Recycling wind turbines

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The development of wind power promises much in terms of providing us with renewable energy for the future and wind turbines could be the most effective way to harness that power. Danish researchers now suggest that in order to assess the overall environmental impact of wind power, however, the finite lifespan of wind turbines and the need to replace and recycle them must be taken into account. Such an assessment will help policy makers and the industry to develop the green credentials of wind power more effectively.

Writing today in the Inderscience publication, International Journal of Technology, Policy and Management, the researchers describe a prospective case study for managing environmental aspects of wind turbines. Their suggested plan for assessing the overall impact of installing and operating wind turbines should be adopted by the industry and policy makers, they say.

Wind turbines are one of the most environmentally sound technologies for producing electricity, explain the researchers. However, the removal and recycling phase of wind turbines has been identified as a blind spot in assessing their overall environmental impact. Most studies have ignored this phase and focused entirely on their operation and in some cases the production and installation of wind turbines.

Foresight and innovation analysts Per Dannemand Andersen and Mads Borup working with wind energy expert Thomas Krogh have devised a method for mapping and mitigating the negative environmental impacts of wind turbines which considers the future removal and recycling of

offshore wind turbines up to the year 2050. By combining life-cycle assessment and taking into account future developments in this area of renewable energy, the team hopes that the wind power industry will be able to minimize any potential negative impact of their use.

"Because the wind-turbine industry is relatively young, there is only a limited amount of practical experience on the removal and recycling of wind turbines," Dannemand Andersen says, "It is likely to take more than 20 years before a substantial amount of practical experience regarding the dismantling, separation, recycling, disposal, etc., of wind-power systems is gained."

The present study has developed an interactive and process-oriented method for investigating the environmental impact of wind turbines removal and recycling. The team hopes that the industry will adopt their approach and so find ways to reduce any negative impacts of wind power.

Source: Inderscience Publishers