area or the characteristics of a policy), but it may also depend on institutional factors. For instance, changes in a policy are not necessarily restricted to the political elite. Through direct democratic measures, for example, citizens, and thus individuals, can either introduce a popular initiative to ask for a change or call for a referendum on new legislation by parliament (Linder, 2012). At the local level, they moreover might be involved even more strongly in specific projects (Bidwell, 2016b; Gross, 2007; Stadelmann-Steffen and Dermont, 2016). In both cases, citizens lastly

decide in a vote on the proposal at stake. Similarly, and depending on the research question, the set of actors might be extended to target groups, subnational entities in federal settings or private implementing actors in corporatist systems.

This discussion shows that the context defined in Step 1 influences but does not completely determine the relevant actors. This means that researchers, against the background of the context, still need to identify which actors are relevant for their specific research question (see Fig. 2).

Step 3. Determining actors' roles

Following up on the formal and informal actors relevant for a decision, actors' reactions to a policy refer to varying roles an actor assumes (see Fast, 2013). First, Batel et al. (2013) already illustrated the difference between actors' acceptance and support. These authors argue that acceptance is "non-agency, the reaction to something which is proposed externally", while support is more "action-oriented". While in their approach it is not clear how exactly to define the threshold between "non-agency" and "action-oriented", based on a political science perspective we suggest an institutional argument. We argue that dependent on the research question we should focus on the specific response that is at a specific stage of the process *politically necessary for successful implementation*. Using an institutional criterion allows defining the relevant response in a given research project without getting involved into a more normative discussion about what is the desirable reaction.

At least three different actors' responses or roles may be investigated: *preferences* in a stage where a solution is searched and various options are available for the actors, *support* in a stage where a final solution shall be adopted, and finally *acceptance* referring to tolerance towards or compliance with a policy (see Fig. 2).

Support comes closest to the *de facto* decision or vote, i.e., if an actor disposes institutionalized power or competences to decide or vote (Stokman and Zeggelink, 1996), as typically veto players would

(Tsebelis, 2002). Second, *acceptance* is relevant for more informal actors who possess no immediate power to block a decision, but can prevent a successful outcome by refusing cooperation or not complying with a made decision (Schweizer-Ries et al., 2010).. Third, at a process stage where various options are still considered, a notable response are preferences (van Rijnsoever et al., 2015), i.e., which options are preferred in comparative evaluation with others.

This threefold distinction helps us also to describe different roles within the same stage. For example, this can be illustrated regarding the implementation stage (stage 4): a policy on the reduction of energy consumption through efficiency measures is debated and introduced by parliament and later confirmed in a public vote, i.e., a majority of citizens voted in favor of this policy and thus *supported* it with a yes-vote. In the implementation stage now, two research questions involving different citizens' roles may be interesting:

Most typically, researchers will be interested in whether the target groups of these measures, i.e., citizens comply with these new efficiency measures and actually change their behavior in the intended way. Hence, the focus should be on individuals' *acceptance* of these measures in the sense of accommodating oneself to the new rules. Note that this conceptualization also implies that acceptance is not necessarily only passive. For example, acceptance may involve some active behavioral change in order to comply with a new policy (e.g., a policy to reduce energy consumption asks for actual energy saving behavior by the targeted population). But from an institutional point of view, this action is a *reaction* to a policy which does not entail that a policy is rejected or blocked as such, but undercuts the success in implementation (e.g., if energy saving is not accepted, the goals of the policy will not be reached, however the policy is still enacted). From an individual point of view, complying with a new policy may therefore involve some "action-oriented" reactions as described by Batel et al. (2013). However, since these individual reactions are not targeted at the policy itself, but rather at behavioral change in accordance with a new, externally

proposed rule, citizens' accommodation to the new measure in the implementation stage refers to *acceptance* rather than support.

However, another research question could concentrate on how these new national efficiency measures are implemented. Typically, implementation agents such as subnational entities have to transfer the general decision to introduce a new policy into a specific policy output. In this perspective, policy implementation might become policy re-design and the relevant response being very close to the conceptualization as typically outlined in stage 2 (Mayntz, 1979; Goggin, 1990; O'Toole, 2000). Besides public implementation agents and administrative entities, this policy-related aspect of the implementation process might also include citizens' decisions. Typically, citizens and local communities are exposed to the specific implementation of national energy policies via the support of local infrastructural, energy saving, or renewable energy projects (Feenstra et al. 2010; Brunsting et al. 2011). In a federal system like Switzerland, subnational legislation is also subject to direct democracy. In this situation, citizens again need to express *support* for the new policy output also in the implementation stage.

[Fig. 2 about here]

The relevance of this distinct specification of actors' responses to a policy (support, acceptance, preferences) becomes obvious when we think of a valid operationalization. As discussed previously, common challenges in social acceptance research are related to the fact that, for instance, a general public opinion (which can be considered to reflect attitudes rather than intended behavior) is used as a measure of support – often due to the lack of better data. Taking our framework seriously, this would correspond to a miss-specification of the relevant response, since it does not fit the specifications made in steps 1 and 2.

Lastly, responses by actors can be integrated in research designs not only as a dependent but also as an independent variable. If the focus is laid on the drafting of a policy prior to its adoption, i.e.,

taking a policy studies perspective, how actors rate varying proposals is typically one among various explanatory variables for the resulting policy mix.

4. Designing research on social acceptance: two examples in the field of energy policy

After having presented our framework to structure different processes of social acceptance in an empirical research design, we aim at illustrating our framework based on two specific examples. We shall demonstrate that contingent on the precise research interests, different processes and thus actors' reactions are under scrutiny.

