

GREEN GAS PROVIDERS' MARKETING STRATEGY IS OUT OF STEP WITH CONSUMER PREFERENCES: A COMPARATIVE ANALYSIS OF GERMANY, AUSTRIA, SWITZERLAND AND THE UK

Carsten Herbes, Nuertingen-Geislingen University, Germany, +49-7022-201-1057,
carsten.herbes@hfwu.de

Benedikt Rilling, Nuertingen-Geislingen University, Germany, +49-7022-201-278,
benedikt.rilling@hfwu.de

Overview

Heating private households accounts for a large part of total end energy consumption in many developed countries. Many households use natural gas for heating: In all EU 28 countries in total, gas accounts for 43% of final residential heat demand (Fleiter et al., 2017). This opens up opportunities for introducing renewable energies into the heating sector, namely in the form of biomethane-based gas products that can be used with established heating technology for the residential sector. Biogas is an established technology in many countries, but still requires substantial subsidies to be competitive (Cucchiella et al., 2019; Rajendran et al., 2019).

In some markets consumers can already chose biomethane-based gas products for heating their homes, which is one option to market biomethane without subsidies (Herbes et al., 2018; Herbes et al., 2016). However, in order to be successful, biomethane-based gas products need to meet consumers' preferences and pricing needs to be in line with these preferences. Past research has established that consumers prefer gas products with a high share of biomethane, carrying an eco-label and stemming from regional sources and from waste-based biogas plants rather than from plants that use energy crops (Forsa, 2013). Moreover, consumers prefer, for green electricity, cooperatives as providers over big utilities (Sagebiel et al., 2014). So far, the supply side of the biomethane market is rather under-researched, with the exception of one study on the German market (Herbes et al., 2016). Therefore our research questions were:

- RQ 1: Are the attributes of biomethane-based gas products in the four markets in line with consumer preferences?
- RQ 2: Are prices for products with attributes that are preferred by consumers higher than for products with attributes which are not preferred by consumers?

We transformed the second question into three hypotheses:

- H1: The attribute „biomethane content“ is positively related to the price (higher percentage => higher price)
- H2: The attribute level „regional“ is positively linked to the price
- H3: The attribute level „from waste“ (as opposed to “from energy crops”) is positively linked to the price

Methods

In order to answer the above research questions, we carried out an online content analysis of green gas products on providers' websites in two major natural gas markets, i.e. Germany and the UK and in two innovative small markets with a well-developed biogas industry, i.e. Austria and Switzerland. For the samples we used provider compilations provided by either national regulatory agencies (ofgem for the UK, E-Control for Austria), by a national industry association (gaz energie for Switzerland) or by an established trade journal (Germany). We validated our samples by cross-checking with the results from online gas tariff comparison portals. This approach yielded in the following number of tariffs under review per country:

- Germany: 127;
- Austria: 25;
- Switzerland: 188;
- UK: 24.

To answer the first research question, we applied simple descriptive statistics. To test H1 we calculated the correlation coefficient and in order to test H2 and H3, we applied Mann-Whitney-U-Tests.

Results

Regarding RQ 1 we found that the products in the markets are only partially in line with consumer preferences. The German market is strongly and the UK market partially dominated by tariffs with only 10% biomethane content (the rest consisting of natural gas). Tariffs with 100% biomethane content are rare in all four markets. Moreover, German providers in 86% of all cases and UK providers in 100% of all cases do not disclose where the biomethane is produced. In Switzerland, tariffs from regional, national and international production are of similar importance. In Austria, all tariffs are from regional sources. German suppliers are also very secretive about their feedstock: for 68% of all tariffs, they do not disclose their feedstock, only 15% of German are based on waste and 17% energy crops or a mix of waste and energy crops. In Switzerland 85% are based on waste and in Austria 53%. Providers in these two countries also mostly disclose their feedstocks. In the UK only one provider disclosed the feedstock.

Regarding RQ 2, we were able to support H1 for three countries: In Germany ($r=0.642$) as well as in Austria ($r=0.652$) and Switzerland ($r=0.941$), the price of the tariff rose with a higher biomethane content (significant at the 0.01 level). However, H2 was not supported. We were able to carry out a Mann-Whitney-U-Test for Germany and Switzerland and found no significant difference between regional and non-regional tariffs. H3 was supported for Germany, i.e. tariffs based on biogas from waste were more expensive than those based on biogas from energy crops. However, H3 was not supported for Austria and Switzerland and for UK data were insufficient.

Conclusions

Overall product and price strategy of providers in the four countries under review seem out of step with consumer preferences. Disclosure of biomethane product attributes is still insufficient in Germany, providers could increase trust and possibly skim a higher willingness-to-pay (WTP) if disclosing pro-environmental attributes. German and Swiss providers could try to exploit the possibly higher WTP for local/regional gas products. Austrian providers could try to exploit the possibly higher WTP for waste-based gas products.

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