

Staging of Renewable Energy in the Black Forest - A Tourism Niche with Potential?

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Abstract

The Black Forest offers renewable energy as a specific tourist destination in the form of bioenergy villages (BEV). Particularly expert tourists tend to visit them. The results of two quantitative surveys on the supply and demand side show that there is, up to now, an untapped potential among experience-oriented tourists for this type of niche tourism.

Keywords: Renewable energy, energy tourism, Black Forest, sustainability, bioenergy villages

Introduction

Tourism in connection with renewable energy (EE) represents a niche whose potential is often not fully utilized and sometimes not even known. The first travel guide on this topic “Germany – Discover Renewable Energy” appeared in 2010 in the Baedeker publishing house and was the first in this medium to point to this touristic trend (Frey 2014). Tourism that focuses on renewable energy as a point of attraction is conceptually categorized by Frantál and Urbánková (2014) as *special interest tourism* within energy tourism in general with interfaces to industrial tourism, cultural and *heritage* tourism as well as adventure tourism. Jiricka et al. (2012) additionally state that, with this topic, it's important to differentiate between expert tourism and experience-oriented tourism, due to the fact that both tourists with a specialist background as well as interested laypersons are target groups for renewable energy tourism.

The two target groups display different demand patterns: the expert only travels to a location for a single day. They are interested in gaining knowledge about the topic of renewable energies that they can apply in their positions as entrepreneurs, mayors or scientists. Experience-oriented tourists prefer to experience the topic of energy in an entertaining manner, via exhibitions, tours or amusement parks. They integrate energy tourism into their vacation experience, which additionally keeps them in the region longer. As a target group, experience-oriented tourists have potential that has not yet been fully tapped (Jiricka et al. 2010).

Renewable energies are often linked to tourism as energy sources for touristic activities, such as in the form of solar panels on hotel roofs or boats with electric motors. In this rather everyday form, renewable energies do not yet in themselves qualify as tourist attractions; they require touristic staging and marketing. Renewable energies can be limited by popular protests which can also be directed against renewable energies, e.g., against wind turbines which “ruin” the landscape, or biogas plants that release foul scents or solar power plants that are blinding to look at. In general, the topic of renewable energies is not exclusively

associated with

In the long term, the Black Forest, as a tourist destination, faces difficulties profitably operating ski resorts. The study will thus lose an essential source of income. The study also examines whether promoting renewable energy can be a viable alternative. The possible alternatives for this destination were surveyed in the villages on the supply side as well as on the demand side. The potential demand were surveyed in the villages on the supply side as well as on the demand side. A glimpse of the potential for this special type of tourism in the mountain region.

Literature Review

The existing literature on the topic of tourism and renewable energies is primarily related to renewable energies employed by tourism service providers as energy sources, particularly on islands or in country areas (Dalton et al. 2009, Michalena et al. 2009, Michelana & Tripanagnostopoulos, 2010, Chaoqun, 2011). This is plausible in so far as peripheral tourist areas often rely on renewable energies due to the often existing necessity of using a decentralized and/or self-sufficient energy supply.

Research on energy tourism that is not only limited to the use of renewable energies by touristic service providers is, according to Frantál & Urbánková (2014), a research area that is only now emerging and with a correspondingly few number of studies. The authors also point out that energy tourism, in the form of info centers, tours, viewing platforms, etc. are successfully being used by energy companies to cultivate their image and increase social acceptance. These companies plan for a touristic co-use of their facilities from the outset and this is predominantly being implemented by renewable energy companies. Often, the still innovative character of the **facility** can offer a basis for touristic staging and can contribute to sensitizing visitors to more climate-friendly energy forms (Albrecht et al. 2013). Renewable energy tourism can thus be sustainable in two regards: the attraction is designed to offer a sustainable travel experience and, at the same time, can, by touching on the topic, inspire and motivate the experience-oriented tourist to integrate sustainable energy forms in their everyday lives (Jiricka et al. 2010). At the same time however, old industries using energy sources such as coal are also being promoted as touristic destinations. Here the focus is not on the future, but frequently nostalgically on the past, in the sense of *industrial heritage tourism* (Edwards & LurdésiCoit 1996, Conlin & Jolliffe 2011). Another variation is the new touristic staging of investment ruins: the „Fast Breeder” in Kalkar, which never went into operation, was converted into an amusement park while mostly maintaining its original architecture (Nabiyeva, 2014).

