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GREBE

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Business Enterprise

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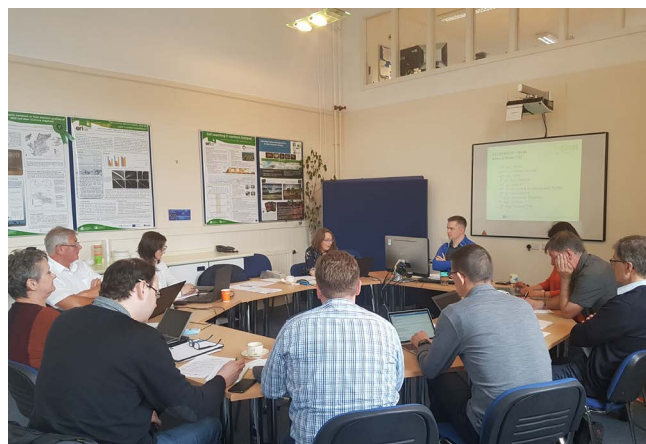
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WELCOME TO GREBE PROJECT E-ZINE

Welcome to the ninth e-zine for the GREBE Project. Since April we have continued to carry out the project activities and meet our objectives. Our 9th partner meeting in Thurso was hosted by the Environmental Research Institute (ERI) and included a site visit to the world famous Old Pultney distillery and Wick District Heating Scheme. It also included our final conference 'Local opportunities through Nordic cooperation' on Thursday 24th May 2018. Details may be found on page 2.

The Renewable Energy Resource Assessment (RERA) Toolkits for Biomass, Wind & Solar Energy are now complete and details may be found on pages 3 & 4. The WDC completed a Regional Heat Study for the Western Region of Ireland and held two workshops on how the WDC can support and develop biomass use in the Western region. Details can be found on page 5. We also have an update of the EES in partner regions on pages 6 & 7 and details of the Action Renewables 'Proposal for a renewable future' on page 8. We have details on the development of a database based on the Influence of Environmental Conditions in NPA and Arctic Regions on page 9. And finally, we have details of Technology/Knowledge Transfer Cases on page 10.





9th PARTNER MEETING IN THURSO & CLOSING EVENT

Thurso's Environmental Research Institute (ERI) recently hosted an open event looking at local opportunities through Nordic cooperation. The event invited delegates to learn about existing collaborative work being undertaken in Caithness and across the wider Highlands and Islands using local, natural resources in a sustainable way.

The event marked the final conference of the GREBE project and showcased the work undertaken locally, from technical reports, to a review of renewable energy policy. A particular highlight was the presentation of the Entrepreneur Enabler Scheme in Scotland which brought together mentors with renewable energy businesses to help overcome barriers or identify new commercial opportunities.

In addition to showcasing the GREBE project the event saw ten existing projects demonstrating how funding through the EU's Northern Periphery and Arctic Programme has resulted in real world impacts within remote and rural areas of northern Europe. The projects featured covered a range of topics including assisting the recruitment of healthcare professionals to rural regions, the protection of historical sites and buildings from the impacts of climate change, and development of ecotourism opportunities.

Delegates came with a wealth and depth of experience to share during world café discussions over lunch. Renewable energy engineers were joined by regional planners, researchers, representatives of the third sector as well as local politicians. The conference gave delegates an opportunity to learn about research going on in the region and linked project outputs with users.

Earlier in the week the GREBE project had been hosted by ERI for the final partner meeting. The two days of meetings were wrapped up with trip showcasing the Far North. Partners were invited to a tour of Caithness taking in Dunnet Head and John o' Groats before lunch at the 15th Century Ackergill tower. In the afternoon a flying visit to the world famous Old Pultney distillery and Wick District Heating Scheme prelude a boat trip down the east coast of Caithness where partners could view the 330 steps cut into the cliff at Whaligoe which lead to the venue for that evening's dinner.