In the examples, we take the Swiss energy strategy 2050 as a starting point. In the wake of the nuclear disaster in Fukushima 2011, the Swiss federal government and parliament decided a step-by-step nuclear phasing-out. In order to restructure the energy system, the government drew up the energy strategy 2050 (see Swiss Confederation, 2015). This new strategy contains ambitious targets such as the reduction of electricity and final energy consumption, the increase of the share of renewable energies as well as the reduction of energy-related CO₂-emissions. The transition towards the new energy system consists of two steps: In the first step, the government suggested to increase the promotion of renewable energies. The second step is the transition from a promotion system towards a steering system that primarily relies on climate and electricity taxes. The drafted constitutional article allows the introduction of a tax on fuels and combustibles and a tax on electricity.

In the first example, we focus on the second step of the policy design and thus on the question of how to move from a promotion system to a steering system. Hence, the introduction of an ecological tax reform, i.e., a steering system, is the object of interest, what mostly activates the socio-political dimension of social acceptance (Wüstenhagen et al., 2007). We will illustrate how, given the

specific object of research, the research question and further specification of the context (Fig. 2), will lead researchers to different paths and eventually research designs (see Fig. 3). The first example discusses the drafting of a policy proposal, i.e., from multiple possible solutions, various steering systems and policy elements (stage 1) to the adoption of one particular system including specific instruments or a policy mix (stage 2). Moreover, the example will discuss the challenge of the connection between stage 1 and 2, where initial preferences for various solutions are updated into support or rejection of a final version of a policy.

The second example will discuss the policy goal of extending the production of (new) renewable energy through a decentralized production of electricity, changing the focus to the community perspective, where citizens decide in a participative matter on the siting of RET. In the broader picture of the energy strategy 2050, decentralized production is part of the implementation of the policy (i.e., stage 4 in Fig. 3). However, in the concerned communities discussing RET siting, the specific object under scrutiny is not the energy strategy itself, but hundreds of individual siting projects, whereby each project is in itself a process of social acceptance (and probably the so far most researched aspect of social acceptance of RET).

[Fig. 3 around here]

4.1 Example 1: the focus on the political elite

Research interest: What steering system and related policy mix is adopted by the parliament to reach future goals of renewable energy production?

Step 1: The object of interest

Most policy studies would just be interested in the policy output as introduced by the political elite, and thus the introduced instrument mix to reach the defined policy goal (e.g., a certain percentage of renewable energy production in the overall energy portfolio of the country). However, the

repertoire of available steering systems and related policy instruments to reach this goal is limited only by policymakers' imagination (Eliadis et al., 2005). Therefore, several steering systems and policy instruments that all have the potential to contribute to the same policy goal are played off against each other. More concretely, the different design options that could constitute an ecological tax reform are compared to the status quo and with other steering and maybe even promotion systems that aim at an increase of renewable energies. Such other systems may already be in place, are newly drafted up or might simply be reframed.

In elite studies, the final version of the policy design as typically anchored in laws and legislations, here the steering system probably consisting of multiple policy instruments (policy mix) would be the dependent variable. The response of interest and thus the *elite's policy preferences*, in contrast, would be conceived as independent variable. Social acceptance is thus seen as an antecedent condition but might only be one factor among others for policy success. The elite's preferences for a *policy* or for one element of a policy (e.g. *policy instrument*, tax) are typically located within the frame of *socio-economic acceptance* where a large number of collective, public and private actors are engaged in designing the policy or policy negotiations. As previously discussed, a steering system contains various elements that may be conflictive as a whole, but also individually. Regarding an ecological tax reform, its levy (who has to pay them), its redistribution (who gets their revenue) or both can be controversial (Stavins, 1994; Thalmann, 2004). Researchers might thus be interested in what exact policy mix is preferred by political actors. When the policy goal is strongly related or even dependent upon technological developments (as in the case of renewables), the legitimacy, maturity, and potential (local) success stories might also considerably affect the social acceptance of new steering mechanisms (Dewald and Truffer, 2012; Markard et al., 2016). This shows that even at the elite's level, socio-economic acceptance is intertwined with market, and even community acceptance.

Furthermore, and in the example outlined here, the new steering system is not introduced yet: we are thus considering social acceptance in *stage 1*, where a problem was successfully put on the agenda. Policies are now drafted and different solutions considered. Subsequently, the crucial questions arise what instrument mix passes from stage 1 to stage 2, and what solution finally gets introduced in stage 2. Positive reactions by some or the majority of elite actors (i.e., preferences, or support) might be one explanatory variable for both questions.

Step 2: Relevant actors

The final decision whether the steering system is introduced (stage 2) is in the hands of very few, while the political elite integrated in stage 1 is considered as a larger body including private (interest groups, trade unions) and public (administrative entities) *actors* without the right to vote. Nevertheless, in policy studies, in general, and in our first example, in particular, those actors are expected to have a decisive impact on the drafting of a policy and thus eventually on the final decision through bargaining and resource exchange relations (Henning, 2009) as well as through lobbying and venue shopping (Pralle, 2006).

Step 3: Actors' role(s)

According to the *role those elite actors play*, policy analysts empirically identify organizations based on their decisional, positional, or reputational power in the policy process under study (Knoke et al., 1996; see also Kriesi, 1990 for an earlier study). When following the decisional approach, the process is split in its different steps and arenas such as preliminary research projects, hearings in the parliamentary commissions, consultation procedures, elaboration of proposals by the administrative entities, and finally the parliamentary vote. All actors that appear at least once in the process are retained. This causes a rather long list of actors that either have formal or informal (or both) decisional power. The positional approach only considers actors with formal competences (e.g. the Federal chancellery in Switzerland) that often do not directly appear in the decision-

making process. Through the reputational approach, and expert interviews, actors that are perceived to be powerful are added to the list of elite actors. This combination of three approaches shows that the political elite can be conceived as something broader than just the formal body of decision-makers.