The atomic power plant in Bataan, which was never opened after the Chernobyl disaster, shows how different the perception and the purpose of energy tourism can be for the very same attraction (Oshini 2012). As an accessible atomic power plant, it is a successful touristic attraction and is intended to facilitate the acceptance of atomic power. At the same time, Greenpeace organizes tours there with the opposite intention (Frantál&Urbánková 2014).

Given this background, the following research questions were posed using the regional example of the Black Forest:

□□□□ To what extent is touristic staging of renewable energies taking place in the Black Forest?

□□□□ To what extent are renewable energies as touristic attractions interesting for experience-oriented tourists in the Black Forest?

Method

The initial research question bioenergy villages (BEV). According to the Environment, Measurements and Statistics of Württemberg (LUBW, no year) the state covers „at least 50% of its energy with locally produced bioenergy“. In addition to wind power, the required electricity is produced in a biogas plant and fed into the grid.

The thermal energy produced using a wood chip firing system for example, supplies houses with heat and warm water the whole year round. The citizens support the idea of the BEV and are integrated in the decision-making process. The bioenergy plants are often locally owned (ibid).

Only one overnight accommodation has been included as an example in the analysis.

Data was collected by students using an empirical survey in the form of an email survey containing a standardized questionnaire ('Touristic interest in bioenergy villages and the experience of renewable energies in the Black Forest' and 'Touristic interest in renewable energies in the Black Forest').

This questionnaire involved an explorative survey. The questions were intended to provide an initial impression of bioenergy villages, touristic interest in BEVs and how people experience renewable energies. The questionnaire correspondingly consisted of questions about the BEV itself, (touristic) offerings, the visitors themselves, touristic marketing of the BEV as well as an estimate of the touristic potential of BEVs and renewable energies. The questionnaire for the overnight accommodation was designed in the same way as the BEV questionnaire.

The survey was aimed at all bioenergy villages in the Black Forest listed as existing BEVs on the homepages of the Agency for Renewable Resources (the Fachagentur Nachwachsende Rohstoffe e. V. - FNR - <https://bioenergie Dorf.fnr.de/karten/bioenergiekommunen/> 13.04.2018) and/or the State Institute for the Environment, Measurements and Nature Conservation Baden-Württemberg - LUBW (<http://www.energieatlas-bw.de/praxisbeispiele/bioenergie Doerfer/bestehende-bioenergie Doerfer#Teaser>).

The overnight accommodation was included in the survey based on its cooperation partnership. The survey results from the overnight accommodation however were not analyzed in detail and therefore not included in the overall scope of this publication.

The survey started on April 19, 2018 and was completed on May 7 or on May 18, 2018 (extension). Five of the 17 BEVs we contacted participated in the survey (response rate: 30%). Three of the BEVs mentioned that they would not participate in the survey due to a lack of touristic marketing. The other BEVs did not respond to our request.

Based on of the low sample size (n=5), a quantitative evaluation probably does not make sense. Still, in order to get a better overview of the results, the data will nevertheless be partially displayed in quantitative form. Due to the fact that not all participants responded to all questions (*Item Non Response* issue), each question or answer will be accompanied by the sample size for the corresponding question (n=...).

For the second research question, an empirical survey in the form of oral interviews was carried out locally (by students) using standardized questionnaires.

The survey was conducted by the students in Titisee (Black Forest) on March 17, 2018. Titisee was selected for the interviews because, as an all- season destination, there is always a high percentage of foreign visitors and we wanted to include their perspective along with that of the local tourists. The interview participants were selected in a random manner: each person that crossed an imaginary line at each survey location was addressed. 340 of the 700 people addressed participated (response rate: 49%).

