



# Modulating societal acceptance in new energy projects: Towards a toolkit methodology for project managers

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## ABSTRACT

In this paper we discuss the results of the Create Acceptance project. In a comparative analysis of 27 case studies on new energy projects we identify five crucial challenges for project managers of new energy projects related to societal acceptance. We discuss a six-step methodology for facilitating societal acceptance in new and ongoing energy projects. The methodology is tested and refined in five demonstration projects in Europe to test its usability. The experiences with the methodology are positive, but several issues are identified for further improvement.

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## 1. Introduction

Renewable energy and energy efficiency play an important role in Europe in combating climate change, reducing the depletion of fossil fuels and other unsustainable effects of current energy systems. The 2008 'Climate action and renewable energy package' has set ambitious goals: by 2020 overall climate gas emissions should be reduced to at least 20% below 1990 levels; the share of renewables in energy use should increase to 20% by 2020 (6.38% in 2005) [1]. In its recent Energy Efficiency Action Plan, the European Commission targeted a 20% energy reduction through energy efficiency improvements by 2020 [2]. More recently also clean coal and in particular carbon capture and sequestration (CCS) have gained attention as efficient ways to mitigate carbon dioxide emissions [3]. These targets and policy plans and their translation into member states' specific regulations and promotional activities have stimulated a wide variety of what we will call 'new energy' projects throughout the European continent.

Public opinion surveys also show widespread support for renewable energy sources and energy efficiency in Europe. For example, in 2006 member states' citizens expressed their willingness to pay more for renewable energy, ranging from 20–40% of all citizens in South and East Europe to 40–50% in North and West Europe [4]. While these figures are encouraging, new projects often fail due to a lack of societal acceptance, often locally from citizens or consumers, but also from other stakeholders like NGOs or national political and policy actors. This

'social gap' between public opinion surveys and lack of local acceptance of projects is increasingly identified as an important issue, both by academia as well as practitioners [5,6]. Thus, in recent years, there has been increasing attention to the concept of societal acceptance of renewable energy sources such as a recent special issue in Energy Policy [7] and the PV Accept, Accept H2 and Accsept projects.<sup>1</sup>

Nevertheless, there is still a lack of sufficient and integrative knowledge on processes and factors that shape societal acceptance of new energy projects in real, concrete projects. This paper—based on the results of a research project financed by the European Commission on societal acceptance called 'Create Acceptance'<sup>2</sup>—aims to make two contributions. First, many research papers are concerned with identifying underlying factors (e.g., site distance, risk perception, ownership) that constrain or promote societal acceptance. The Create Acceptance project is also concerned with an analysis of determining factors and processes, but goes beyond mere analysis and aims to develop a practically useable methodology targeting project managers to assist them in facilitating societal acceptance for real, concrete projects. Moreover, this methodology is validated by testing it in five ongoing new energy projects, providing us with hands-on experiences with applying the methodology. Second, while many current societal acceptance studies focus on a single technology, the Create Acceptance project has included a wide variety of technologies—enabling us to develop a methodology and identify crucial factors for a wide variety of technologies.

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<sup>1</sup> See <http://www.pvaccept.de/eng/index.htm>; <http://www.accepth2.com>; <http://www.accept.org/>

<sup>2</sup> See <http://www.createacceptance.net>

The first research question in this paper is ‘How does societal acceptance emerge in new energy projects and what are the underlying mechanisms?’ We will adhere to a broad definition of societal acceptance. Societal acceptance, and in particular acceptance of concrete projects, is not just about the acceptance by the general public. In our view it is important to distinguish between the acceptance by different social groups [7,8] and acceptance on different societal levels [9]. New energy technologies have to compete with a well-established system of energy production in terms of technological and economic efficiency, societal issues like job provision, export benefits from fossil fuels, a widely developed infrastructure for production, distribution and use, etc. Consequently, the successful acceptance of new energy projects often requires a widespread support, both locally and nationally. We therefore define societal acceptance as existing when (1) there is support for the technology among the expert community and national and local policy-makers; (2) the general public has an informed and largely positive view of the technology; (3) concrete applications do not meet significant obstacles from local policy-makers, residents, the NGO community or other representatives of social interests and (4) when the opportunity arises, ordinary people are willing and prepared to adopt the applications in their own contexts and to support them with positive actions.<sup>3</sup>

The second research question is about facilitating intervention: ‘How can actors, and in particular managers of new energy projects, pro-actively modulate and improve societal acceptance of their projects?’ We follow Arie Rip and speak of modulation to do justice to the fact that in contemporary societies plurality of perceptions and interests are a rule rather than an exception and there are always ongoing processes and intentions in multiple directions [11,12]. Steering of technology development and implementation can no longer occur in a simplistic top-down way. ‘Modulation’ of those ongoing processes, however, is possible and can be very productive, but requires understanding of the nature and dynamics of those processes, including the interventionist’s own position and role in them.

