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# Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern<sup>☆</sup>

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## ABSTRACT

This paper suggests that advertising campaigns directed at increasing consumer demand for green energy should emphasize not only environmental concern and utilitarian benefits, but also psychological brand benefits. The theoretical framework proposes three distinct psychological benefit categories potentially enhancing consumer attitudes toward green energy brands and increasing purchase intentions: warm glow, self-expressive benefits, and nature experiences. A sample of 726 consumers was exposed to experimental advertisements for a fictitious green energy brand. Findings confirm most predicted effects and underline the overall significance of psychological brand benefits. Only self-expressive benefits do neither affect participants' attitudes toward the experimental brand nor their purchase intentions. Nature experience has the strongest influence on brand attitude. Multi-group structural analysis shows that the nature experiences level evoked by the advertisements moderates the effects of the behavioral antecedents studied on brand attitude and purchase intention. The findings provide keys to improving green energy branding and advertising strategy.

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## 1. Introduction

After the 1970s oil crisis, public awareness of energy related issues has attracted the attention of consumer researchers (e.g., McDougall, Claxton, & Ritchie, 1981). Early findings suggest that environmental awareness encourages consumers to decrease their energy consumption (Kasulis, Huettner, & Dikeman, 1981) and to adopt solar energy (Labay & Kinnear, 1981). “Green energy” or “green power” is derived from renewable energy resources, including photovoltaic and thermoelectric solar energy, biomass, geothermal and wind energy. Currently, some consumers pay a premium price for branded green electricity provided by, for example, Green Mountain Energy (U.S.), Ecotricity (U.K.), Lichtblick (Germany), NaturEnergie (Austria), or Iberdrola Energía Verde (Spain).

Higher generation costs and the consequently higher market prices constitute the principal barrier to consumers' adoption of green energy (Salmela & Varho, 2006). Public opinion surveys find that up to 30% of consumers are willing to pay a price premium for green energy (Eurobarometer, 2003, 2005; Zarnikau, 2003). However, to date, green energy brands' market share remains low (Gan, Eskeland, & Kolshus, 2007) and costs 20% more than regular electricity charges discourage most potential consumers (Salmela & Varho, 2006). Green energy's future success depends on effective branding and marketing communications strategies designed to enhance consumers' benefit perception (Roe, Teisl, Levyc, & Russell, 2001; Truffer, Markard, & Wüstenhagen, 2001). While technical characteristics and green electricity labeling deliver utilitarian benefits to consumers, purchasing green energy potentially derives psychological benefits too. This paper analyzes influences of consumers' environmental concern and perception of green energy brands' benefits on attitude toward the brand and purchase intention. The literature review identifies three distinct psychological benefits potentially affecting behavioral intentions: *warm glow* feelings derived from the moral satisfaction of contributing to the common good environment; *self-expressive benefits* from conspicuous environmentally sound consumption; and *nature experiences* evoked by natural brand imagery. The empirical study exposes consumers to experimental advertisements for a fictitious green energy brand measuring utilitarian and psychological benefit perceptions, attitudes toward the brand, and intention to purchase. Structural equation analysis examines the relationships proposed in the theoretical framework.

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## 2. Attitudes toward green energy and the environment

An increasing volume of research addresses cultural, social, and psychological factors in consumers' demand for green electricity (Clark, Kotchen, & Moore, 2003; Vringer, Aalbers, & Blok, 2007). Despite visual impacts of wind turbines (Groothuis, Groothuis, & Whitehead, 2008), attitudes toward green energy are overall favorable globally, contributing to a growth in consumers purchasing premium-priced green electricity (Ek, 2005; Hansla, Gamble, Juliusson, & Gärling, 2008; Salmela & Varho, 2006).

Behavioral effects of a consumer's personality traits and general environmental attitudes suggest that values and environmental concern are principal determinants of environmentally sound consumption (Balderjahn, 1988; Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003). Consumers engage in conservation behavior because they are intrinsically concerned about the environment and society (Bamberg, 2003; Fransson & Gärling, 1999). Researchers use a variety of alternative and complementary measurement scales to assess consumers' concern with environmental issues (e.g., Kinneer, Taylor, & Ahmed, 1974; Synodinos, 1990), including the New Environmental Paradigm (NEP) scale (Dunlap & Van Liere, 1978; Van Liere & Dunlap, 1981). Several studies confirm that consumer's environmental concern influences purchase behavior of environmentally sound products (Balderjahn, 1988; Roberts & Bacon, 1997). Sensitivity to climate-change issues, awareness of clean energy and alternative energy sources, as well as energy conservation constitute explicit dimensions of environmental concern (Zimmer, Stafford, & Stafford, 1994). Research also shows that green energy consumers are more environmentally concerned than the general population (Clark et al., 2003; Ek, 2005; Hansla et al., 2008). Overall, concern for the natural environment plays a significant role in green energy purchase decisions. Applying the theory of reasoned action (Fishbein & Ajzen, 1975) to the case of green energy, attitudes toward renewable energy mediate the effect of environmental concern on purchase intention (Bang, Ellinger, Hadjimarcou, & Traichal, 2000). Hansla et al. (2008) provide evidence of environmental concern's direct and indirect effects on consumers' willingness to purchase green electricity at a premium price.

