

TOOL-BOX FOR EFFECTIVE RENEWABLE ENERGY PLANNING

Matthias Buchecker, Sebastian Eiter, Dina Stober, Monika Suškevičs,
Cheryl de Boer & Berthe Jongejan

4.3.1 Introduction

In most European countries, the deployment of renewable energy projects as a cornerstone of climate change policies lags behind the plans related to energy transition (Flacke and de Boer 2017). Sovacool and Ratan (2012) identify nine factors in their international comparison of renewable energy development that foster or block the diffusion of renewable energy: institutional capacity, political commitment, favourable legal or regulatory frameworks, competitive production costs, mechanisms for information and feedback, access to financing, individual or collective ownership, participatory project siting and recognition of externalities, and

positive public image. In these factors the three dimensions of social acceptance as suggested by Wüstenhagen et al. (2007) are represented in equal proportions:

- Socio-political acceptance referring to key stakeholders' acceptance and support of energy policies and technologies
- Market acceptance involving consumers', investors', and energy firms' adoption of renewable energy innovations
- Community acceptance relating to residents' and local authorities' acceptance of specific renewable energy projects and respective siting decisions

Policy-makers and the mainstream of research literature have so far mainly focused on problems of community acceptance of renewable energy, ne-

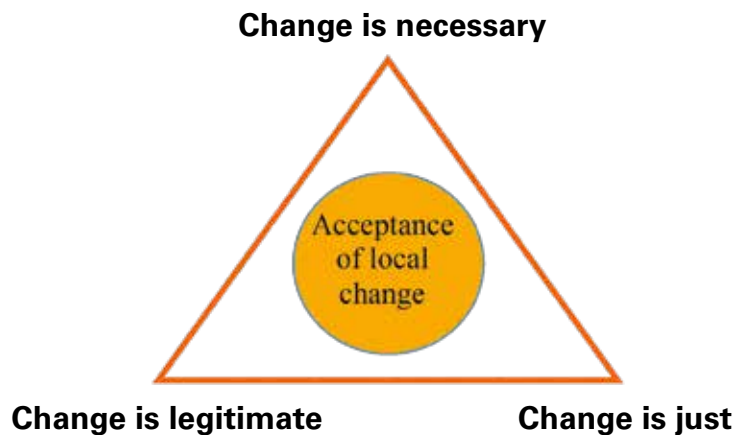


Figure 4.3.1.1
The three pillars of acceptance of a local change, such as an installation for renewable energy production

glecting the fact that the underlying policy goals and investors' objectives have also been contested (Wolsink 2010). Some studies even see the main societal acceptance problem of renewable energy deployment in the lack of trust in the energy sector, companies and regulators (Mumford and Gray 2010), and, more fundamentally, in the lack of institutional capacities for learning, in particular for enhancing collaborative planning (Breukers and Wolsink 2007).

Accordingly, renewable energy projects have to be considered like other non-local infrastructure projects as external interventions in local contexts—often with limited local benefits—that raise mainly three concerns (Figure 4.3.1.1):

- Why is the intervention necessary and why exactly here? This concern refers to consistent national and regional policies and strategies that justify the project.
- How is the project legitimised locally? How is the project communicated and adopted in the local lifeworld (Habermas 1981)? This concern refers to procedural justice.
- Who benefits from the project and who bears the costs, i.e. who is mainly affected by the project? This concern also refers to distributive justice.

The role of national or regional policies and strategies on the acceptance and efficient realisation of renewable energy projects has so far been rarely considered within the research literature (Wolsink et al. 2010). Sovacool and Ratan (2012) have shown that the withdrawal of political commitment for wind energy in Denmark in 2001, including lower feed-

in tariffs, drastically limited further growth of wind power capacity. A comparative study in three European regions on core beliefs related to effective implementation of wind power (Wolsink & Breukers 2010) found that hierarchical and technocratic planning approaches showed the least chance of successful implementations whereas approaches facilitating local ownership, early participation, and local designation of areas for wind power reduced opposition to new wind power projects. Our expert surveys within COST Action RELY (see Chapters 4.1 and 4.2) revealed that a) characteristics of strategic planning differ significantly between European regions and b) fostering participatory wind energy planning increases acceptance related to specific resistance issues.