A descriptive statistical evaluation was carried out. Due to the *Item Non Response* issue described above, each question or answer here will also be accompanied by the sample size for the corresponding question (n=...).

Results

The BEV surveys were answered by individuals with different responsibilities. The information was twice provided by the board of the bioenergy village, twice by an operator and once by a coordinator of visitor enquiry. While most of the bioenergy villages (four BEVs) used different types of plants to produce renewable energies, one of the BEVs only used one type. Figure 1 provides an overview of the types of facilities/energy sources used to produce renewable energies. This displays the frequency of the answers in percent.

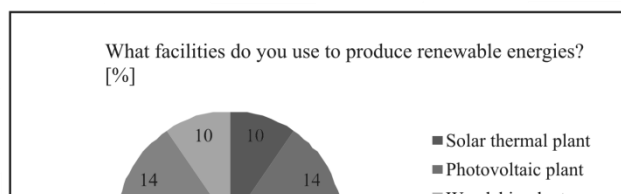


Fig.1: Facilities used to produce renewable energies (frequency in percent) (Own representation, 2018).

All participating bioenergy villages organize events for people to be able to experience renewable energies or to 'get to know' the BEV. One of the activities mentioned by all BEVs was tours. In addition, the category 'miscellaneous' and the category 'educational trail' were both mentioned once. According to the surveys, the most frequent visitors are above all school classes, student groups as well as politicians and businesspeople (see table 1).

	Never	Rarely	Frequently	Very often	n.a.
Private person	0	2	1	0	2
School classes	0	0	5	0	0
Student groups	0	0	4	1	0
Politicians and businesspeople	0	1	3	1	0
Miscellaneous	0	0	1	0	4
Total	0	3	14	2	0

Table 1: Frequency of visits from different visitor groups(Own representation, 2018)

The country of origin provided by the visitors can be found in the following Figure 2. This displays the frequency of the answers in percent for each answer category.

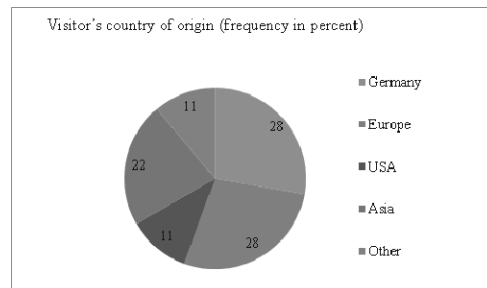


Fig.2: Visitor's country of origin (frequency in percent) (Own representation, 2018).

The following Figure 3 shows how high the BEV estimates the percentage of the **groups of origin**, measured against the total number of visitors. The average value for the five BEVs is displayed.

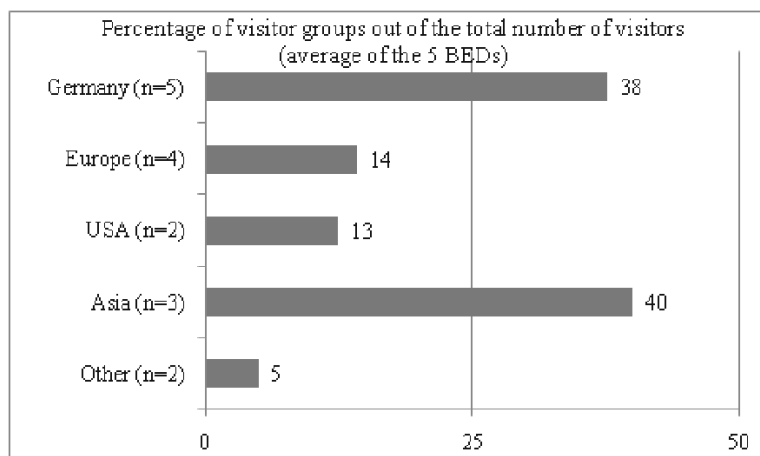


Fig. 3: Percentage of visitor groups out of the total number of visitors (average of the five BEVs) (Own representation, 2018)

All 5 bioenergy villages plan to continue offering their programs and events in the next five years. Some of the programs/events will remain the same as they are now; in some cases, the offerings will be changed to match demand.