If researchers are interested in stage 1 and the broad organization of actors in a policy process, they might apply the advocacy coalition framework and try to identify coalitions of actors which actively get involved in discussing, framing, or lobbying for and against the design of different steering systems. Typically, such advocacy coalitions coordinate actions based on their deeper ideologies, beliefs and convictions (Henry, 2011; Weible and Sabatier, 2005).

Should researchers be more interested in whether an instrument or the proposed ecological tax reform succeeds and passes from stage 1 (being negotiated) to stage 2 (being adopted) they might focus on single actors such as brokers or entrepreneurs being said to seek policy compromise among competing coalitions (Ingold and Varone, 2012) or to strategically impact decision-making according to their self-interest (Kingdon, 1984; Mintron and Vergari, 1994). Finally, veto-players (Tsebelis, 2002) hold decisional power and can thus block a political process. It is thus crucial to know if a veto-player accepts or rejects the proposed steering system.

Beliefs or institutionalized power (e.g., veto players), but also single actors like brokers or entrepreneurs are known to particularly impact final decisions. All of those elements (that can also be conceived as independent variables here) were (at least partly) identified through the concept and operationalization of responses towards policies, whereby policy instrument preferences are the envisaged type of response. It thus seems important to understand such mechanisms of social acceptance at the level of the political elite on the independent side as well as on the dependent side in the form of a tangible policy output (e.g., steering system).

[Fig. 4 around here]

4.2 Example 2: the focus on the citizens' level

Research interest: What leads to citizens' acceptance and support of RET siting in local contexts?

Step 1: The object of interest

Changing focus from the overall policy of the energy strategy 2050 to the specific decentralized implementation, siting of RET infrastructure in a municipality is the object of interest and citizens are in the center of the process, as they have several possibilities to participate and voice their opinion. In practice, these specific RET siting projects may look quite differently, not only depending on the energy source (e.g., whether a wind park, a large-scale PV site or a small-scale hydropower plant should be sited), but also contingent on cantonal characteristics, i.e., regulatory differences, varying physical conditions and regional cultures. Although part of the implementation of the energy strategy 2050 (i.e., stage 4 in Fig. 3), the research question implies that the focus is much more on the specific siting projects and the related political processes. Hence, these siting projects should be considered as stand-alone policy making processes including the different stages. Consequently Fig. 6 depicts an exemplary process with several stages from project planning to building of a RET.

Based on previous research on the social acceptance of RET siting projects, we will focus on three aspects in this example: the relevance of procedure (Gross, 2007), the difference between support and acceptance as responses to RET (Batel et al., 2013; Walter, 2014), and the expression of these reactions in a municipality setting. As Gross (2007) has shown, the procedure of planning a new RET site is highly relevant for the social acceptance of the project, whereby especially the perception of fairness or justice determines whether citizens will be in favor or against a project. As van der Horst (2007) showed, the process of planning a project likely leads to people deferring from supporters to opponents of projects. Stakeholders involved in the preparation of a project thus need to carefully address the issues of involvement and information of citizens. Depending on the project

and its scale, the community might not only be involved through information and planning, but might actually have the possibility to also vote on the project, as is the case in Switzerland due to the direct-democratic tradition. While the decision might not directly be on siting or not siting a project, related issues such as a change in the zoning scheme, possible communal financial participation in the project or to buy/sell the land used for the project might pose the possibility for the residents to effectively influence the project and voice their concerns (and for developers and stakeholders to incorporate those in the project, see Aitken, 2010; Barry and Ellis, 2010). In contrast to comparable cases in other countries, the residents need not only to tolerate the project, but actually vote in favor of it, which emphasizes the difference of acceptance (being in favor, not opposing a project) and support (actively do something in favor of a project) again (Batel et al., 2013; see also Walter, 2014).

Thirdly, and beyond the specific Swiss case, if a project has passed the political hurdles, the last possibility to prevent a project is through an appeal, i.e., objections on grounds of landscape and environmental protection or deprecation of private property. While the goal may simply be to settle the appeal after compensations, the opposition might also be a matter of principle, i.e., the most negative possible response not only 'not accepting', but actively trying to block a project at all (Schweizer-Ries et al., 2010).

[Fig. 5 around here]

A relevant research question that therefore arises is under which conditions citizens are not only ready to accept a project siting and refrain from an appeal, but actually support it given a likely vote in their municipality. Conceptually, this research interest is in the third and fourth stage as depicted in Fig. 5.

Step 2: Relevant actors

Regarding a specific project at the local level, relevant actors in this context would be the local executive, but also the involved energy company and environmental organizations participating in (and influencing) the process leading to the decision to adopt a project or not (see also Brunsting et al., 2011; Feenstra et al., 2010). While – as the choice of potential sites depends on economic feasibility and readiness to invest – market acceptance may be an important pre-condition for a successful RET siting project, our example focuses on the role of citizens in this process. Residents deciding about an RET siting in a commune or region typically refers to the community dimension by Wüstenhagen et al. (2007) and thus focuses on the stakeholders of a project and the residents which have the possibility to influence the siting through voting or appeals. Given the case of a vote, the central actors are the citizens living in this community, as they will decide whether or not a project will be realized (Walter, 2014).