The role of procedural justice for social acceptance of renewable energy projects is often emphasised (Gross 2007, Haggett 2008, Pasqualetti 2011), but very few studies have considered the respective practice in Europe or the contribution of local participation to successful project implementation (Langer et al. 2017). Recent literature highlights that public involvement in local renewable energy planning in Europe normally takes place at a late stage—in the spatial planning phase or even the permitting phase, and only seldom in the need-determination phase. It is often limited to one-directional information and pursues primarily instrumental goals, such as convincing the public of a project or a site, rather than open discussions about the project design (Polatidis and Harlambopoulos, 2004, Devine-Wright 2011, Höppner et al. 2012, Aitken et al. 2016, Späth et al. 2016). This

approach of ‘decide-announce-defend’ (Bell et al. 2005) can be considered as undemocratic (Simcock 2016). Walker et al. (2010) suspect the avoidance of more substantial and interactive forms of public involvement as a consequence of decision-makers’ conceptions of the public assuming opposition based on selfish ‘not in my backyard (NIMBY)’ motives. This lack of trust in the public might in many cases be self-fulfilling, increasing local opposition—at least in contexts with high expectations in opportunities to participate (Bickerstaff 2012). In fact, more deliberative planning approaches enhance acceptance of renewable energy projects (Breukers and Wolsink 2007a, Devine-Wright 2005). A systematic analysis of the relationship between different modes of participation and acceptance of wind energy projects revealed that citizens’ assessment of wind energy projects is considerably influenced by the degree of participation (Langer et al. 2017). Interestingly, information appeared to have the strongest effect, followed by cooperation, whereas consultation, which represents the highest level of stakeholder involvement in many European countries, showed the lowest effect. In fact, Simcock (2016) found inadequate information and lack of influence on the substance of the project (e.g. technology, site, size) to be key concerns for lacks of perceived procedural justice in England. The role of distributional justice has mainly been addressed in research on community energy projects and financial participation in renewable ener-



gy projects. Local ownership of renewable energy projects may enhance their acceptance (Geissler et al. 2013, Jami and Walsh 2014). Community energy is associated with project schemes that are developed through broadly collective decision processes or ones that distribute their benefits locally and collectively (Walker and Devine-Wright 2008). Financial participation, i.e. providing options for citizens to acquire a share of local energy projects and its benefits—in contrast to community projects—focuses on individual participation. So far, very few studies have provided evidence that community projects or financial participation really enhance public support of renewable energy projects (Devine-Wright 2005, Warren and Mc Fadyen 2010). Other studies, however, have reported of community projects that encountered opposition (Simcock 2014, Walker et al, 2010), and Simcock (2016) revealed in a case study in the UK that a community wind energy initiative was only supported by those citizens who considered the decision process as being impartial and just. Accordingly, a choice experiment in Germany concluded that financial participation alone contributed only marginally to the acceptance of a wind energy project (Langer et al. 2017). Neither solely allowing communities to determine if a wind project proceeds, nor solely options for financial participation are sufficient to secure local support for an energy project. An additional bottom-up integration process into community life is necessary, as a successful

Figure 4.3.1.2
Community workshop in
Stilfs (South Tirol).
(Photo: Matthias
Buchecker)

case study from Denmark suggests (Sperling 2017). From this perspective, the potential financial profit seems to be less important to citizens than the right to have a democratic say in the process (Langer et al. 2017). Comparisons between European countries show that opportunities for financial participation are strongly related to success in the growth of wind power development (Sovacool and Ratan 2012) but nevertheless also suggest, that locally shared profit is also a relevant acceptance factor.

Overall, we conclude that three possibly inter-linked aspects need to be considered or even kept in balance in order to achieve an effective planning of renewable energy deployment:

- 1) national or regional strategic planning,
- 2) local control through involvement, and
- 3) securing of local benefits.

Balancing these aspects requires considering the interconnections between the demand and supply side of renewable energy, as well as integrating national and local levels of planning (Devine-Wright 2011). Furthermore, optimal solutions cannot be generalised, as they depend on the local context in terms of earlier conflicts, vulnerability or discourses (Hostmann et al. 2005, Simcock 2016), especially expressed in the main acceptance issues, and on the wider cultural context, in particular norms of justice (Bickerstaff 2012, Vermeylen and Walker 2011). Before we suggest a tool-kit based on these considerations, we present the basic recommendations of existing tool-boxes.