For a methodology facilitating societal acceptance of new energy projects this implies two things. First, any new energy initiative should at some point be concerned with an explicit act of understanding the most important features of and ongoing processes in its application context. Hoogma [13] for example concludes on the basis of an analysis of electric vehicle projects that a project that starts with a good ‘fit’ with its context is potentially more successful than projects starting with a ‘stretch’.<sup>4</sup> Second, because features and processes can change—either due to wider external events or due to deliberate intervention by the project manager and stakeholder (re)actions—a modulation approach requires ample space for monitoring, learning and reflexivity. Taking these conditions in mind one can prevent a top-down approach to project implementation, while acknowledging that project managers or a project team are often an important (if not the most important) decision maker in a new energy project.

With these conditions in mind and building upon an existing management methodology (SocRobust) and the case study analysis, the Create Acceptance project team has developed a step-by-step methodology for project managers—called ES-

TEEM—to modulate societal acceptance in new energy projects. We discuss this methodology in more detail in the second part of the paper.

The next section briefly introduces the Create Acceptance project and methods used. We continue with discussing our approach to investigating societal acceptance in a variety of new energy projects. We will introduce expectations as an important unit of analysis for investigating and modulating societal acceptance. We then discuss the case studies as well as the main results of our comparative analysis of the case studies. The second question will be addressed in the subsequent section, where we will propose a six-step methodology targeting project managers of new energy projects. We end with experiences with the methodology in practice so far and conclusions.

## 2. Methodological approach

ESTEEM was developed in a 2-year research project ‘Create-Acceptance’ in which different sources of data and working methods were used. We will not discuss the full methodological approach, but present a summary and refer to more detailed descriptions for different parts of the project. The project started with a review of SocRobust—an existing tool for managing breakthrough innovations—for its usability for managing societal acceptance of new energy projects [14]. Some of the Create Acceptance partners had been involved in the development of SocRobust, while others had experience with applying SocRobust in R&D projects, or brought general knowledge on innovation and stakeholder participation processes to the discussion. Sharing practical experience and theoretical knowledge among the project partners was the main working method. This first part of gathering information resulted in a list of potential gaps when using SocRobust for managing societal acceptance in new energy projects [15].

After the theoretical reflection, the project partners collected data on and analysed 27 recent new energy projects in different European regions as well as in South Africa. The data set included a wide variety of technologies and both successful and unsuccessful projects. Societal acceptance was analysed as a process of vision articulation by the project manager and subsequent (successful or unsuccessful) negotiation of stakeholder expectations. This analysis provided five general managerial lessons for ‘good’ project management [16]. We will discuss the results of the case study analysis in more detail below.

The theoretical and practical reflections on SocRobust and the collection and analysis of recent experiences with managing societal acceptance provided the basis for a third phase of ESTEEM development. This phase, in which a draft version of ESTEEM was developed, had very much the character of a continuous brainstorm session. In several project meetings the partners discussed and thought through a draft version of ESTEEM. Working groups discussed face-to-face and through email and phone the design of parts of the process and outcomes were reported back at plenary meetings. Eventually, the lively discussions resulted in a draft six-step methodology for managing societal acceptance issues in new energy projects [17]. We will present the methodology below.

The last part of ESTEEM development consisted of testing and evaluating the draft methodology in five ongoing projects in various European countries: a bio-energy project in Jühnde (Germany), a wind park in Vep (Hungary), the SmartH hydrogen project in Reykjavik (Iceland), the Archimedes solar energy project in Priolo Gargallo (Italy) and a Zero Emission Power Plant (ZEPP) project in Drachten (The Netherlands). Application of the six-step approach in these projects produced a rich set of experiences

<sup>3</sup> The last dimension is introduced to emphasise that many new energy technologies have an important distinctive feature that makes them different from mainstream energy technologies, i.e., they often require a more active role of end-users or are more visible due to a closer application to (or within) urban areas. See also Wüstenhagen et al. [7] and Sauter and Watson [10].

<sup>4</sup> Hoogma found in his cases that many projects with a good fit have improved chances on initial success, while he acknowledges that for truly radical change to occur, projects should have the potential to result in an outcome that stretches unsustainable patterns into more sustainable ones. This specific type of modulation is referred to as a fit-stretch strategy.

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