Step 3: Actors' role(s)

As long as citizens do not have the possibility to vote on a project, the stakeholders need citizens' acceptance (in terms of non-opposition, e.g., no appeals) to realize a project. However, if there is a vote, citizens' role changes; they now need to respond in a more specific and active way, i.e., they need to *support* the new policy in a direct democratic vote (Schweizer-Ries et al., 2010). This means that citizens' role in the decision-making process is now the one of a veto player (Stadelmann-Steffen, 2011).

Citizens' acceptance or support of RET is typically investigated based on survey data. As Batel et al. (2013) have shown, researcher need to specifically ask for support if interested in this more active reaction, as they might else overestimate the chances of a project in a vote. Even more problematic is the question whether a person intends to appeal to a project or not – due to the problem of social desirability and the (simplistic) stigmatization of people blocking a project as NIMBYs or saboteurs,

surveys might largely miss the full potential of people concerned with the project and ready to take further measures to inhibit it.

[Fig. 6 around here]

4.3 Summary

Summarizing the two examples, they illustrate the relevance of our three steps – object of interest, actors, and roles. Most importantly, the two examples make clear that even in two political science contexts research on ‘social acceptance’ can refer to very different things. Most obviously this is due to different objects of interest, which, in the first example, is related to policy design at the elite level and thus socio-political acceptance, while in the second example refers to community acceptance of a new RET project. Emphasizing the different stages of the policy making process, the relevant actors and their roles, reveals that we speak of very different processes of social acceptance. The consequence is two very distinct research designs. While in the first example, the conceptualization of social acceptance refers to elite’s preferences as independent variable, in the second example the citizens’ support is necessary and thereby the dependent variable. Eventually, the two examples demonstrate that our framework can serve as common parenthesis of very different research questions from varying (sub)disciplines in social sciences.

5. Conclusion and Policy Implications

The starting point of this contribution was the observation that recent years have seen an increasing number of studies on ‘acceptance’, using very different definitions and conceptualizations. One of the main problems of this heterogeneity in the use of the concept is that seemingly comparable findings under the notion of ‘acceptance’ are actually not comparable at all, since they are based on divergent definitions, perspectives and processes of social acceptance and varying responses towards RET (Fast, 2013; Batel et al., 2013). The main aim of our paper was therefore to present a

policy science framework to the analysis of social acceptance, in order to emphasize the political process inherent to most decisions on policies and RET infrastructure. Most importantly, we argue that this framework adds to research on social acceptance and this through a unique and threefold contribution. First, we highlight the distinction between ‘social acceptance’ as an important social factor in RET implementation (more in line with Wüstenhagen et al. 2007); and ‘acceptance’ as one of different specific reactions to a policy at the actors’ level during policy making (more in line with e.g., Batel et al. 2013, Fast 2013). By integrating the strength of both perspectives to the research of renewable energy policy, we structure the elaboration of a precise research design.

Second, we bring in a political science perspective: contingent on the research interest and the related political decision to be analyzed, as well as the timing and maturity of the policy proposal, very different processes of social acceptance are triggered, which influence not only the definition of the crucial concepts but also the conclusion to be drawn from the research. We argue that the distinct process of social acceptance and thus actors’ responses that are ‘activated’ depend on specific elements of policymaking such as actors’ roles (e.g., decision-maker; target; sovereign), timing (e.g., proposal; final decision at the ballot), or the institutional room of maneuver given to the actors (e.g., direct democracy; lobbying).

Third, we go beyond traditional political science approaches by combining insights of political behavior with policy studies. This allows generalizing our framework to a broader range of potential actors and the role they can play in policymaking in general, and in social acceptance processes in particular.

Specifically, we propose *three steps* that lead from a research question to a conceptualization of acceptance, namely the specification of the (1) object of interest, (2) the relevant actors, and (3) their roles. Moreover, we were able to show that the differentiations made in the three steps are not only important for conceptual clarity, but also regarding the conclusions and policy implications that can

be drawn from a given study. Furthermore, we outline social acceptance as one, among several, factors that drive policy success or failure. However, our framework does not make any explicit a priori claim about whether social acceptance is a necessary, sufficient, needed or even desired condition for successful policy introduction or implementation. Further, ideally comparative research and empirical evidence is needed in this respect.

While in this contribution we have concentrated on renewable energy technologies, where a large part of social acceptance research has emerged until now, our framework should easily be transferable to other policy fields, for instance to the domain of welfare state reforms where the (socio-political) acceptance of new solutions regarding the socio-demographic changes and the general ageing western welfare states might be of interest. Moreover, our framework may be important for infrastructural projects in general, since questions of how to organize the local decision making process and on how to compensate for local costs will be relevant for projects beyond energy policy.

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References

- Aitken, M. 2010. Why we still don't understand the social aspects of wind power: A critique of key assumptions within the literature. *Energy Policy* 38(4): 1834-41.
- Barry, J., Ellis, G. 2010. Beyond Consensus? Agonism, Republicanism and a Low Carbon Future. In Devine-Wright, P. (Ed.) *Renewable Energy and the Public: From NIMBY to Participation*. London: Earthscan, pp. 29-42.
- Batel, S., Devine-Wright, P. 2016. Energy Colonialism and the Role of the Global in Local Responses to New Energy Infrastructures in the UK: A Critical and Exploratory Empirical Analysis. *Antipode* 49(1) forthcoming.
- Batel, S., Devine-Wright, P. 2015. Towards a better understanding of people's responses to renewable energy technologies: Insights from Social Representations Theory. *Public Understanding of Science* 24(3): 311-25.
- Batel, S., Devine-Wright, P., Tangeland, T., 2013. Social acceptance of low carbon energy and associated infrastructures: A critical discussion. *Energy Policy* 58, 1-5.
- Bell, D., Gray, T., Haggett, C., 2005. The 'Social Gap' in Wind Farm Siting Decisions: Explanations and Policy Responses. *Environ Polit* 14(4), 460-477.
- Bell, D., Gray, T., Haggett, C., Swaffield, J., 2013. Re-visiting the 'social gap': public opinion and relations of power in the local politics of wind energy. *Environ Polit* 22(1), 115-135.
- Bidwell, D. 2016a. The Effects of Information on Public Attitudes Toward Renewable Energy. *Environment and Behavior* 48(6): 743-68.
- Bidwell, D. 2016b. Thinking through participation in renewable energy decisions. *Nature Energy* 1, 16051.
- Bornstein, N., Lanz, B., 2008. Voting on the environment: Price or ideology? Evidence from Swiss referendums. *Ecol Econ* 67(3), 430-440.