Different channels are used for marketing purposes. Three of the BEVs have their own homepage. While two of these BEVs mentioned this as the only marketing channel, the third also uses print media and social media. Another one of

the five BEVs listed print media and 'via third parties' as marketing channels used. The fifth BEV did not provide any information.

Finally, the survey participants were asked whether they think BEVs and renewable energies will become more significant touristic attractions. Regarding the BEVs, three of the five who participated said no. A somewhat less pessimistic picture can be seen in their estimate of renewable energies as a touristic attraction. Here only two of the five surveyed did not see a strong future potential for renewable energies as a touristic attraction (see Figure 4).

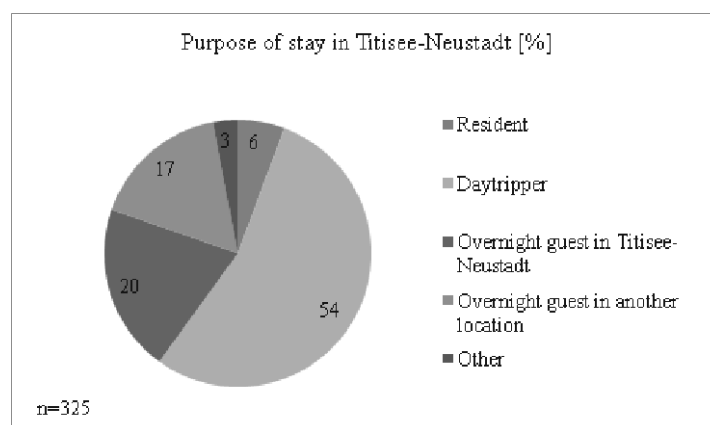
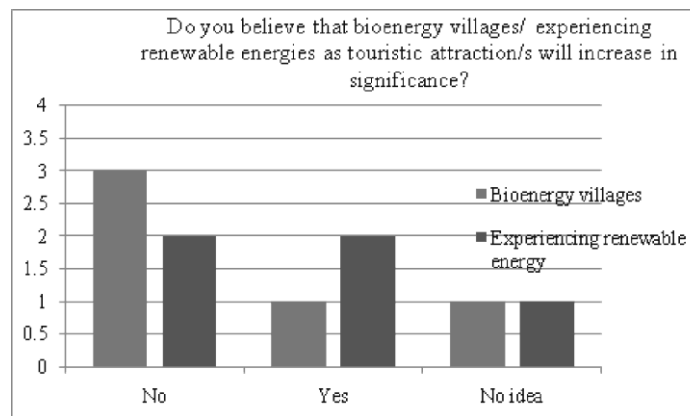


Fig. 4: Estimate of BEVs and renewable energies as touristic attraction/s.

(Own representation, 2018).

The research question, to what extent there are bioenergy villages in the Black Forest that are marketed for tourists or are open for visitors, can only be partially answered based on the low sample size of this study. All five BEVs offer tours. The target group primarily involves school classes, student groups or individuals from politics and business. In addition to Germany and Europe, the Asian countries appear to be a (niche) market for experiencing BEVs/renewable energies. In terms of the type of staging, based on of the current offerings, which are primarily in the form of tours, cannot or do not provide an experience.

Based on the explorative nature of this study and the low sample size, the survey only provides an initial and very limited glimpse into the topic of staging renewable energies in the Black Forest.

The participants in the survey on 'Experiencing Renewable Energies on Vacation and Recreation Trips' were primarily experience-oriented tourists (see above). The majority of the survey participants were day trippers, followed by overnight guests in Titisee-Neustadt and overnight guests in other locations. Residents of Titisee-Neustadt represent only a small percentage of the survey participants (Figure 5).

