

The impression of the coastal landscape with or without wind farm by the inhabitants of the coastal area and its factors

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Recently wind power generation in particular is receiving a lot of attention in renewable energy. The coastal area of Hokkaido prefecture were known as suitable site for wind farm construction because of highly potential of good wind condition. Although negative effects were often pointed out by inhabitants of wind farms, there were no guidelines to protect scenic value of coastal area except national park area. The purpose of this study is to identify the impact of wind farms on coastal landscape evaluation and to identify the factors which affect the impression of coastal landscape.

Four study sites where have same component of generation but different relation were selected for this survey in Hokkaido, Japan. The questionnaire survey was conducted in Honcho-Area and Utasutsu-Area in Suttsu-Town which has 11 windmills as symbol of town, Teine-Ward, Sapporo-City, in which will be built new wind farm on nearby coastal area and Ishikari-City which has 3 citizen windmills. The questionnaire includes "the impression evaluation of the photographs with/without the wind farm", "the attitude toward the wind farm", and "the respondents attributes."

In all survey sites, as a result, the score of impression evaluation tended to be low as the wind farm in photograph is getting bigger. About the question of the way of thinking, Suttsu tended to have acceptable attitude toward wind farm, Teine tended to have unacceptable attitude toward wind farm and Ishikari and Utasutsu had the middle attitude between Suttsu and Teine. On identifying the factor that affects the impression evaluation using this score for a factor analysis, we got two factors "the impact on human health and ecosystem" and "the benefit of wind farm." Furthermore, we classified respondents in four clusters using the score of factor analysis. The group which has acceptable attitude toward wind farm evaluated the photographs with wind farm more highly than without wind farm. The group which has unacceptable attitude toward wind farm evaluated photographs with wind farm low.

This study showed that the impression evaluation was influenced not only by scenic aspects, visible or invisible, but also by the attitude toward wind power generation. In conclusion, considering that such difference in the attitude can influence the impression evaluation on the landscape aspect, it is important to explain to inhabitants in detail and to discuss after construction when we build a new wind power plant.

Keywords: wind farm, coastal landscape, attributes, impression evaluation, inhabitants, renewable energy