- Brunsting, S., De Best-Waldhober, M., Feenstra, C.F.J., Mikunda, T. 2011. Stakeholder participation practices and onshore CCS: Lessons from the Dutch CCS case Barendrecht. *Energy Procedia* 4: 6376-83.
- Castro, P. 2006. Applying Social Psychology to the Study of Environmental Concern and Environmental Worldviews: Contributions from the Social Representations Approach. *J Community Appl Soc Psychol* 16: 247-66.
- Converse, P.E., 2006. The nature of belief systems in mass publics (1964). *Crit Rev* 18, 1-74.
- Devine-Wright, P. 2009. Rethinking NIMBYism: The role of place attachment and place identity in explaining place-protective action. *J. Community. Appl. Soc. Psychol.* 19(6), 426-441.
- Dewald, U., Truffer, B., 2012. The Local Sources of Market Formation: Explaining Regional Growth Differentials in German Photovoltaic Markets. *Eur Plan Stud* 20(3), 397-420.
- Diekmann, A., Preisendörfer, P., 1998. Umweltbewusstsein und Umweltverhalten in Low- und High-Cost-Situationen: Eine empirische Überprüfung der Low-Cost-Hypothese. *Z Soziol* 27(6), 438-453.
- Dostal, J.M., 2004. Campaigning on Expertise: How the OECD framed EU employment and labour market policies – and why success could trigger failure. *J Eur Public Policy* 11(3), 440-460.
- Eliadis, P., Hill, M.M., Howlett, M., 2005. *Designing Government: From Instruments to Governance*. McGill Queen's University Press, Montreal.
- Fast, S., 2013. Social Acceptance of Renewable Energy: Trends, Concepts, and Geographies. *Geography Compass* 7(12), 853-866.
- Feenstra, C.F.J., Mikunda, T., Brunsting, S. 2010. What happened in Barendrecht?! Case study on the planned onshore carbon dioxide storage in Barendrecht, the Netherlands. ECN, Amsterdam, pp.1-44.
- Goggin, M., 1990. *Implementation theory and practice: Toward a third generation*. Chicago: Scott Foresman & Co.

- Gross, C., 2007. Community perspectives of wind energy in Australia: The application of a justice and community fairness framework to increase social acceptance. *Energy Policy* 35(5), 2727-2736.
- Henning, C.H.C.A., 2009. Networks of Power in the CAP System of the EU-15 and Eu-27. *Journal of Public Policy* 29(2), 153-177.
- Henry, A.D., 2011. Ideology, Power and the Structure of Policy Networks. *Policy Stud J* 39(3), 361-383.
- Hood, C.C., Margetts, H.Z., 2007. *The Tools of Government in the Digital Age*. Palgrave Macmillan, Basingstoke.
- Howlett, M., 2011. *Designing Public Policies. Principles and instruments*. Routledge, London and New York.
- Huijts, N.M.A., Molin, E.J.E., Steg, L., 2012. Psychological factors influencing sustainable energy technology acceptance: A review-based comprehensive framework. *Renew Sust Energ Rev* 16(1), 525-531.
- Ingold, K., 2011. Network Structures within Policy Processes: Coalitions, Power, and Brokerage in Swiss Climate Policy. *Policy Stud J* 39(3), 435-459.
- Ingold, K., Varone, F., 2012. Treating Policy Brokers Seriously: Evidence from the Climate Policy. *J Publ Adm Res Theor* 22(2), 319-346.
- Kingdon, J.W., 1984. *Agendas, Alternatives, and Public Policies*, first ed. Pearson, London.
- Knill, C., Tosun, J., 2012. *Public Policy. A new Introduction*. Palgrave McMillan, Basingstoke and New York.
- Knoke, D., Pappi, F.U., Broadbent, J., Tsujinaka, Y., 1996. *Comparing Policy Networks. Labor Politics in the U.S., Germany, and Japan*. Cambridge University Press, Cambridge.
- Kollmuss, A., Agyeman, J., 2002. Mind the Gap and why do people act and environmentally and what are the barriers to and pro-environmental behavior. *Environmental Education Research* 8(3), 239-260.

