

# Overall methodology

In 2005, the [Regional Planning Office Havelland-Fläming](#) conducted a questionnaire [survey](#) with the aim to assess the acceptance of wind turbines in its planning region. Since this survey the local inhabitants in Havelland-Fläming continued living with the wind turbines. In some villages, they had to accustom themselves to an ongoing growth of wind parks in their direct neighbourhood, with the prospect of even more turbines being added in the near future.

Our study project received the opportunity to repeat the survey of 2005 in the summer term 2016. The survey was not a complete repetition of the whole area previously surveyed. It focused on the two selected municipalities Dahme/Mark and Niederer Fläming, which are located in the planning region Havelland-Fläming. The aim set by the Regional Planning Office was to identify possible changes in the acceptance of wind turbines of the local communities, which are faced with the wind turbines every day. This opportunity was the starting point for our project. Additionally, there was a first contact established to the municipality Uebigau-Wahrenbrück situated in the planning region Lausitz-Spreewald. This municipality has a history of coal mining and is now highly engaged in renewable energy production.

To understand the factors contributing to social acceptance of wind energy, we conducted a [synopsis](#). That review strengthened our background knowledge about the topic. In the scientific literature, we identified factors leading towards an acceptance of wind energy and factors rather leading to a rejection.

Taking the framework conditions of our study project and our newly gained knowledge from the literature review, further research questions evolved, for example if the acceptance of wind energy increases with greater living distance to the wind turbines, and if younger people have a higher acceptance than older ones. We were also interested in the question if the acceptance increases when people feel better informed about wind turbines and if the acceptance correlates to a higher willingness to pay for renewable energies. However, our main goal remained the assessment of changes in the attitudes of a part of the local population which was interviewed more than 10 years ago.

Keeping the factors leading towards an acceptance of wind energy and factors rather leading to a rejection in mind, we prepared a field research with the aim to learn more about acceptance of wind energy in selected areas in the state of Brandenburg.

Inhabitants of rural municipalities in Havelland-Fläming and Lausitz-Spreewald, living in close proximity of wind turbines, and urban city dwellers in Potsdam were asked to answer a questionnaire. We decided to interview both a rural and an urban population to investigate our hypothesis that the acceptance of wind turbines of people living in the city is higher than of people living in rural areas close to turbines. Our hypothesis is deductive and based on the literature review, which has shown that people might feel disturbed by turbines in their direct field of view. Therefore, people living in rural areas, who have to live in close proximity of wind turbines, might feel disturbed by wind turbines and might have a lower acceptance compared to city dwellers, who in their daily life are not exposed to the turbines as much as people living in rural areas.

The [questionnaire in Havelland-Fläming](#) was almost identical to the one that was used ten years ago by the Regional Planning Office in order to ensure full comparability. The previous questionnaire included 24 closed questions regarding the inhabitant's opinion about their life with the wind turbines, but also about their attitude towards different energy sources. We only made some small changes in

regard to wording with the aim to make the questions and answer options better understandable and to avoid misunderstandings. The [Lausitz-Spreewald questionnaire](#) was similar to the one in Havelland-Fläming. Specific questions regarding the history of coalmining that used to be very influential for the region were added. The [version of the questionnaire for the urban area](#) comprised many questions of the versions for the rural areas but added questions reflecting the perspective of city dwellers: Do they know where the closest location of wind turbines to the city? Do they feel disturbed by the turbines during trips to the surrounding areas of Potsdam.

For the distribution of the questionnaires, the local registry offices of Dahme/Mark, Niederer Fläming and Uebigau-Wahrenbrück (Lausitz-Spreewald) provided us address lists. These lists have been generated through a systematic random sampling which every  $k^{\text{th}}$  element was chosen, beginning with a randomly chosen point. For Dahme/Mark and Niederer Fläming  $k$  was defined as every 5th in small villages (fewer than 200 inhabitants) or every 10th in bigger villages. For Uebigau-Wahrenbrück,  $k$  was always defined as every 10th. In both regions, the defined minimum and maximum of sample sizes were 1 and 50, respectively.

We delivered the questionnaires into the letterboxes in the beginning of June 2016. In the municipalities of Havelland-Fläming, the households had the chance to drop the completed questionnaire at the local administration office or pass it directly to us when we visited the households two weeks later, asking for the completed questionnaires. In Lausitz-Spreewald, the interviewees were asked to send the questionnaires back to the TU Berlin via a provided envelope free of postal charge. In contrast to this “mailbox approach”, in the urban area of Potsdam we interviewed the inhabitants directly on the street. The different methods lead to different response rates. In Havelland-Fläming we received 166 questionnaires back out of 500 delivered. In Spreewald-Lausitz we distributed 216 and received only 21 back. After several days in different parts of Potsdam, we managed to convince 125 people to answer to us. To provide a rough estimate how many people allowed us to interview them we estimate that every seventh person was willing to answer the questionnaire.



Fig. 1: In order to collect data concerning the social acceptance of wind energy, questionnaires were distributed to villages that were often close to wind turbines in Dahme/Mark and Niederer Fläming as well as in Uebigau-Wahrenbrück (Photo: R. Camargo)

After conducting the surveys in the three study areas, we analysed the questions using question-wise

quantitative frequency analysis. For the rural areas, we also used correlation analysis and sub-sampling. Correlation analysis clarifies the statistically significant relation between social acceptance on wind energy and influential factors. Subsampling analysis identifies detailed characteristics of specific groups of people, for instance those with a **NIMBY** attitude and/or opponents of wind energy.

We tested our sub-hypothesis for the rural and urban areas and the overall hypothesis against the survey results. Further we compared the results from the Havelland-Fläming 2005 survey to the specific results of 2016 of Dahme/Mark and Niederer Fläming.

Since we received only 21 questionnaires from Lausitz-Spreewald, we could not carry on any statistically meaningful analysis for this municipality. We decided to join the results of the Havelland-Fläming and Lausitz-Spreewald, where the questionnaire design allowed it. From there, we called this merged analysis the rural region/group.

Finally, the identified factors leading towards acceptance in rural and urban Brandenburg are compared to the findings in the literature review.

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