4.3.2 Literature and Tool-boxes on Effective Participatory Planning

Although the relevance of procedural justice for the support of renewable energy projects is widely acknowledged, there is relatively little internationally acknowledged literature focusing on effective participatory planning of renewable energy projects. Three recent studies focus on effective renewable energy planning from the perspectives of developers and project managers, respectively.

A comprehensive analysis has been elaborated in the EU-Project INSPIRE-Grid focusing on stakeholder participation in power line planning (Battaglini et al. 2012). Based on evaluations of planning

processes in different European contexts, Späth et al. (2014) suggest a tool-box for 'best' planning practices. Key elements suggested as evaluation criteria are

- **Early involvement:** the need for the project should be discussed prior to detailed planning, preferably in the need determination phase.
- **Representation of stakeholder groups:** if possible based on a systematic stakeholder mapping.
- **Task definition:** the expected tasks of the stakeholders should be clearly formulated.
- **Participatory decision-making methods:** the decision mechanisms should be clearly stated (e.g. multi-criteria analysis).
- **Influence on the outcome:** stakeholders should have substantial influence on project design, but also on procedural design.
- **Independence of the key participants:** the organiser, and in particular the moderator should be independent of the project.

Another European study analysed the planning of 27 European renewable energy projects, which were very different in terms of technology and geographical context, with the goal of adapting a tool for managing innovations for acceptance building (Raven et al. 2009). The study identifies challenges in the integration of a project into a specific context and stresses the importance of reflecting, articulating, and negotiating expectations and visions of the planned project. The suggested tool-kit is largely in agreement with the criteria of INSPIRE-Grid, but focuses more specifically on problem structuring (Gregory et al. 2013) and negotiating project variations based on minimised interaction. The evaluation of the approach, however, revealed the key role of the interactive elements.

In accordance with this finding, recent research literature in natural resource management stresses the key role of interactive problem structuring for facilitating social learning and shared solutions (Pahl-Wostl et al. 2007, Mostert et al. 2008). This social learning approach, which has not been considered in the context of renewable energy planning so far, requires a more collaborative and thematically more open approach than ordinary participatory planning.

A third study on renewable energy planning suggests a participatory multi-criteria approach (Polatidis and Harlambopoulos 2004). Based on public consultation a multi-criteria evaluation of project alternatives should be defined. The participatory multi-criteria evaluation will help to achieve

a consensus on the preferred alternative, including a “zero-action alternative’. However, such a highly structured procedure can only be successful if a) the involvement takes place at an early stage and b) the participatory multi-criteria evaluation has a discursive character rather than being a numeric procedure. And of course, even if zero action may be seen as a necessary alternative for fundamental participation, it cannot be a ubiquitous option as RE development has to take place somewhere, when EU and national goals shall be achieved.

Tool-boxes on Participatory (RE) Planning

An inventory among COST RELY experts revealed a considerable number of guidelines and tool-boxes for participatory (RE) planning in Europe that can be grouped in three categories, whether they describe

- generic steps of good planning of renewable energy projects,
- generic steps of good participatory planning, or
- methods of public involvement.

The guidelines and tool-boxes referring to renewable energy mainly focus on wind energy projects. A prominent exception is a guideline *Advocating for Sustainable Energy in Central and Eastern Europe* (Pagan and Vollmer 2017). The guidelines from different countries are characterised by a considerable discrepancy between the standardised (minimum) involvement and a recommended involvement. The standardised procedure normally includes the following steps:

- Early information on the planned project.
- Assessment of the impact of the project by authorities. If the impact is considered substantial, an environmental impact assessment (EIA) and public involvement are required.
- Pre-application public consultation involving key stakeholders or an existing local contact group in order to define the content of the EIA, identify community benefit measures and possibly project alternatives.
- EIA according to guidelines, if required.
- Formal public consultation to submit objections, etc.