- Kriesi, H., 1990. Political Power and Decision Making in Switzerland, in Hilowitz, J.E. (Ed.), *Switzerland in Perspective*. Greenwood Press, New York, pp. 35-50.
- Kriesi, H., Jegen, M., 2001. The Swiss energy policy elite: The actor constellation of a policy domain in transition. *Eur J Polit Res* 39, 251-287.
- Linder, W., 2012. *Schweizerische Demokratie. Institutionen, Prozesse, Perspektiven*, third ed. Haupt, Bern.
- Magill, R.S., Clark, T.N., 1975. Community Power and Decision Making: Recent Research and Its Policy Implications. *The Social Science Review* 49(1), 33-45.
- Markard, J., Wirth, S., Truffer, B., 2016. Institutional dynamics and technology legitimacy – A framework and a case study on biogas technology. *Res Policy* 45, 330-344.
- Mayntz, R., 1979. "Public Bureaucracies and policy implementation." *International Social Science Journal* 31(4): 632-645.
- Mintrou, M., Vergari, S., 1996. Advocacy Coalitions, Policy Entrepreneurs, and Policy Change. *Policy Stud J* 24(3), 420-434.
- Möller, B. 2010. "Spatial analyses of emerging and fading wind energy landscapes in Denmark." *Land Use Policy* 27(2): 233-241.
- O'Toole, L., 2000. "Research on policy implementation: Assessment and prospects." *Journal of public administration research and theory* 10(2): 263-288.
- Owens, S., Driffill, L., 2008. "How to change attitudes and behaviours in the context of energy." *Energy Policy* 36:4412-4418.
- Pappi, F.U., Henning, C.H.C.A., 1998. Policy Networks: More than a Metaphor? *J Theor Pol* 10(4), 553-575.
- Pralle, S., 2006. *Branching Out, Digging In: Environmental Advocacy and Agenda Setting*. Georgetown University Press, Washington, D.C.
- Sabatier, P.A., 1988. An Advocacy Coalition Framework of Policy Change and the Role of Policy-Oriented Learning Therein. *Policy Sci* 21(2), 129-168.

- Schubert, K., Bandelow, N.C., 2015. *Lehrbuch der Politikfeldanalyse*. de Gruyter, Oldenbourg.
- Schweizer-Ries, P., Rau, I., Zoellner, J., 2010. *Aktivität und Teilhabe – Akzeptanz erneuerbarer Energien durch Beteiligung steigern*. Otto-von-Guericke-Universität Magdeburg.
- Sovacool, B. K., Ratan, P. L. 2012. Conceptualizing the acceptance of wind and solar electricity. *Renewable and Sustainable Energy Reviews* 16(7): 5268-79.
- Stadelmann-Steffen, I., 2011. Citizens as veto players: Climate change policy and the constraints of direct democracy. *Environ Polit* 20(4), 485-507.
- Stadelmann-Steffen, I., Dermont, C., 2016. How exclusive is assembly democracy? Citizens' assembly and ballot participation compared. *Swiss Polit Sci Rev* 22(1), 95-122.
- Stavins, R., 1994. Correlated Environmental Uncertainty and Policy Instrument Choice. Discussion Paper.
- Stokman, F., Van den Bos, J.M.M., 1992. A Two-Stage Model of Policy Analysis. With an Empirical Test in The U.S. Energy Policy Domain, in Moore, G., Whitt, J.A. (Eds.), *The Political Consequences of Social Networks. Research in Politics and Society. Vol 4*. JAI Press , Greenwich, pp. 219-253.
- Stokman, F., Zeggelink, E.P.H., 1996. Is Politics Power or Policy Oriented? A Comparative Analysis of Dynamic Access Models in Policy Networks. *J Math Sociol* 21(1), 77-111.
- Swiss Confederation, 2015. *Botschaft zum Verfassungsartikel über ein Klima- und Energielenkungssystem*. Bern.
- Tabi, A., Wüstenhagen, R., 2015. Befragung der Anwohner von möglichen Windparks in der Ostschweiz. Institut für Wirtschaft und Ökologie. Universität St. Gallen. <http://bit.ly/1P7AT4m> (accessed 12.02.2016).
- Thalmann, P., 2004. The public acceptance of green taxes: 2 million voters express their opinion. *Public Choice* 119, 179-217.
- Tsebelis, G., 2002. *Veto players: How political institutions work*. Princeton University Press, Princeton.
- van der Horst, D., 2007. NIMBY or not? Exploring the relevance of location and the politics of voiced opinions in renewable energy siting controversies. *Energy Policy* 35(5), 2705-2714.

- van Rijnsoever, F.J., van Mossel, A., Broecks, K.P.F., 2015. Public acceptance of energy technologies: The effects of labeling, time, and heterogeneity in a discrete choice experiment. *Renew Sust Energ Rew* 45, 817-829.
- Vedung, E., 1998. Policy Instruments: Typologies and Theories, in Bemelmans-Videc, M.-L., Rist, R.C., Vedung, E. (Eds.), *Carrots, Sticks and Sermons: Policy Instruments and their Evaluation*. Transaction Publishers, New Brunswick and London, pp. 21-58.
- Walter, G. 2014. Determining the local acceptance of wind energy projects in Switzerland: The importance of general attitudes and project characteristics. *Energy Research & Social Science* 4: 78-88.
- Weible, C., Sabatier, P.A., 2005. Comparing policy networks: Marine protected areas in California. *Policy Stud J* 33(2), 181-204.
- Weible, C., Sabatier, P.A., 2014. *Theories of the Policy Process*, third ed. Westview Press, Boulder.
- Wilder, M., 2015. What Is a Policy Paradigm? Overcoming Epistemological Hurdles in Cross-Disciplinary Conceptual Adaptation, in Hogan, J., Howlett, M. (Eds.), *Policy Paradigms in Theory and Practice. Discourses, Ideas and Anomalies in Public Policy Dynamics*. Palgrave Macmillan, Basingstoke, pp. 19-42.
- Wolsink, M., 2000. Wind power and the NIMBY-myth: institutional capacity and the limited significance of public support. *Renew Energ* 21, 49-64.
- Wolsink, M., 2006. Invalid theory impedes our understanding: a critique on the persistence of the language of NIMBY. *T I Brit Geogr* 31(1), 85-91.
- Wolsink, M., 2007. Planning of renewables schemes: Deliberative and fair decisionmaking on landscape issues instead of reproachful accusations of non-cooperation. *Energy Policy* 35(5), 2692-2704.
- Wolsink, M., 2012. The research agenda on social acceptance of distributed generation in smart grids: Renewable as common pool resources. *Renew Sust Energ Rev* 16(1), 822-835.

