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# Identifying the determinants of community acceptance of renewable energy technologies: The case study of a wind energy project from Tunisia



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## ARTICLE INFO

## Article history:

Received 20 January 2015

Received in revised form

10 June 2015

Accepted 18 September 2015

Available online 11 November 2015

## Keywords:

Nimby

Community acceptance

Wind energy

Benefit-sharing

Participation

Case study

## ABSTRACT

By adopting an abductive logic where we iteratively synthesize existing theory and field work, and by apprehending the Sidi Daoud wind park case from a social perspective, a comprehensive model is proposed in terms of input, process and output and hinging around the pivotal role of community acceptance construct which is believed to enrich our understanding of how local residents form their responses to the implantation of a renewable energy project and to account for differences in its outcome, i.e. in terms of success or failure.

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<http://dx.doi.org/10.1016/j.rser.2015.09.037>

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## 1. Introduction

The need to shift from the current fossil-fuel based energy system towards a more environmentally friendly option has become a prerequisite for many countries aiming at fulfilling the global energy demand and addressing the perils of environmental degradation [1]. In essence, the initial surveys on public opinion showed high levels of advocacy for the deployment of renewables, among them is the particular case of wind energy power [2]. However, the implantation of these innovative technologies has been met with significant public resistance creating much uncertainty for their future development [2]: as wind farm facilities are being erected or installed, the lack of social acceptance poses a major barrier to the attainment of our objectives in terms of ensuring a greener electricity production and increased security supply. Additionally, the dissension between the general public support and actual results, for long time explained by and referred to as “Not in my Backyard” oppositional tactic [3], has been criticized from several perspectives. Hence, more emphasis should be placed on the understanding of “what the public thinks”, by overcoming the mere comprehension of public opinion and by setting for a deeper knowledge of the way in which attitudes are formed and shaped [4,5]. An alternative framework is then needed instead of limiting reflection to the negative effect of spatial closeness. In this article, we combine existing literature and field based work to set for a comprehensive model that advances our understanding of how local residents form their responses to the implantation of a wind energy project when located in the vicinity of their homes. By consolidating multiple stockholder viewpoints, we tried to identify and analyze factors that are more likely to lead to a favorable outcome of project successfulness. Understanding how locals form their own perceptions, and what factors are likely to shape these latter, may then enable development companies to more accurately launch renewable energy projects and to match affected community members’ perceptions.

Just like any work addressing the theme of social acceptance, the first section will draw attention to its central facets. From section two onwards, more specificity will be provided and light will be shed on public opinion polls as means for evaluating general public support and reflecting a rough picture of public understanding. Then, we will give critical thoughts to the NIMBY syndrome while enumerating the different individual explanations for opposition to siting proposals.

Section number four will underline the key conceptual insights from public understanding of science (PUS) literature: in the first subsection, all possible justifications for public engagement in the process of decision making will be outlined, followed by defining and stressing the importance of PUS, public, and public opinion notions; after that the logic of evolution of PUS will be clarified by moving from a deficit model of public understanding to more participatory approaches of public engagement. Finally, emphasis will be placed on public understanding of renewable energy (PURE) and ways for achieving it.

## 2. Literature review

### 2.1. Social acceptance of renewable energy

[2] were among the pioneers to claim that social acceptance (SA) has to be conceptualized as a multidimensional concept. So, comprehending the term necessitates its decomposition into 3 levels: the most general one is referred to as socio political acceptance and concerns the capability of formulating efficient policies (of course by all interested parties like policy makers, regulators..) in a way that promotes the two remaining dimensions of market and community acceptance drawn in the bottom of the following triangle:

At the intermediate level, just between policies that were nationally crafted and local communities, social acceptance gives evidence of its second dimension named market acceptance and involves the double role of consumers and investors who are respectively responsible for boosting the adoption, use and production or manufacturing of the new expanding forms of energy.

As opposed to the general level, community acceptance represents the most detailed one, involving the magnitude to which siting decisions are accepted by local residents and authorities, the way in which policymaking is carried out and the manner in which charges and gains are shared.

A community encloses a number of people living in the same space, sharing common ties and socially interacting with each other [6]. The latter conceptualization falls into the category of “territory-based” communities that considers geographical boundaries to be a crucial element of a community. However, with the technological revolution and industrialization, a second kind of “territory-free” communities has emerged [7]. These communities are defined as social entities with no geographic frontiers. In fact, [8] identified 2 compatible, yet different characterizations of community members: first, individuals belonging to the same community share both encouraging and reinforcing interrelationships. Second, they must feel committed to the shared set of rules or standards, values, and meanings they have in common.

In this approach, social scientists become inclined to focus on “communities of interest” as a form of gathering which embraces people by the time they become part of the same mutual identity, start to share the same interests and responsibilities (with or without) belonging to the same geographical scope.

### 2.2. Public acceptance and public opinion polls: identification of a problem

In an attempt to draw a representative image of the public responses to the REs exploitation, public opinion polls were nationally conducted but unfortunately via questions inspired from unreal contexts, and about projects that are specific to certain locations. So instead of reflecting the attitudes of a population as a whole, the polls only reflect broad image of a precise point in time.

In spite of their limitations, public opinion polls are essential to obtaining an idea about what the public thinks and feels

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