

Challenges in consensus building regarding introduction of wind power facilities and consideration of countermeasures using kLAB system

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Introduction

In recent years, a large-scale introduction and a main power source of renewable energy are required to realize decarbonized society in Japan. On the other hand, environmental conflicts have arisen between local residents and proponents in areas where they had been promoted. To avoid these conflicts and introduce renewable energies for regional coexistence, it is necessary to consider countermeasures by administration. However, they have some problems from the perspective of consensus building. Meanwhile, a selection model for an onshore wind power promotion area option by using kLAB system has developed [1]. This study is aimed to clarify elements of challenges in consensus building regarding introduction of wind power facilities and consider countermeasures using kLAB system.

Methodology

As an advanced case of related measures in consensus building, imposing tax of regional coexistence under ordinance related to renewable energies in Miyagi Prefecture was reported [2]. Based on this ordinance, a wind power operation was approved as the first tax-exempt project in Shiroishi City. First, the advantages and challenges of the relevant systems are summarized in this case. Next, according to the issues, countermeasures using kLAB system are considered. And finally, similar analyses are conducted to examine the effectiveness of this system in multiple cases.

Results and Discussion

In the case of Shiroishi City, one of the challenges is a length of the environmental impact assessment period. The implementation took approximately six years to complete, from Phase 1 in June 2018 to Phase 4 in September 2024. In the process, several areas were excluded from the project. The reasons were foresights of the landscape at the northern end and considerations of the noise at the southern end on Phase 3. Furthermore, the number of facilities was reduced to reflect concerns about overlapping conservation forests and the risk of mountain hawk-eagles colliding with wind turbines on Phase 4. Regarding these, kLAB system was able to handle considerations of the noise and the conservation forests. However, foresights of the landscape and the birds colliding needed to be dealt with individually. Additionally, similar analyses and comparative studies were carried out to examine the possibility of countermeasures using kLAB system.

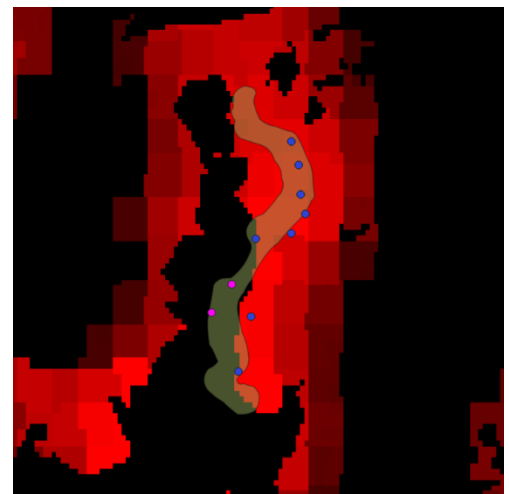


Figure 1 Comparison of the environmental assessment process for wind powers and the suitable sites in kLAB system at Shiroishi City, Miyagi prefecture

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References

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