Best practice engagement for communities additionally recommend to

- Proactively set out the energy aspirations for the community or region and designate priority areas or no-go zones
- Establish a local contact group or an actor forum

- Conduct open public deliberations on project alternatives and community benefits prior to the submission of a detailed plan.
- Form a community engagement plan

Guidelines of some European regions define further recommended or mandatory measures to reduce conflicts and mitigate local impacts of renewable energy projects:

- In Denmark, wind turbine areas have to be designated in the municipal plan and the use of these areas has to be described in a guideline before projects can be submitted. In Switzerland and some German regions, wind park areas have to be defined in regional strategic plans.
- In Denmark and some regions of Germany, promoters of wind energy projects have to offer local residents options to purchase shares of the wind turbines.
- In Germany and Switzerland, ecological losses induced by renewable energy projects have to be compensated by the promoter, if possible nearby the site.
- In Denmark, the federal state finances within ‘green scheme’ (according to the energy produced) measures to enhance the scenery and recreation opportunities within the site municipalities to enhance the acceptance of wind energy projects.
- In Denmark, the federal state offers local initiatives a guarantee fund in order to more easily obtain commercial loans for financing preliminary investigations. Local initiatives may also apply for a guarantee to take out a loan.
- In Denmark, the promoter of a wind energy project has to pay for any loss of property value.
- In Holland, the department of cultural heritage encourages local governments to utilise the qualities of historical landscape and heritage in the production of sustainable energy.

General guidelines for generic participatory planning stress the reflection of the context and the purpose of participation in a specific project (Hostmann et al., 2005; Höppner et al. 2012), and the importance of the quality of the participatory process. The main quality criteria for a participatory process are

- Clear scope: the purpose and limitation of the process, but also the liability of the outcomes should be clarified at the beginning.

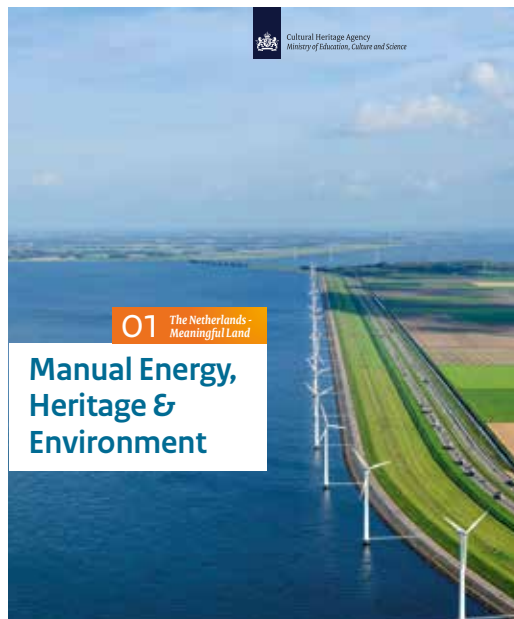


Figure 4.3.3
This is an example of a guideline of the Netherlands for how to develop strategies for integrating sustainable energy production in the landscape (Cultural Heritage Agency 2017)

- Fairness: all participants should have the same options to influence the outcome.
- Transparency: the interests of the participants have to be clarified, and the decision process should be reproducible.
- Mutual learning options: all arguments should be respected and the legitimacy of a diversity of perspectives should be acknowledged.
- Early involvement: a participatory process should already include the definition of the problem and the goal.
- Direct and complete information: comprehensive information from the responsible agencies may raise more conflicts, but residents will feel respected and conflicts based on misunderstandings will be avoided.
- Competence: participants should only participate in discussions on issues about which they are sufficiently informed.
- Inclusion of non-organised interests: efforts should be taken to involve weakly organised individuals.
- Avoidance of losers: discursive procedures are successful if all parties leave the process as winners. Concessions are needed from all sides (Renn et al. 1998, Buchecker et al. 2013).
- Institutional integration: participatory processes should have practical relevance and therefore be integrated into superior decision-making processes.

