



Our 2050

→→The Our 2050 project has been focusing on the business opportunities in the transition towards a low carbon economy. This impact statement summaries some of the impacts and achievements of this research, in terms of:

1. The closer integration between research and policy
2. The engagement with industry to identify emerging business opportunities from this transition and how they can be realised
3. The strengthening of the multi-disciplinary research capabilities within the research team at the SFI MaREI centre

Each of these three areas show clear impacts from the NTR foundation funding.

The closer integration between research and policy on the low carbon transition

1. For more than 10 years Ian Hughes has been working on innovation policy in Ireland, working now with the Department of Business, Enterprise and Innovation. The Our 2050 project has allowed Ian to complement his policy work with the Department by working two days a week, in a dual appointment, as a Senior Research Fellow with the SFI MaREI centre. This is an innovative arrangement, supported by the Department of Business, Enterprise and Innovation, that has caught the attention of Ian's colleagues at the OECD, which he visits regularly, as potentially a new model for knowledge exchange between government and public research.
2. One of the ways that Our 2050 project has been integrating research from the SFI MaREI centre into the policy system has been through a series of policy seminars and policy briefs organised in collaboration with the Department of Foreign Affairs and Trade. These policy seminars bring together policy makers from across government, including the Department of Communications, Climate Action and Environment, the Department of Agriculture, Food and Marine, the Department of Transport, Tourism and

Sport, and the Department of the Taoiseach, as well, of course, as the Department of Business, Enterprise and Innovation. The aim is to allow policy makers, researchers and other stakeholders to discuss together the challenges involved in the systemic changes they are facing as a result of climate change. The policy briefs produced to date have addressed the challenges of long term planning, the effective use of research for policy, setting visions for long term change, and monitoring and evaluating large scale system change.

3. Just one example of how the system innovation thinking promoted by MaREI is having an impact is the fact that the Government's National Statement on the Bioeconomy, and the Bioeconomy Implementation Group established to drive the development of the bioeconomy in Ireland, is explicitly adopting a system innovation approach. Bioenergy is expected to play a vital role in Ireland's transition to a bioeconomy.

The engagement with industry to identify emerging business opportunities from low carbon transition

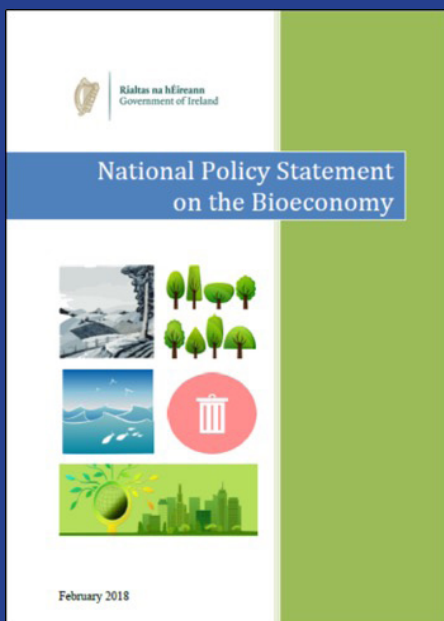
One of the key benefits of the funding MaREI has received from NTR Foundation is that it's helped us to support enterprise as they engage in the energy transition. Three examples of MaREI supporting enterprise are:

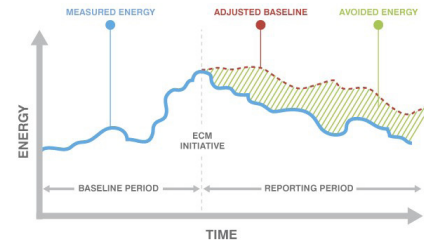
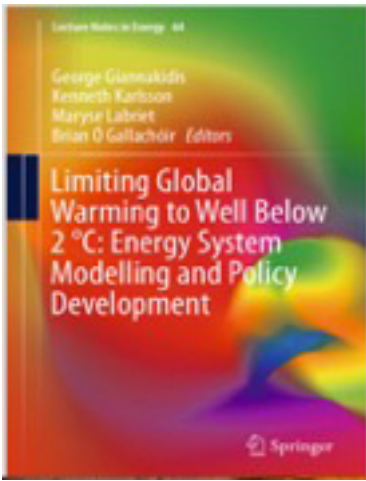
1. MaREI supporting energy industry partners in strategic planning for engaging with the energy transition. This includes contributing to ESB's brighter future strategy anchored in the analytical dimensions of the solution and Ervia's emerging ambitions for renewable gas and carbon capture and storage. In addition to directly informing these strategies, a novel element of our support was annual knowledge exchange workshops that we have organised separately with ESB and Ervia. This provides them with the latest insights from our research. It also provides us with an industry perspective on our analysis that we use to sense check some of our findings.
2. MaREI supporting local enterprises - engagement with Energy Cork. Energy Cork is an industry driven cluster in the Cork area focusing on generating economic value from the energy

sector. One successful collaboration focuses on decarbonising transport, initially through the Drive4zero electric vehicle promotion campaign and more recently with Ireland's greenest bus fleet, focussing on moving bus transport in Cork from diesel over to biogas. This has involved working with the public and private partners within Energy Cork to achieve this goal.

3. MaREI supporting enterprise from design to full scale a final example of our support for enterprise is the example of Ocean Energy a small enterprise from Cobh. MaREI supported them in their initial design of a wave energy device in Cork, testing model scale versions of the device in our laboratories, monitoring scaled up versions in Galway Bay Test site. Ocean Energy are currently employing people in Portland Oregon to develop a wave energy device that will be deployed in the naval base in Hawaii next year.

These examples show how SFI MaREI centre has supported enterprise in extracting value from and harnessing the economic opportunity that's available from the energy transition and it would have been possible without the funding we received and support from NTR Foundation.





The strengthening of the multi-disciplinary research capabilities within the research team at the SFI MaREI centre

The resources from the NTR Foundation have enabled the research team at the SFI MaREI centre to build up significant research capacity on the opportunities for the energy system in the low carbon economy

1. MaREI has developed the capacity to look at the risks and returns of different technologies and different technology portfolios as part of the low carbon transition. We're using uncertainty analysis to understand the cost and opportunities of these technologies as Ireland embarks on different pathways to comply with the Paris agreement. This research contributed to a book which formed part of the evidence base for the IPCC Special Report on 1.5 °.
2. MaREI is working with the International Renewable Energy Agency (IRENA) in Bonn and we're contributing to their understanding of how different energy technologies reduce their costs over time. We're using this analysis to bring insights from one set of technologies for example wind energy to other technology

such as wave energy and biogas in freight.

3. One of the areas that we've built up research capacity is on the opportunity from energy efficiency in industry. We know there's a great potential for energy efficient in industry, but there's a knowledge gap between the high-level policy requirements in terms of verifying reporting energy savings and the on-the-ground implementation challenges that energy managers face. We've worked with a number of companies in the local area to empower the energy managers there to make better decisions using more accurate measurements for the energy savings.

The research described in this impact statement wouldn't have happened without a generous grant of funding from the NTR Foundation. For more information about the projects see www.marei.ie/our-2050.