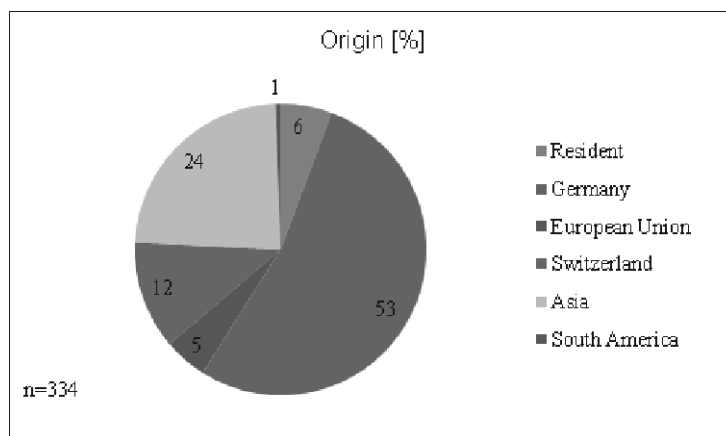
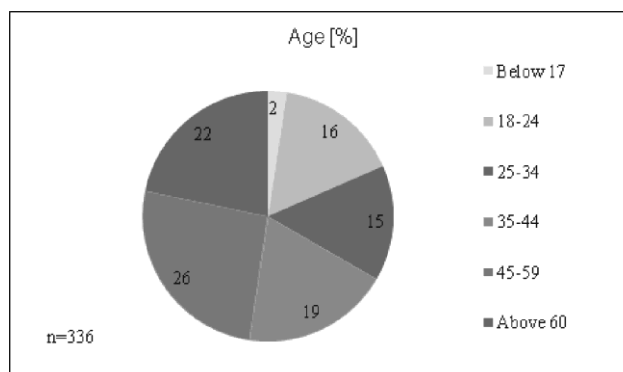
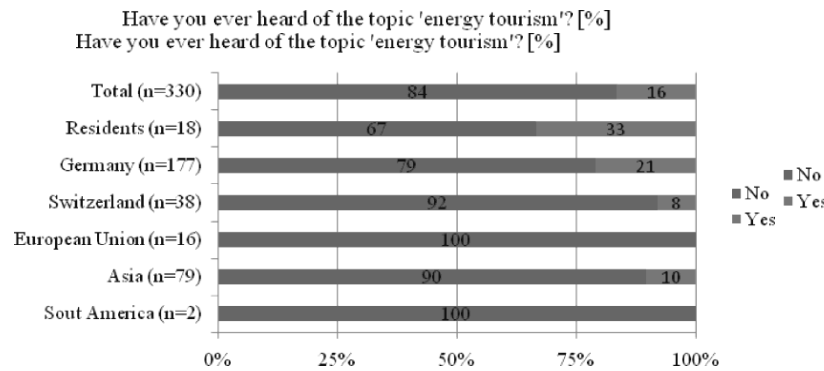


Fig. 5: Purpose of stay in Titisee-Neustadt [%] (Own representation, 2018) The origin of the interview

participants can be seen in the Figure 6 below: **Fig. 6: Origin [%](Own representation, 2018).**

The distribution of men and women in the survey is relatively balanced at 44% and 56% respectively (n=315). The average age of the interview participants was 44 years. The distribution of the different age groups can be seen in Figure 7.





method they would prefer in the renewable energy offers from provided answer categories. Also here, a maximum of three categories could be selected. The results, displayed using the frequency percentage for each answer aspect can be found in Figure 13. Figure 14 provides an overview of which the interview participants found particularly important in considering renewable energy offers. They were again able to select a maximum of three of the different provided answer categories.