**H1a.** Environmental concern influences the intention to purchase green-branded energy positively.

**H1b.** Attitude toward the brand partially mediates the effect of environmental concern on purchase intention.

Actual energy consumption patterns often diverge from stated concerns about the environment (Vringer et al., 2007). Consumers purchase premium priced green energy only if they perceive sufficient additional benefits (Roe et al., 2001). The following sections discuss how consumers' perceptions about benefits of green-branded energy may affect brand attitude and behavioral intentions. Both utilitarian and psychological benefits seem to impact purchase decisions.

## 3. Utilitarian benefits of green energy

Consumers perceive that the consumption of products with environmentally sound attributes (e.g., greener production) delivers additional benefits compared to conventional alternatives (Bech-Larsen, 1996; Sriram & Forman, 1993). Many consumers believe that green energy prevents or decelerates climate change and global warming, increases air quality, and decreases energy dependency (Roe et al., 2001). Clark et al. (2003) find that green energy brand adopters perceive green electricity to be more environmentally friendly, lowering future solar energy costs, and reducing reliance on imported oil. Study participants also believe that reducing air pollution from electricity production would improve the health

of natural ecosystems and individuals, and that decreasing carbon dioxide emissions would slow global warming. Wüstenhagen and Bilharz (2006) suggest that green power customers intend to contribute to climate protection and renewable energy growth and to ensure that their purchasing decision does not support unsustainable energy sources. Roe et al. (2001) show that consumers who actually paid a price premium for green energy did so particularly with the intention to support the installation of new renewable generation capacity. To enhance perception of utilitarian benefits of green electricity, Salmela and Varho (2006) argue that consumers need a certain amount of information about the environmental impact of different electricity products. Studies confirm that information about environmentally relevant utilitarian product attributes affects purchase intentions (Roberts, 1996; Scholder-Ellen, 1994). Exposure to information about energy resource issues increases intention to pay a price premium for renewable energy (Zarnikau, 2003). Green energy labeling helps consumers to identify electricity products with genuine environmental benefits (Truffer et al., 2001); but the current information may be insufficient to inform consumer choice adequately. For example, purchasing decisions depend on whether the potential customer receives information about energy sources only, or also about emission levels (Johnson & Frank, 2006). More accurate and detailed labeling information than typically provided may be necessary to guide consumers' decision making toward green energy.

The theory of reasoned action (Fishbein & Ajzen, 1975) provides a framework to analyze how perceptions of utilitarian environmental benefits affect green energy purchase intentions. Bang et al. (2000) support the proposition that beliefs about renewable energy relate positively to the intention to pay a price premium for green energy products.

**H2a.** Perceptions about green energy brand's utilitarian environmental benefits positively influence purchase intention.

**H2b.** Attitude toward the brand partially mediates the effect of green energy brand's utilitarian environmental benefits on purchase intention.

Purchasing green electricity delivers rather limited utilitarian benefits at the individual level. Reducing global warming or energy dependency only becomes a collective benefit when widespread renewable energy adoption occurs. However, green energy brands also offer psychological benefits to consumers.

## 4. Psychological benefits of green energy brands

### 4.1. Warm glow

Classical pro-social behavior theory posits that pure altruism motivates individuals to contribute to the common good (e.g., Bergstrom, Blume, & Varian, 1986). The literature conceptualizes altruism as a personal value structure with significant influences on behavior (Schwartz & Bilsky, 1987; Stern, Dietz, Kalof, & Guagnano, 1995). However, studies on contingent valuation analysis of the utility of contributing to public goods show that pure altruism does not entirely explain pro-social behavior (Andreoni, 1989, 1990). Consumers experience a direct, personal benefit arising from the contribution and independent of any increase in the common good, which Andreoni calls the "warm glow of giving". With regard to environmentally responsible behavior choices, consumers experience the intrinsic *warm glow* feeling of well being as a consequence of the moral satisfaction engendered by contributing to the environmental common good (Kahneman & Knetsch, 1992; Nunes & Schokkaert, 2003; Ritov & Kahneman, 1997). This conceptualization is consistent with empirical findings suggesting that some consumers purchase green energy at a premium price in order to feel

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