Tools suggested in Recent Research Projects

- **Integrated regional natural resource management:** participatory processes involving regional actors to discuss visions of the future use of natural resources tend to extend the solution space and make it possible to find shared solutions, also regarding the deployment or extension of renewable energy projects (Buchecker et al. 2013, Gaus et al. 2016). The acceptance of such projects is enhanced through a better mutual understanding among the actors, social learning, and a cross-sectoral approach that allows win-win situations for all actors involved.
- **GIS-based interactive planning tool to deliberate about ideal renewable energy sites:** in a European project, a planning tool was developed and tested encouraging workshop participants to agree on an optimal set of technologies and sites for renewable energy production within a certain region (Flacke and de Boer 2017). This bottom-up process is expected to increase local acceptance of projects. The GIS-based tool also has an awareness-building effect, as it calculates the potential energy production on the site.
- **Scenario workshop to reveal or deliberate about the preferred size or sites of renewable energy plants:** a visualisation tool based on land use and land cover data and scenario techniques (Wang et al. 2016) helps to reveal different stakeholder groups' preferred project designs. Such visualisation tools have also been applied

successfully using low-budget techniques such as real-time-illustrations (Tobias et al. 2015).

- **Concept mapping in an early planning phase to agree on a shared problem understanding:** this tool, which has been developed for process moderation mainly in development contexts, strives for shared understanding among stakeholders about consequences of a project within a local or regional system using a graphical method (Heeb and Hindenlang 2008). The tool helps to bring ideological conflicts down to factual processes and allows for finding shared solutions that might include compensation or improve distributional justice.

4.3.3. Towards a Tool-box

The COST RELY online survey on participatory wind energy planning revealed that strategic and local planning as well as local capacities influence residents' acceptance of projects. Interestingly, however, the relevance and even direction of the influence factors depends on the specific non acceptance problem (Table 4.3.3.1). This means that different measures have to be chosen to increase local acceptance, dependent on local issues. In case of non-acceptance problems related to lack of procedural justice, a stronger involvement of local

stakeholders and more incentives for community initiatives help, in particular if local self-organisation is well developed. In case of non-acceptance problems related to landscape issues, the definition of national or regional priority areas and early communication can reduce resistance, in particular if local social capital is high. Accordingly, the main local acceptance issue and the socio-cultural context matter when choosing an effective tool.

Accordingly, depending on the relevance of non-acceptance issues, experts rated specific measures and tools as particularly effective to achieve acceptance for wind energy projects (Table 4.3.3.2). In the context of resistance to wind energy projects due to lack of trust, deliberation about the size of wind parks, options for individual financial participation, and prospect for the provision of local jobs, as well as the negotiation of wind energy projects within processes of integrated natural resource management on regional level, are considered necessary to promote implementation of projects. In the case of resistance due to landscape issues, however, deliberation on the site and on the benefits of planned projects are considered to be most effective. Compensation measures are only considered to be effective in contexts with non-acceptance due to lack of participation and place image issues, and even counterproductive in contexts with resistance due to landscape or environment issues.

Selecting and applying efficient measures and tools to increase the acceptance of renewable en-

Reasons for non-acceptance

Context situation	Social injustice	Lack of participation	Threat of local image	Landscape encroachment	Environment encroachment	Social conflicts	Exterior intervention	Lack of identification	Lack of trust
Priority areas defined				+		-			
Financial participation possible		-							
Comprehensive strategic planning	+			-	+	+			
Comprehensive communication of strategy	-			+	-				
Timely local communication			+	+					
Comprehensive local communication	+			-	+	+		+	
High deliberation quality				-					
High influence of local actors	+	+	-	-		+	-	-	
High local social capital				-			+		
Good local communication culture		+							
Sufficient financial resources	+			+	+	-			
National incentives for community initiatives		+			-	+			+
High degree of local self-organisation		-							

Table 4.3.3.1
Relationship between planning quality as well as context situation and reasons for non-acceptance based on regression analyses

	Reasons for non acceptance								
	Social injustice	Lack of participation	Threat of local Image	Landscape encroachment	Environmental encroachment	Social conflict	Exterior intervention	Lack of Identification	Lack of trust
Deliberation on the site		x*		x*					
Deliberation on the size						x*			x*
Deliberation on allocating benefits	x*		x(*)	*					
Individual financial participation	x*		x*			x*			x*
Financial participation municipality									
Environmental compensation		x*			x(*)				
Financial compensation			x*	-x*	-x*				
Integrated resource management									x(*)
Transformation in community project	x*	x*	x*						
Justification with local needs							x*		
Justification with providing jobs									x*
Justification with national strategy								x*	

