



# Going beyond best technology and lowest price: on renewable energy investors' preference for service-driven business models

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## ARTICLE INFO

### Article history:

Received 20 November 2009  
Accepted 29 June 2010  
Available online 22 July 2010

### Keywords:

Renewable energy  
Business models  
Investors' preferences

## ABSTRACT

Renewable energy is becoming increasingly important for economies in many countries. But still in an emerging industry, renewable energy requires supportive energy policy helping firms to develop and protect competitive advantages in global competition. As a guideline for designing such policy, we consult well-informed stakeholders within the renewable energy industry: investors. Their preferences serve as explorative indicator for assessing which business models might succeed in competition. To contribute to only limited research on renewable energy investors' preferences, we ask, which business models investment managers for renewable energy prefer to invest in. We report from an explorative study of 380 choices of renewable energy investment managers. Based on the stated preferences, we modelled three generic business models to calculate the share of investors' preferences. We find exiting evidence: a "customer intimacy" business model that proposes best services is much more preferred by investors than business models that propose lowest price or best technology. Policy-makers can use those insights for designing policy that supports service-driven business models for renewable energy with a scope on customer needs rather than technology or price. Additionally, we state important implications for renewable energy entrepreneurs, managers and research.

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## 1. Introduction

Renewable energy is said to have become increasingly important for economics in many countries (UNEP, 2009: 57). For this to work, effective energy policy stimulates public investments (e.g. through feed-in tariffs) and through other initiatives helping to increase the competitiveness of renewable energy companies. For instance, the European Union communicates directives in this regard under "Energy policy for a competitive Europe" and states: "Europe's citizens and companies need a secure supply of energy at affordable prices in order to maintain our standards of living. At the same time, the negative effects of energy use, particularly fossil fuels, on the environment must be reduced. That is why EU policy focuses on creating a competitive internal energy market" ([http://ec.europa.eu/energy/index\\_en.htm](http://ec.europa.eu/energy/index_en.htm)). In this regard, the EU requests actions plans of affiliated governments by mid 2010 covering energy policy to support the renewable energy targets in EU countries (ibid.). Similar action plans exist in other countries (e.g. *Bundesamt für Energie*, 2008). As a guideline for effective content of such action plans and for designing further policy in this regard,

we consult investors as well-informed stakeholders within the renewable energy industry and investigate their preferences. Literature frequently discussed that investor's preferences offer explicit and implicit information for decision-making of various stakeholders (e.g. *Weber-Henschel*, 2002: 98). However to our knowledge, this source of information is applied in the context of energy policy for the first time. Policy-makers can leverage that knowledge as an indicator of which renewable energy firms will be successful in future competition. Further, such an investigation is of interest for entrepreneurs and managers for understanding how to adjust their initiatives with the investment community's requirements and thus increasing the likeliness of fundraising success.

### 1.1. Background and organization of the paper

Investments in renewable energy rose greatly during the last years and market research companies expect such investments to grow further in the future (e.g. *NewEnergyFinance*, 2009). In line with those assumptions, scholars would like to investigate investors' acceptance of renewable energy (*Wüstenhagen et al.*, 2007) and the first research has already started to elaborate on investment choices of investors in the renewable energy sector (*Bürer and Wüstenhagen*, 2009; *Oschlies*, 2007). Based on this

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research, we assume that investors commonly assemble extensive knowledge for their investment decisions and are well informed about the industry structure and predominant competitive forces.

In preliminary explorative research with renewable energy investment practitioners, we learned that investment managers utilize business models as qualitative indicators to evaluate the future potential of a firm to create economic value. Business models in this regard provide a “heuristic logic” towards value creation (Chesbrough and Rosenbloom, 2002). We also know from the literature that business models are important in attracting investors and that poorly developed business models are one of the major reasons why companies fail in raising funds (Shanley, 2004). Thus, we tie in with discussions on business models and ask which business models renewable energy investment managers prefer to invest in. We report from a choice-based conjoint experiment (CBC) with investors (Clark-Murphy and Soutar, 2004; Gustafsson et al., 2007; Louviere et al., 2003; McFadden, 1986; Orme, 2010; Oschlies, 2007; Riquelme and Rickards, 1992; Sammer and Wüstenhagen, 2006; Shepherd and Zacharakis, 1999; Train, 2003). Based on investors’ choices, the conjoint experiment provides the possibility to display the value of different business model components for renewable energy investors.

We intend to contribute in several areas: first, we provide insight on renewable energy investors’ business model preferences. These have implications for energy policy and may serve as indicator for designing effective energy policy that fosters competitiveness of renewable energy firms and contributes to further diffusion of clean energy. Further, entrepreneurs and managers may utilize the results for fundraising, formulating corporate strategies and designing business models. A peripheral contribution is to research on decision-making in finance; our work enhances the concept of business models by contributing explorative evidence on the value of different business model components from an investors’ point of view.

We proceed as follows: in the next section we briefly discuss business model theory. The featured understanding of business models serves as the basis for the experimental design later on. Then, we discuss aspects of our sample to characterize investment managers for renewable energy in general and to better understand whom we asked. In the method section, we elaborate on the choice-based conjoint methodology. We then present our results. Due to a small sample size, we are not able to test a hypothesis, thus we explore renewable energy investment behavior and state propositions. Based on the stated investors’ preference, we model three generic business models and calculate the investors’ share of preference for each of them. We wrap up by drawing conclusions and pointing to implications for energy policy and for renewable energy entrepreneurial and managerial practice and research.

## 2. Theory: business models

Around the time of the dot.com era, the business model concept arose as tool for analysing new business ventures (Chesbrough and Rosenbloom, 2002: 532). A business model describes how to make money out of a technology (or an idea) and can be imagined as “a mediator between a technology and economic value creation” (Chesbrough and Rosenbloom, 2002). Practitioners are using business models especially to visualize and simplify a firm in order to communicate what they think makes that firm successful. Business models in this regard are “stories that explain how enterprises work” (Magretta, 2002: 87).

Two important building blocks of a business model are value proposition to customers and delivery configuration (Chesbrough

and Rosenbloom, 2002; Morris et al., 2005; Wüstenhagen and Boehnke, 2008; Zott and Amit, 2007, 2008). Customers are said to play a central role in business models (Hedman and Kalling, 2003; Morris et al., 2005). Decisions about which customers to serve impact the configuration of the entire firm (Morris et al., 2005). Thus the value proposition to customers is a decisive aspect of each business model. Three generic possibilities are discussed for proposing customer value: first, proposing value by offering profiled products (e.g. exclusive, innovative products or brands). Second, proposing value by offering products at a competitive low price and third, proposing value by offering certain services (Hedman and Kalling, 2003).

Building on the value proposition, in a next step a business model covers aspects of how to fulfil the stated value proposition. Researchers in this context point to different concepts, for example like “value chain” in reference to Porter (Chesbrough and Rosenbloom, 2002; Hedman and Kalling, 2003), “resources” in accordance with the resource-based view (Hedman and Kalling, 2003) or Hamel’s “core competencies” as source of internal advantage (Morris et al., 2005). Especially in the context of change, business model literature also points to the role of “dynamic capabilities” (Chesbrough, 2007; Teece et al., 1997). Finally, aspects of partnership and alliances throughout the supply chain or the idea of “value networks” (Chesbrough and Rosenbloom, 2002) are important for delivery configuration as a business model component.<sup>1</sup>

Business models can be further characterized by their design themes (Zott and Amit, 2008: 3). Research so far considers novelty- and efficiency-centered business model gestalts as performance drivers (Zott and Amit, 2007). Novelty driven business models create value through new products and services: characteristics are for example high investments in R&D or large property of patents and/or copyrights. Furthermore, novelty-centered business models would either create new markets or when acting on existing markets innovate transactions (Zott and Amit, 2007: 23–24). Efficiency-driven business models create value through lowering costs. Thereby, two generic ways of lowering costs apply: general cost reduction capabilities and lowering transaction costs. Examples for business models with general cost reduction capabilities are those that leverage economies of scale, improve processes and constantly seek to reduce cost. Examples for business models that focus on lowering transaction costs improve marketing and sales capabilities, enables direct access to customers, and ensures transparent information flow and simple transactions for and with customers (Zott and Amit, 2007: 185).

Business model analysis has been especially effective in emerging markets. For this reason, it has been introduced to matters of renewable energy (Boehnke, 2007; DISTRES, 2009; Frantzis et al., 2008; Loock, 2010; Schoettl and Lehmann-Ortega, 2010; Wüstenhagen and Boehnke, 2008). For instance, Loock (2010) shows how business models impact financial performance of renewable energy firms. While this is mainly an ex-post study, investigating investors’ preferences for renewable energy promises explorative, though also quantifiable, insights about expectations on future renewable energy firm performance.

<sup>1</sup> According to Zott and Amit business models incorporate “boundary spanning transactions between a focal firm and its ecosystem of partners, customers, and suppliers” Zott and Amit (2008: 19) With such a definition, scholars appreciate an understanding that competitiveness and superior performance today is not alone matter of a focal firm but of the whole network the firm is embedded in (Zott and Amit, 2007, 2008).

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