



WIND VALUE

An Opportunity for Climate Action and for Energy Communities

End-of-Life Issues for Wind Farms:
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**Report: First Wind Value Conference:
End-of-Life Issues for Wind Farms**

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The Wind Value project is based in the Environmental Research Institute of University College Cork (UCC), Ireland. The PI, Peter Deeney, may be found in the Cleaner Production Promotion Unit, G0.3, Environmental Research Institute, Ellen Hutchins Building, Lee Road, Cork T23 X10. The Research Team comprises: Luca Bernardi, Peter Deeney, Niall Dunphy, Fabian Gogolin, Paul Leahy, Dorcas Mikindani, John O'Brien and Rebecca Windemer.

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Executive Summary

This research project seeks to estimate a financial valuation for onshore wind farms in Ireland. It will develop decision support tools which will assist wind farm managers to decide between decommissioning, repowering and life-extension for the end-of-life of a wind farm. This research will also assist local communities who may be interested in buying part or all of their local wind farm.

The conference allowed several international researchers and industry experts to explore ideas about end of life issues for wind farms, particularly focusing on wind blades which are difficult to deal with.

Funding Acknowledgement

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Ollscoil na hÉireann
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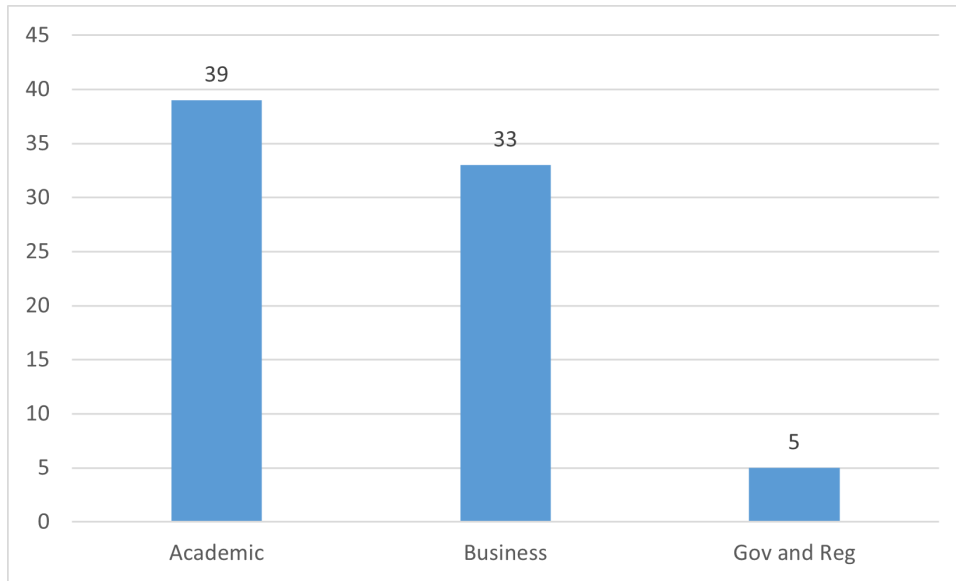


Figure 1: Conference Participants

1 Introduction

The [First Wind Value Conference](#), organized by the [Wind Value](#) research group, was held the Ellen Hutchins Building, Lee Road, Cork on Friday 27th May 2022.

The conference looked at the decisions to be made at the end-of-life of a wind farm, with particular interest in recycling of wind turbine blades.