ergy projects is only realistic if these instruments are compatible with the planning culture and planning practice in their respective planning contexts. Our expert survey on wind energy planning suggests that most measures and tools considered to be promising in making renewable energy planning more effective are not compatible with specific planning cultures across parts of Europe (Table 4.3.3.3). Substantial forms of participatory planning such as deliberation on the site or early and transparent communication are considered to be only reconcilable within the planning culture of Eastern Europe, where the practice of involving the public has only been tentatively reintroduced after the socialist period. In Southern Europe, measures of individual financial participation and

community initiatives seem to be problematic in their implementation, whereas in Western Europe measures of national strategic planning seem to have limited value in gaining acceptance. Interestingly, reservations to the widest set of measures were found in Northern Europe, where in particular measures to promote distributional justice are assessed as little compatible with the regional planning culture, possibly because distributional injustice is not considered to be a major societal issue. Unexpectedly, as compared to the high expectations in the literature (Sperling 2017, Simcock 2016) the transition of projects to involve community input is overall rated as the least compatible within the planning cultures across Europe.

Table 4.3.3.2
Relationship between experts' assessed effectiveness of instruments and the relevance of non-acceptance issues based on regression analyses (*: p<0.05; (*): p<0.1)

Tools / Measures	Total	Northern	Western	Central and Eastern	Southern	p-value (ANOVA)
Early and transparent communication of project	3.5	4.18	3.83	2.88	3.67	0.09
Public deliberation on the site	3.27	3.73	3.39	2.88	3.56	
Public deliberation on the size	3.11	3.36	3.44	2.71	3.22	
Public deliberation on site selection criteria	3	3.18	3.17	2.65	3.33	
Public deliberation on allocation of benefits	3.1	2.55	3.5	3	3.22	
Offering opportunities for individual financial participation	3.08	3	3.67	2.63	3.25	0.05
Financial participation in the project by the municipality	3.15	2.9	3.33	3.21	2.88	
Granting environmental compensation measures	3.28	3.4	3.44	3.13	3.25	
Granting financial compensation for public measures in the municipality	3.33	2.9	3.39	3.36	3.63	
Including the project in a integrated natural resource management	3.11	2.9	3.17	3.08	3.38	
Transforming the project into a community project	2.59	2.3	3	2.48	2.38	
Justifying the project with local energy needs	3.23	2.9	3.22	3.48	2.88	
Provision of new jobs	3.3	2.94	3.92	3.92	3.63	0.059
Propagating the project with national strategic energy planning	3.39	3.6	2.94	3.64	3.38	
Justifying the project with inclusive national strategic energy planning	3.35	3.3	3.06	3.63	3.25	

Cultural contexts and planning practices will evolve and develop towards an alignment within Europe, in particular if supported by future EU directives on environmental planning, but the poor overall adoption of compatible planning measures and tools suggest this will take place only very gradually over the next years and maybe decades, as unique cultural patterns are normally rather persistent. Seeing the different effectiveness of planning measures and tools depending on the cultural context, we suggest a tool-kit that recommends

- A best practice general planning design for effective implementation of renewable energy projects and

- Specific measures and tools depending on the acceptance situation and planning culture (Table 4.3.3.4).

Our recommendation of specific planning tools is based on an expert survey focusing only on wind energy. As the acceptance situation and the adoption of planning measures is supposed to mainly depend on the local or national context rather than on types of technology, our recommendations probably also apply to other renewable energy sources.

Table 4.3.3.3

Experts' assessments (n=110) of the compatibility of tools or measures with the planning culture in the context according to European regions (mean values: 1= very little; 5= very high)

Best Practice General Planning Design for Effective Implementation of Renewable Energy Projects:

- Communication of national and regional policies and strategic planning approaches as justification of the project, e.g. priority areas.
- Context analysis: earlier conflicts, state of planning, plans and visions, local and regional energy policy, history of regional energy production (Llewellyn et al. 2017) as a basis for project planning and a communication strategy.
- Early communication about first project ideas (who, what, where) and the envisioned planning procedure including options for public involvement: avoid misunderstandings.
- Identification of relevant regional and local stakeholders.
- Dialogue with regional and local stakeholders on the envisioned project.
- Early stakeholder involvement (interactive workshop) on project impact criteria and preferred alternatives or accompanying measures (e.g. relevant for EIA).
- Public information on detailed project planning using different channels and providing options for feedback.
- Stakeholder involvement in detailed project planning, with options to negotiate amendments locally.
- Information about the decision process, e.g. alterations of the project or accompanying measures.
- Formal approval by the local government or population: local democratic legitimization of the project.