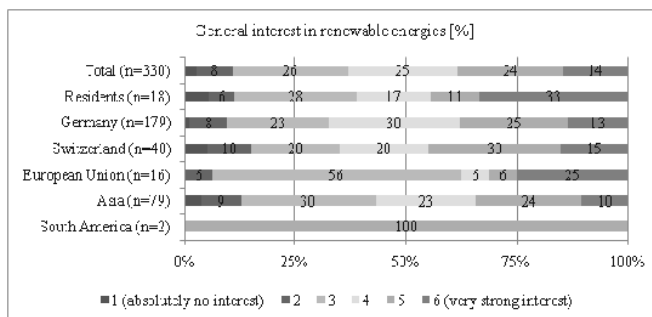


Fig. 13: Preferred form that information is communicated [%] (Own representation, 2018)

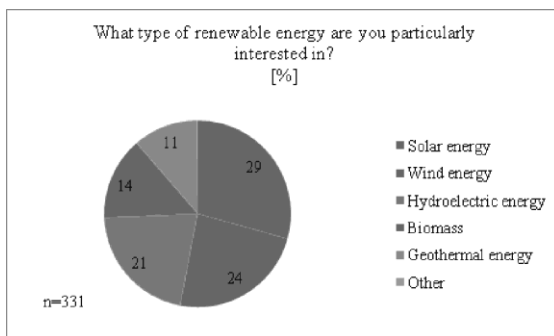
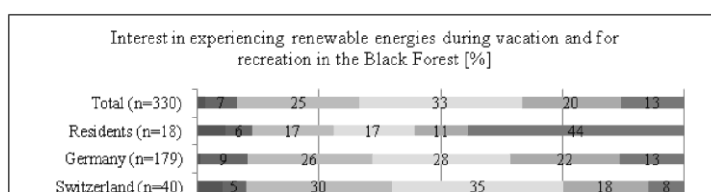


Figure 14: Important aspects for renewable energy offers [%] (Own representation, 2018).



Discussion

The demand for bio-energy villages is primarily rooted in expert tourism. Tourists provide explanations about the respective renewable energy sources. Given that the potential of experience-oriented tourists has, up to now, not been fully tapped within the corresponding offer designs and marketing, it is no surprise that the bioenergy villages themselves are very reserved or pessimistic about the future of the existing form of energy tourism. At the same time, the emerging Asian market is not being adequately addressed.

The latter stands out to a significant degree in terms of demand from experience-oriented tourists: including 24% of those surveyed, it is not a relevant target group with a strong interest in energy tourism. Experience-oriented tourists overall displayed a certain amount of interest in renewable energies, both in general as well as in experiencing renewable energies on vacation and for recreation, although the concept of „energy tourism“ as such was mostly unfamiliar. The most attractive offers appear to be electric mobility, wind turbines, and solar vehicles and power plants. The type of information method most frequently mentioned were experiential learning, such as the following examples, were listed in the questionnaire: trip with solar/electric boat, e-bike, visiting a solar café and the interactive experience walk. Renewable energy offers should contain both educational and experiential components. Experiencing, learning, having fun, interactive activities as well as the 'having fun with a good conscience' are components equally desired by tourists in terms of renewable energy offers.

It needs to be kept in mind that this investigation of demand in Tignes is only partially representative in character: the survey participants were randomly selected, however their number is too low. The survey sample, with its equally very small number of cases, also cannot be viewed as representative. It does however display interesting tendencies that open further research options in this developing field.

Energy tourism with a focus on renewable energies does have potential in domestic and foreign source markets. However, due to its niche quality, it is unlikely to be able to compensate for the loss in income from ski tourism in

the Black Forest. Renewable energies as touristic attractions can only be one piece of the overall transition to a post-ski era in the Black Forest.

Conclusion

Touristic staging of renewable energies is taking place in the Black Forest, primarily in the form of bioenergy villages. Demand is dominated by expert tourists. An expansion of the marketing and offer design for the experience-oriented tourist target group has so far not taken place.

Experience-oriented tourists in general and Asian experience-oriented tourists in particular represent, thus far, an untapped potential for using renewable energies as a touristic attraction. The future of renewable energies as touristic attractions differs considerably in regards to the offer design (e.g. bioenergy villages) and demand: The BEVs do not see the potential niche, while the survey of experience-oriented tourists is best in renewable energy tourism.

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