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ESTEEM: Managing societal acceptance in new energy projects A toolbox method for project managers ☆

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ABSTRACT

There is now a large literature dealing with the policy question of public participation in technical choice and technology assessment (TA). Files such as the mad cow crisis, genetically modified food, and the emerging nanotechnologies have been edified into a public problem, and have given place to a number of experiments and reviews about participatory arrangements. Much less attention has been devoted so far to the application of the TA framework to more local and limited projects–not yet and maybe never reaching the public problem status–and the management of their societal dimensions. Among them, new energy technology represents a very interesting field for investigation: many of the new energy enjoy a global positive public image whereas the local implementation of their implantation often raises societal questions and oppositions. This paper describes an original experiment conducted in the field of new energy technologies during which a participatory technology assessment inspired approach was applied to a number of individual and local projects. A framework methodology called ESTEEM was developed to facilitate such participatory process to take place, and it was tested and evaluated in 5 projects located in 5 different countries over Europe. A detailed discussion of the ESTEEM method and its application to one case study, a Carbon Sequestration project in The Netherlands, is provided. We show that a major question in the application in such participatory framework is to establish a reflective practice of project management based on situated and constructive interactions between project promoters and project stakeholders.

1. Introduction

Preventing and limiting effects of human activity on climate change has increasingly received attention from policy makers, NGO's, industry and citizens. Renewable and low-carbon energy technologies are considered as a major alternative route towards sustainability and–consequently–there are major political and industrial efforts to increase their share in the global energy consumption. With an average European market share of 6.38% in 2005 and global market share of 18% in 2006 (including traditional biomass and large hydropower), renewable technologies like wind turbines, bio-energy technologies and solar systems seem at the verge of breakthrough [1,2]. Current European targets are set to increase the share of renewable energies even further to 20% in 2020 [3]. Moreover, in its recent Energy Efficiency Action Plan the European Commission targeted a 20% energy reduction through energy efficiency improvements by 2020 [4]. Also clean coal and in particular carbon capture and sequestration (CCS) have gained attention as an efficient way to mitigate carbon dioxide emissions [5]. These targets and policy plans and their translation into member states' specific regulations and promotional activities have stimulated a wide variety of so-called "new energy" projects throughout the European continent.

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This overall picture seems very promising, but when considering the local implementation of projects in further details a quite different world turns up. At a local level, new projects face severe backlash due to a lack of societal acceptance, from citizens, neighbors or consumers, but also from other stakeholders like NGOs or national political and policy actors who intervene in project implementation. A recent meta-analysis of 27 new energy projects in Europe has shown that many projects are witnessing societal acceptance problems, ranging from a simple lack of interest to cooperate to explicit acts of severe and emotional resistance [6]. At a global level this local resistance often gave rise to major political and societal debates on the desirability of many new energy technologies. Wind energy is set aside by opponents as a landscape destroying, bird killing, expensive and obsolete technology [7]. More recently bio-energy has become heavily debated because of its potential to destroy ancient forests, its competition with food production and in some cases for its limited potential for carbon dioxide emission reductions. Carbon capture and sequestration is still in an early phase of development, but opponents and advocates are already debating whether or not it is a desirable solution at all. In sum, while policy makers and renewable industries are planning great futures, current reality is that many new energy technologies are facing major (explicit and implicit) acts of resistance.

Acts of resistance are not easy to anticipate nor are they easy to manage. Resistance often comes as a surprise to project managers because issues like societal acceptance can easily stay under the radar of traditional project management tools [8]. When a lack of societal acceptance does become an issue, the manager's defensive reflex is way too often to do it away as irrational, morally bad or at best understandable but futile [9]. This way of managing technological development and implementation has been criticized within the field of Science and Technology Studies [10,11] and in particular (Constructive, Interactive and Participatory) Technology Assessment [12–17]. These scholars have convincingly argued to open up technological development and allow feedback from society into the design process as early as possible. The underlying idea is that allowing feedback enables technology actors (science, industry) to learn about societal wishes and interests as early as possible, when there is still room for design adaptations, while societal actors (policy, users, NGO community) can learn about unknown needs or required regulatory, infrastructural or other systemic changes. Constructive Technology Assessment emerged in the 1980s, but its intellectual legacy is still present in more recently developed management tools.[1] Participatory Technology Assessment (PTA) recently provided further stimulating reflections about citizen participation to public policy debates [18,19]. Starting from the observation of a growing inefficiency and illegitimacy of experts' monopoly on technological choices, interesting investigations were pursued about methodologies of participating from enlarged assemblies of actors: representativeness of participants, modes of interaction, spaces opened for exchanging views [20].

These stimulating approaches have however been confined so far to national policy making debates and problems. One of the limits of such an overlooking approach is that it leaves aside a number of questions and singularities that make sense only at the scale of individual projects and only when project plans are confronted to actual implantation. Questions such as the timing of the project, the geography of its implantation, the local history of the site, the unique sociology of its people and their relationships are convocated by the local implementation of the project and make it the most complex to devise a unique standardized process of project management. All this makes it hard for central policy makers to devise workable rules and generalities about the technology and its diffusion: as the saying goes, the problem with generalities is that they do not apply to particular cases. This paradox makes it necessary that the project managers in addition to their acquired experience and standardized management tools pay attention and adapt their projects to a number of local singularities if they are to be successful. This paper describes an attempt to devise a fine tune method that would help project managers consider and adapt their plans to local singularities. Can we devise a method general enough to allow project managers to deal with relevant local singularities necessary for their success?

The research builds in particular on two previous investigations that have started exploring this ambitious programme: the Protee and the Socrobust experience [21–23]. They established a number of insightful lessons: a) what matters in the management of projects is not so much the local situation itself but the process through which projects managers learn about it and adapt their plans and design to it; and b) involving an external evaluator (PROTEE) or consultant (SOCROBUST) to help project managers think reflectively about that learning is an efficient arrangement. This paper describes a third investigation, made through an EU funded project called Create Acceptance, building on these two previous frameworks and proposing to explore an additional dimension based on a Participatory Technology Assessment approach.[2] In this case, a participatory dimension was added: to sustain the learning process, the consultant was indeed an evaluator (PROTEE) and a consultant (SOCROBUST), but equally a mediator (Create Acceptance) who helps to involve additional local actors in the implementation process. Additionally, this research builds upon insights from Strategic Niche Management and Transition Management that contribute a great deal of project success to articulating expectations and visions [24–27].

The aim of the project, in which ten partner organizations cooperated, was to develop a practical toolbox for project managers to deal with societal acceptance issues as early as possible in the development of a new project.[3] "As early as possible" refers to projects that to some extent have been planned and developed, but are not yet fully implemented. This is a practical pre-condition. Experiences in applying ESTEEM has shown that too early application complicates the process (there is not enough information available for a thorough participatory and vision building process), while too late application leaves little room for adjusting the

[1] Examples are Protee [21], Socrobust [34], Strategic Niche Management [24,25] and Transition Management [26,27]. Although there are many subtle differences between these approaches, they share the common idea of creating early linkages between technology developers and innovators on the one hand and societal actors on the other as a way to improve technological decision making processes and anticipating future problems and opportunities for implementing innovations.

[2] For more information see: http://www.createacceptance.net.

[3] The following partners participated: ECN (The Netherlands), CERIS/CNR (Italy), Ecoinstitute (Spain), IAE (France), INE (Iceland), IEO (Poland), MAKK (Hungary), NCRC (Finland), SURF (UK), ERC (South Africa). See also http://www.createacceptance.net/project-partners/.