



Wind Value

End of Life Decisions for Wind Farms: An Opportunity for Climate Action and for Energy Communities

D. Mikindani, P. Deeney

of University College Cork

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UCC

Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland



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Research Team

- Peter Deeney PI & Supervisor, Senior Post Doctoral Researcher in the ERI-UCC
- Paul Leahy Co P.I. for Wind Value and Co-Supervisor for PhD
(Lecture in Wind Energy UCC)
- John O'Brien Co-Supervisor PhD (Lecture in finance UCC)
- Niall Dunphy Collaborator specialising in Sustainability and Community Energy
(Director of the cleaner promotion unit UCC)
- Fabian Gogolin Collaborator specialising in Financial Modelling and Corporate Finance
(Ass Professor Leeds University Business School)
- Rebecca Windemer Collaborator specialising in Planning, Communities and Wind Energy
(Lecture University of the West of England)
- Dorcas Mikindani PhD Scholar UCC
- Luca Bernardi Masters Student from the University of Padua

Overall Objectives

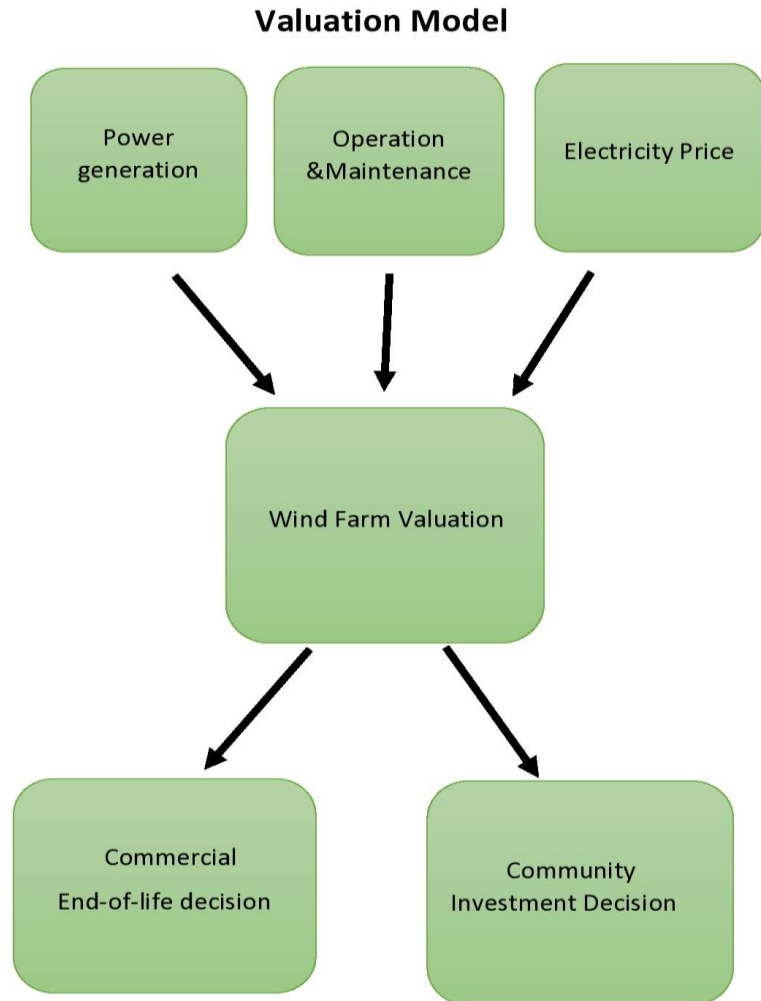
- The project is an important contribution to climate action and the findings will be applicable nationally and internationally
- Create a valuation model for wind farms as they approach their end of life, which will then be used to create two decision support tools
- To develop skills, knowledge & career prospects of a student
- It may lead to start-up businesses from the commercialization of the decision support tools (economic growth)

The Aim

As wind farms approach their end of life, significant business decisions must be made on whether to decommission, repower or extend the life of the wind turbines.

- Decommission-removing wind turbines /stop operations
- Repower-replacing aging wind turbines components with new more powerful ones
- Life extension-repairing wind turbine components

The "Wind Value" project will focus on valuation of wind farms as they approach their end of life, on which the valuation will build two decision support tools (end of life choices & community investment)



The Plan

- The Valuation model will be built based on power generation, Operations & maintenance costs, and Electricity prices.
- Power generation- existing models of power generation from wind farms matched to existing wind farms historical data
- Operations & maintenance- running costs of the existing onshore wind farms using failure data from the literature and wind energy industry
- Electricity Price-development of the new price model which will give an indication of the mean price and includes also the variability in the electricity prices
- A “real options method” will be used. why? It enables the estimates of opportunity costs given different scenarios

The Outcome

Two decision tools from valuation of wind farms

- The first decision tool which estimates the value from each of the three alternatives (decommissioning, repowering or life extension)
- The Second decision support tool which considers the means and risks of community investment in a near end-of-life of the wind farm. (A chance for the local community to invest in wind farms as their value decrease)

Thank You