Wüstenhagen, R., Wolsink, M., Bürer, M.J., 2007. Social acceptance of renewable energy innovation:
An introduction to the concept. *Energy Policy* 35(5), 2683-2691.

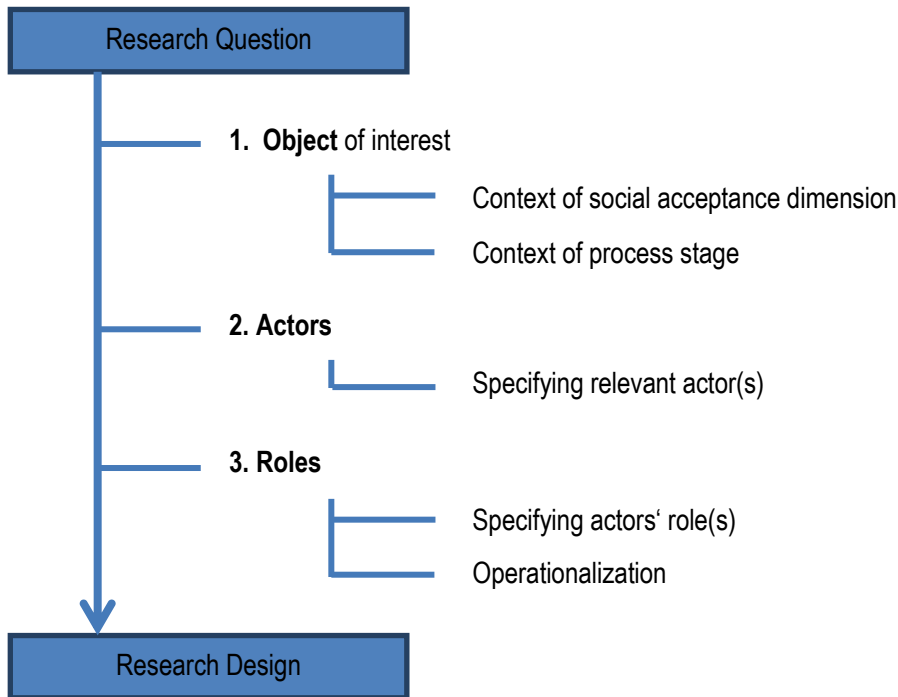


Fig.1: Three steps to define a research design in social acceptance studies.

Stage 1	Stage 2	Stage 3 (optional)	Stage 4
Drafting a policy	Decision on a policy	Popular Vote on a policy	Implementing a policy
Preferences dominate Leads to a <i>policy draft</i> Actors: Political elite Stakeholders Target and advocacy groups	Support dominates Leads to the introduction of a <i>policy</i> Actors: Decision makers Veto Players Policy community	Support dominates Leads to a <i>policy</i> Actors: Citizens	Acceptance to comply Leads to an <i>outcome</i> , e.g., behavioral change Actors: Target groups <hr/> Support to implement Leads to an <i>output</i> e.g., subnational legislation Actors: Implementation agents

Fig 2. Exemplary stages of a policy from drafting to implementation including relevant actors and their roles.

Stage 1	Stage 2	Stage 3 (optional)	Stage 4
Drafting an ecological tax reform	Decision to introduce tax	Popular Vote on tax reform	Implementing tax reform
<p>Preferences matter Leads to a <i>policy draft</i> of the tax reform</p> <p>Actors: Federal Council and Parliament Stakeholders Target and advocacy groups</p>	<p>Support matters Leads to the adoption of the <i>policy solution</i>, i.e., the tax</p> <p>Actors: Parliament</p>	<p>Support matters In case of a successful referendum leads to the <i>adoption</i> of the tax presented by Parliament</p> <p>Actors: Citizens</p>	<p>Acceptance to comply Implementation shall lead to behavioral change, i.e., save energy through higher costs</p> <p>Actors: Electricity consumers</p>

Fig 3. Specific stages of the introduction of an ecological tax reform.