Conclusions

The implementation of RE projects means, very similarly to that of other supra-local infrastructure projects, an intervention into a local context. There

are, however, three challenges that are specific for RE projects: a) the key justification for them is on a global level, to mitigate the climate change, which might not be consistently supported by national policies; b) RE-projects provide not just costs, but also benefits, the distribution of which need to be negotiated; and c) potential sites of these projects are relatively ubiquitous. Planning RE projects therefore need to be more comprehensive in order to tackle these additional challenges. These are normally not considered in the actual RE planning and not taken into account in existing tool-boxes on participatory planning. In recent years, new approaches and tools have been developed in research and practice that help integrate these challenges in planning. Planning, however, must also take the cultural contexts, in which it takes place into account. In these contexts new challenges raise different (acceptance) issues, and the accepted ways to solve them are specific. Planners of RE projects must on the one hand optimise their approaches by learning from best practice in other fields of environmental planning that have a longer history of adaptively improving public participation. On the other hand, they have to assess the situation in the specific planning context to select appropriate additional tools to overcome the specific challenges of integrating RE projects in local contexts. According to our findings, the main contextual aspects they have to consider are the main acceptance concerns towards RE projects and the local planning culture that limits—at least in short term—the acceptance of planning tools. Accordingly, our tool-box for an effective implementation of RE projects suggests a best practice general planning procedure and specific additional planning tools tailored to contextual acceptance situations and regional compatibilities with planning approaches.

	Local involvement difficult (east)	Strategic planning difficult (west)	Individual financial inclusion difficult (east)	Decentralisation difficult (north, south)	Local compensation difficult (north)
Social Injustice	Participation on benefits Individual financial participation	Participation on benefits Individual financial participation Community project	Participation on benefits Overall strategic planning	Participation on benefits Individual financial participation	Individual financial participation Overall strategic planning
Lack of participation	Environmental compensation	Participation on site Community project	Participation on site Environmental compensation	Participation on site Actor involvement	Participation on site Actor involvement
Lack of trust	Integrated resource management Provision of Jobs	Integrated resource management Provision of jobs Participation on size	Integrated resource management Provision of jobs Participation on size	Provision of jobs Participation on size	Integrated resource management Participation on size
Threat of local image	Financial compensation	Community project participation on benefits	Financial compensation Participation on benefits	Financial compensation Participation on benefits	Community project Participation on benefits
Landscape encroachment	Participation on benefits Defining priority areas	Participation on site Early communication	Participation on site Early communication Defining priority areas	Participation on site Early communication Defining priority areas	Participation on site Early communication Defining priority areas
Intervention from outside	Justify with local energy needs (Financial participation municipality)	Justify with local energy needs (Financial participation municipality)	Justify with local energy needs (Financial participation municipality)	Integrated resource management (Individual financial Participation)	Justify with local energy needs (Financial participation municipality)
Environmental encroachment	Environmental compensation Strategic planning (priority areas)	Environmental compensation Integrated resource management	Environmental compensation Strategic planning (priority areas)	Environmental compensation Strategic planning (priority areas)	Environmental compensation Strategic planning (priority areas)
Social conflicts	Individual financial participation Strategic planning Integrated resource management	Individual financial participation Deliberation on size Integrated resource management	Deliberation on size Strategic planning Integrated resource management	Individual financial participation Deliberation on size Strategic planning Integrated resource management	Individual financial participation Deliberation on size Strategic planning
Lack of identification	Justification with national energy strategy Integrated resource management	Early communication Integrated resource management	Justification with national energy strategy Early communication Integrated resource management	Justification with national energy strategy Early communication Integrated resource management	Justification with national energy strategy Early communication

Table 4.3.3.4

Appropriate measures and tools to be included in RE planning depending on the acceptance situation and the compatibility with the planning culture of the context

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