2 Participants

There were 18 people in the room and 59 online. The graph in Figure 1 shows a breakdown of all attendees by source. 51% of those attending were from academia, 43% from business and 5% from government. The researchers were from: [Aston University](#), [Cardiff University](#), [DTU](#), [Electric Power Research Institute](#), [Georgia Tech](#), [HTW Berlin](#), [New Mexico University](#), [Nordhausen University of Applied Sciences](#), [Roux Institute in Northeastern University](#), [Technological University Dublin](#), [Universidade Federal de São Paulo](#), [University College Cork](#), [University of Galway](#), [University of Leeds](#), [University of Southern Denmark](#), [University of the West of England](#). Businesses: [Anderson McQue](#), [Atlantic Consultancy](#), [Bord na Móna](#), [CNOOC International](#), [DNV](#), [Ecopower](#), [Enterprise Ireland](#), [ESB Networks](#), [Future Energy Ireland](#), [HJHansen Recycling Group](#), [JLL Energy and Infrastructure Advisory](#), [Ionic Consulting \(AFRY\)](#), [National Composites Centre](#), [NTR Asset Management Europe](#), [Ørsted](#), [Prepay Power](#), [RenewableNI](#), [RES Group](#), [RDR Wind e.V.](#), [Rockall Research Ltd.](#), [SSE Renewables](#), [Suisse Éole](#), [Wind Energy Ireland](#), [Windcat](#), Government and regulators: [Department of Housing, Local Government and Heritage](#), [Health Service Executive](#), [National Treasury Management Agency](#), [Sustainable Energy Authority of Ireland](#),

3 Presentations

The speakers included international experts from academia and industry. There follows short summaries of their presentations, and where available, links to their profiles, as well as slides and videos of their presentations.

3.1 Introduction, Paul Leahy

Paul Leahy welcomed people to the conference which will deal with issues at the end-of-life of wind farms. [Profile at UCC](#), [Video](#).

3.2 The Plan for the Wind Value Project, Dorcas Mikindani

Dorcas Mikindani presented a short summary of the aims and objectives of the Wind Value research project. These aims include creating two decision support tools, one for wind farm developers dealing with choices at end-of-life (repowering, life extension and decommissioning) and one for communities wishing to invest in wind farms who wish to understand the risk of such an investment. [Profile at LinkedIn](#), [Slides](#), [Video](#).

3.3 An Industry Perspective, Dave Linehan

Dave Linehan, head of Policy and Research at Wind Energy Ireland gave a presentation summarizing Wind Energy Ireland's aim to join with researchers to study wind energy and provide evidence for policy development. [Website](#), [Slides](#), [Video](#)

3.4 Some Issues for Wind Farm End-of-Life, Paul Leahy

Paul Leahy described the current state of wind energy in Ireland and some projections for the future rates of decommissioning referring to [Deeney et al., \(2022\)](#). [Profile at UCC](#), [Slides](#), [Video](#).

3.5 Blade Bridge Construction, Kieran Ruane

Kieran Ruane discussed the design parameters required by the client, Cork County Council, for the pedestrian bridge on the Youghal Midleton Greenway. Much of the challenge of the construction is the complexity of the geometry of the blades. [Profile](#), [Slides](#), [Video](#)

3.6 Life Cycle Assessment of a Blade Bridge, Angela Nagle

Paul Leahy presented Angela Nagle's research into the life cycle sustainability assessment of pedestrian bridges made from discarded wind turbine blades. [Profile](#), [Poster](#), [Video](#).

3.7 Wind Blade Repurposing, Lawrence Bank

Lawrence Bank explored what is meant by end-of-life and what were the various possible ways of processing wind turbine blades after their use on turbines. The focus of the presentation was on the various designs for repurposing blades. [Profile](#), [Slides](#), [Video](#)

3.8 A Sustainable Circular Economy for Wind: The Bigger Picture, Anne Velenturf

Anne Velenturf presented recent research looking into the circularity of wind energy. The presentation included the topics of how society would change to become circular. [Profile](#), [Slides](#), [Video](#).

4 Relevant Conclusions for Wind Value

The event achieved the following objectives of the Wind Value project :

- There are several ways to define end-of-life. The end of planning permission is a useful well-defined measure.
- Blade Bridges are a practical and environmentally useful way to use decommissioned blades.
- Links with the [Re-Wind](#) project and [IEA Wind Task 45](#) were strengthened.
- Many connections were made with industry representatives.
- At present it costs owners to dispose of wind turbine blades, that is, the value of the recycled or repurposed products does not exceed the cost of processing the blades from the turbines.
- There is a great deal of research in progress trying to improve blade repurposing and recycling.

Acknowledgments

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Wind Value would like to thank Helen McMahon of the Environmental Research Institute for helping organize the day.