Investment decisions in the renewable energy sector: An analysis of non-financial drivers

Andrea Masini a,⁎, Emanuela Menichetti b

a Department of Operations Management and Information Technology, HEC Paris, 1 Rue de la Libération 78351, Jouy-en-Josas, France
b Observatoire Méditerranéen de l’Energie, 105, rue des Trois Fontanot 92000, Nanterre, France

Article history:
Received 1 April 2011
Received in revised form 21 June 2012
Accepted 12 August 2012
Available online 30 August 2012

Notwithstanding their many environmental, economic and social advantages, renewable energy technologies (RE) account for a small fraction of the world’s primary energy supply. One possible cause for this limited diffusion is that private investments in the RE sector, although potentially appealing, remain insufficient. The lack of adequate financing is also a clear indication that our understanding of the process by which investors fund RE ventures is still incomplete. This paper aims to fill in this gap and to shed new light on RE investment decisions. Building upon behavioral finance and institutional theory, we posit that, in addition to a rational evaluation of the economics of the investment opportunities, various non-financial factors affect the decision to invest in renewables. We analyze the investment decisions of a large sample of investors, with the objective to identify the main determinants of their choices. Our results shed new light on the role of institutional and behavioral factors in determining the share of renewable energy technologies in energy portfolios, and have important implications for both investors and policy makers: they suggest that RE technologies still suffer from a series of biased perceptions and preconceptions that favor status quo energy production models over innovative alternatives.

© 2012 Elsevier Inc. All rights reserved.

Keywords:
Renewable energies
Behavioral finance
Empirical analysis
Portfolio
Investment diversification
Survey research

1. Introduction

The debate on Renewable Energies (RE) continues to attract a significant amount of attention within the academic, managerial and policy making communities. While some scholars and industry experts remain skeptical about the technical and economic viability of these technologies [1,2], a different view, championed by the IPCC and especially popular in some European countries, considers RE as one of the most effective solutions to curb greenhouse gas emissions [3]. Despite mixed empirical evidence [4,5], RE have been also indicated as a powerful instrument to tackle unemployment and stimulate economic growth [6–8]. The advocates of this view argue that — if the objective of halving CO₂ emissions by 2050 is to be achieved through the diffusion of RE — the contribution of these technologies to primary energy supply must exceed 50% [9,10].

Yet, notwithstanding the public support received in various countries under the form of incentive schemes, taxation or other governmental expenditures, RE technologies only account for a small fraction of the world’s primary energy supply. One reason for this limited diffusion is that, while the transition towards a low-carbon economy requires important investments [11,12], private finance has so far played a relatively marginal role in this industry [13]. Mobilizing private capital to support RE projects is challenging, particularly in the current economic context, as investors are reluctant to allocate resources to new technologies that guarantee uncertain returns in the short term. The majority of high-tech VCs prefer to invest in technologies with low-risk low-return profiles and “seem to be steering clear of risky green investments, suggesting that clean-tech companies for a variety of reasons don’t work” [14; p. 23].
The paper aims to make several contributions. First, by providing a better understanding of the investors’ decision making process, it will help the RE industry attract badly needed capital. Second, it will help policy makers design more effective policy instruments to support the market deployment of RE technologies. Finally, the paper makes a methodological contribution too, as it analyzes a broader set of agents than what usually considered in studies of this nature.

The reminder of the paper is structured as follows: the next section provides an overview of RE investments and it positions our work against extant literature. Section 3 lays out theoretical foundations and it proposes testable hypotheses. Section 4 describes the research design and the empirical methods. Section 5 illustrates the main findings. Finally, Section 6 highlights the main conclusions and discusses implications for theory and practice as well as the limitations of the paper.

---

1 Ironically, even mature RE technologies are not totally risk-free, as demonstrated by the failure of T. Boone Pickens’ 500 MW wind farm or by the wind turbines accidents reported in the press [15].
دریافت فوری
متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات