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Online marketing of green electricity in Germany—A content analysis of providers' websites

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HIGHLIGHTS

- We examine more than 600 product pages of green electricity providers in Germany.
- We analyze providers' product and communication policy.
- Providers aptly address utilitarian and some psychological customer benefits.
- Self-expressive benefits of buying green energy are not yet addressed.
- Visual language and level of detail of information can be improved.

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ABSTRACT

There is an increasing body of research on consumer preferences concerning electricity from renewable resources. The purpose of this study is to analyze how providers' online marketing in one of the most developed markets for green energy can be improved. We conducted a content analysis of nearly 480 providers' websites, examining as many as 620 products. We found that energy providers' communication seems to be in line with academic research on potential customer benefits (utilitarian benefits, "warm glow", nature experience). However, communication could be improved by giving more detailed information on the impact of the consumer's decision, e.g. by giving numbers on CO_2-emissions saved. Moreover, providers could improve the effectiveness of their visual messages by using more pictures related to renewable energy. Further, self-expressive benefits of buying green energy could be created by offering merchandise articles symbolizing the contribution a consumer makes by choosing a green tariff. When comparing purely green energy providers to other providers, we found that the former offer a wider choice as well as more products supporting new renewable installations. Important implications for policy makers aiming to phase out alternative energy subsidies emerge from our findings.

1. Introduction

In the fight against global warming, the use of green energy is an important element. Therefore, numerous governments around the world have set up incentive programs for producers of renewable energy, granting favored access to grids and attractive feed-in tariffs or valuable certificates. In Germany, attractive support schemes have led to a renewable share of more than 20% in total electricity consumption (BMU, 2012a). However, all of these support schemes are temporary by design and are intended to make green energies competitive compared to conventional energy sources without subsidies in the mid and long term.

Therefore, in the end, producers and traders of renewable energies have to convince consumers, whether residential consumers or commercial enterprises, to buy renewable energy: "Green energy's future success depends on effective branding and marketing communications strategies designed to enhance consumers' benefit perception" (Hartmann and Apaolaza-Ibáñez, 2012). This is the classical marketing challenge for any producer of goods or services.

But how important is green electricity to consumers in Germany? 12% of all households in Germany purchased a "green" electricity tariff in 2012, compared to 3% in 2008, and 21% of the households expect the buying of green electricity to become even more important for them (Rückert-John et al., 2013). In 2010, residential consumers bought around 10.3 TWh of green electricity, which equals 7.4% of all electricity consumed by residential consumers in Germany. Moreover, as of 2011 165,000 commercial users had purchased a green electricity product (EnergieVision, 2012). The private and commercial sectors together currently consume about 16 TWh of green electricity. On the other hand, 25% of the total German electricity production in the first half of

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2012, i.e. 68 TWh, stemmed from renewable sources (BdEW, 2012). So, why is consumption in Germany (16 TWh)) so much less than production (68 TWh)??

The answer to this question lies in the German Renewable Energies Act, which allows a feed-in of electricity from renewable resources at guaranteed rates. In fact, the relation between production and consumption of renewable electricity in Germany is rather weak. Due to attractive feed-in tariffs, the vast majority of green electricity produced in Germany is fed into the public grid. On the other hand, a substantial part of green electricity sold to residential customers or institutional buyers in Germany stems from hydropower plants located in other European countries. Selling renewable electricity from Germany to German customers is still rather the exception than the rule. This is a rather unpleasant fact both for policy makers and for marketers. Policy makers must be disappointed to find that more than a decade of fostering renewable energies by legislative means (EEG) has not lead to a significant integration of renewables into the market. And marketers have to realize that they still face a serious challenge in marketing renewable energies.

To assist both policy makers and energy marketers, this paper analyzes the website content of nearly 480 electricity providers to assess current practices in the online marketing of green electricity. The paper is organized as follows: We first briefly review the literature on marketing of green electricity. Then we present our hypotheses based on the literature (Section 3) and our research methodology (Section 4). In Section 5, we present the results of our study. Discussion, conclusion and policy implications follow.

2. Literature review

Two streams of research inform our analysis of green electricity marketing: the general literature on marketing green products and research specifically addressing the marketing of green electricity. What does the research tell us about factors influencing consumers' purchasing behavior and of how consumers receive green marketing communication? What factors can marketers influence?

Fig. 1 outlines salient factors identified as influencing consumers' purchasing behavior, either of green energy or green products in general. The factors are divided into those intrinsic to the consumer so difficult to influence by marketing and those more amenable to marketing influence. While helpful, this division is not rigid since, over the long-term marketers can influence consumers' knowledge, attitudes and other psychographic criteria identified in the literature.

2.1. Factors intrinsic to the consumer

Many researchers have explored the socio-demographic characteristics of and the values and attitudes held by consumers of green energy products socio-demographic characteristics and psychological constructs such as values and attitudes (e.g. Ozaki, 2011; Arkesteijn and Oerlemans, 2005; Yoo and Kwak, 2009; Oliver et al., 2011). Pérez-Plaza and Linares (2008) summarize the research as follows: "It appears that the greater success will be obtained by targeting young-age, highly-educated households with greater concerns for the environment and/or stronger altruistic values." Rommel and Mayerhoff (2009) found that consumers are more willing to consume green electricity if they live in a small household and have positive attitudes towards wind energy. Diaz-Rainey and Ashton (2011) found that potential adopters of green electricity tend to have a higher income than non-adopters, are better informed on energy issues and are concerned about the environment. Ozaki (2011) found strong effects when consumers had researched energy issues themselves.

A central question in this research concerns the willingness of consumers to pay (WTP) more for a green tariff than for a standard product. Important for Germany is the research by Gerpott and Mahmudova (2010), Hasanov (2010). Concerning socio-demographics she associates a high WTP with "… customers who have a low electricity bill relative to their household size, are not single, and are younger than 40 years." (Hasanov, 2010) She further found that positive attitudes toward environmental issues and the current supplier leads to a higher WTP, as does household conservation behaviors, the positive evaluation of renewables by social reference groups and good knowledge of renewable energy sources (Gerpott and Mahmudova, 2010). However, she does not clarify how specific product attributes influence the willingness to pay.

The results concerning social norms are mixed. While Gerpott and Mahmudova (2010) found positive effects of social reference groups, Litvine and Wüstenhagen (2011) found no significant impact of social norms on the intention to buy green energy.

2.2. Factors that can be directly influenced by marketers

Factors inherent in the consumers are not to be neglected by marketers of green energy. They can, for example, use information on age groups inclined to buy green tariffs when choosing pictures or when seeking to educate prospective consumers on renewable energies. But more important are factors that can be influenced directly by product design or marketing communication. However, research on these factors is not nearly as extensive as that reported above. Still, following Hartmann and Apaolaza-Ibáñez (2012), this second group of factors can be divided into (1) utilitarian and (2) psychological benefits (see Fig. 1).

2.2.1. Utilitarian benefits

Utilitarian benefits accrue when consumers perceive that they can bring about positive change by buying green energy products. In most cases, these changes are altruistic (Litvine and Wüstenhagen, 2011), but they can also comprise direct personal benefits. We have divided utilitarian benefits into two categories: factors relating to the goals the consumer pursues in purchasing green energy and factors under "perceived consumer effectiveness" that enhance the consumers' perception that a certain green energy product is effective in this pursuit (see Fig. 1).

2.2.1.1. Final goals

2.2.1.1.1. Environmental protection, especially reduction of CO_2 emissions. Drawing on the research on marketing and demand for green products in general (Gupta and Ogden, 2009; Laroche et al., 2001; Kalafatis et al., 1999) as well as research on sustainability marketing (Bilharz, 2005), we can say that consumers generally buy green products, including green energy, because they are concerned about the environment and strive for its conservation.

2.2.1.1.2. Support of regional production. The work of Menapace et al. (2011) points to the importance of regional origin as a potential differentiator for any commodity. For green electricity products, regional electricity generation clearly has a positive impact on the utilitarian product utility perceived by residential consumers (Burkhalter et al., 2007; Mattes, 2012; Kaenzig et al., 2013).

2.2.1.1.3. Promoting certain types of renewable energy sources. In the US market, Borchers et al. (2007) found that the WTP is influenced by the type of energy source, with solar power preferred over wind power and biomass rated third (Borchers et al., 2007). Rowlands et al. (2002) found similar results in Canada when investigating the relative "greenness" of different energy sources. In Austria, Haller