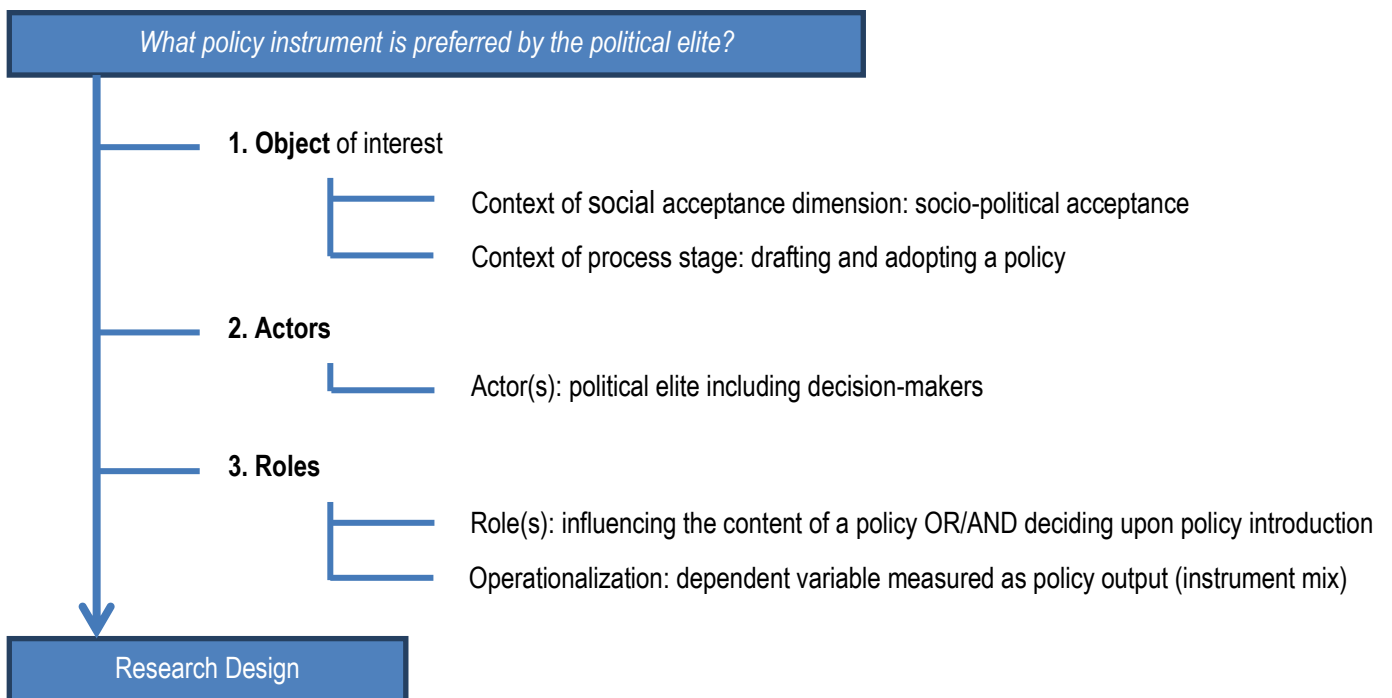


Fig.4: The defining steps to formulate a research design in example 1.

Stage 1	Stage 2	Stage 3 (optional)	Stage 4
Choosing a site for a project	Planning process	Popular Vote on a project	Permit
<p>Not a question of acceptance, rather natural conditions Leads to a <i>potential site</i></p> <p>Actors: Energy Company Regional authority Contractor</p>	<p>Preferences dominate Leads to a <i>project</i></p> <p>Actors: Energy Company Local authorities Contractor Citizens</p>	<p>Support dominates Leads to a <i>decision on a project</i></p> <p>Actors: Citizens</p>	<p>Acceptance of a project, resp. rejection through appeals Leads to an <i>outcome</i>, e.g., site</p> <p>Actors: Local authorities People affected</p>

Fig 5. Exemplary stages of a project from initial project idea to final permits.

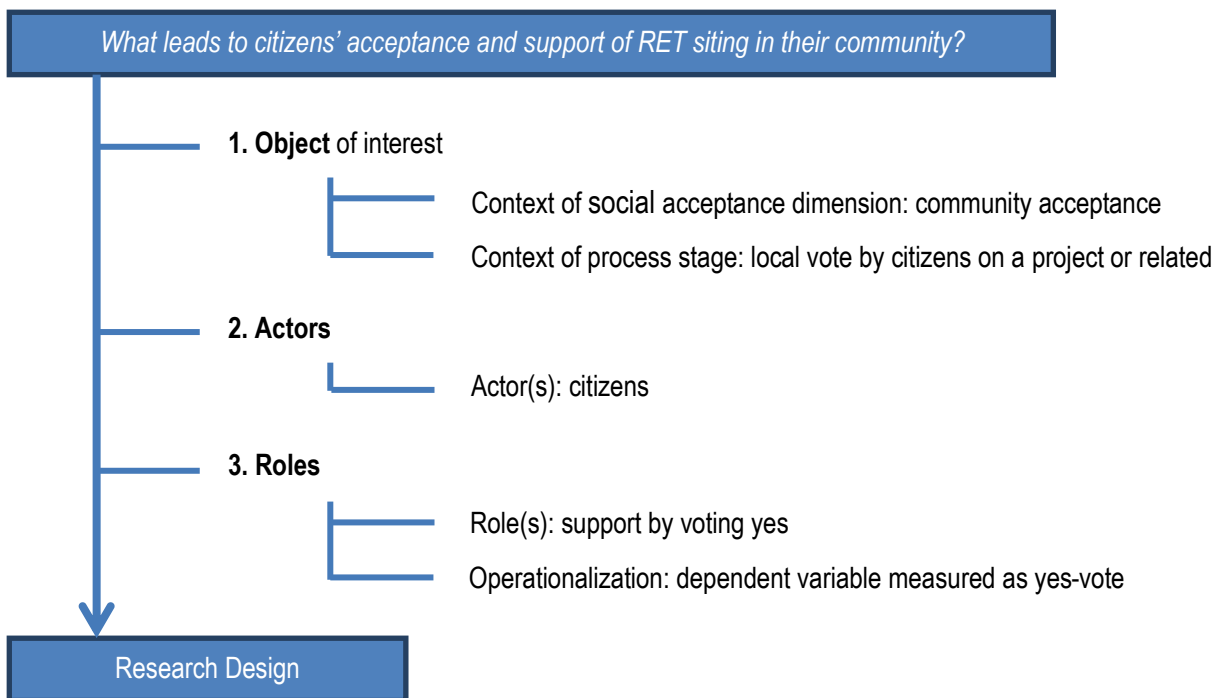


Fig. 6: The defining steps to formulate a research design in example 2.