Resource Assessment Toolkits - Biomass & Wind Energy

RESOURCE ASSESSMENT TOOLKIT FOR BIOMASS ENERGY

The Toolkit outlines best practice techniques for assessing biomass resource potentials as a foundation for a biomass resource assessment. Biomass resource assessment is indispensable in estimating the bioenergy potential in a given location, the social and environmental impacts accompanying the resources production and the economic viability of biomass utilization scenarios.

The scope of the Toolkit covers:

- Resource potential - theoretical, technical, economic or implementation potential
- Approaches for estimation of resource potential – (resource focused, demand driven or integrated approach)
- General principles, techniques and methods when undertaking a biomass resource assessment
- Forest biomass and methods for resource assessment
- Energy crops and methods for resource assessment
- Agricultural residues and methods for resource assessment
- Organic waste and methods for resource assessment
- Global and country specific tools to make preliminary resource assessment and how to use them

[GREBE Resource Assessment Toolkit for Biomass Energy \(July 2018\)](#)

RESOURCE ASSESSMENT TOOLKIT FOR WIND ENERGY

The Toolkit outlines best practice techniques for assessing wind resource potentials as a foundation for a wind resource assessment. The wind resource assessment entails industry-accepted guidelines for planning and conducting a wind resource measurement program to support a wind energy feasibility initiative. These guidelines do not embody every single potential technique of conducting a quality wind measurement program, but they address the most essential elements based on field-proven experience.

The scope of the Toolkit covers:

- Wind resource assessment 101
- Sitting of monitoring systems
- Measurement parameters and monitoring instruments
- Installation of monitoring stations
- Site operation and maintenance
- Data collection and management
- Data validation
- Data processing
- Comparison of observed wind data with historical norm
- Wind flow modelling

[GREBE Resource Assessment Toolkit for Wind Energy \(July 2018\)](#)





Resource Assessment Toolkits - Solar Energy

The Toolkit outlines best practice techniques for assessing solar resource potentials as a foundation for a solar resource assessment. Solar resource assessment is indispensable in estimating the solar potential in a given location, the social and environmental impacts accompanying the resources exploitation and the economic viability of solar utilization scenarios.

The scope of the Toolkit covers:

- Governing principles of solar energy
- Measuring Solar Irradiation
- Parameters for choice of optimal measurement station
- Data acquisition and quality control
- Solar radiation modelling – satellite-based models
- Applying solar resource data to solar energy projects
- Forecasting Solar Irradiation
- Best practices in on-site monitoring programmes

<http://grebepoint.eu/wp-content/uploads/2018/08/GREBE-Resource-Assessment-Toolkit-for-Solar-Energy-July-2018.pdf>





Regional Heat Study Workshops – Tuesday 15th May (Ballinasloe) & Wednesday 16th May (Ballybofey)

The Western Development Commission (WDC) along with the Sustainable Energy Authority of Ireland, were tasked to ‘complete a regional renewable energy analysis on the use of biomass as a local contribution to the national renewable heat target and develop a range of actions to support the development of renewable energy in the region’ under the Action Plan for Jobs.

The aim of this study is to inform how the WDC can support and develop biomass use in the Western region. This study is now complete and RE:HEAT presented their findings in two regional workshops in May. The first workshop was held on Tuesday 15th May at the Shearwater Hotel in Ballinasloe, Co. Galway, with the second hold the following day (Wednesday 16th May) at Jacksons Hotel in Ballybofey, Co. Donegal.

At the meeting, Steve Luker and Ben Tansey (RE:HEAT) and Paddy Donovan (DARE) presented their findings. Both workshops were well attended, with stakeholders present included employees of the WDC, Action Renewables, Fermanagh & Omagh District Council, as well as Bord na Mona, Teagasc, Udarás na Gaeltachta, the Local Enterprise Offices, IT Sligo, Galway-Mayo Institute of Technology, Letterkenny IT and many renewable energy businesses in the WDC region.

The completed study can be found on the GREBE Project website: <http://grebeproject.eu/wp-content/uploads/2018/05/WDC-Regional-Renewable-Energy-Analysis-May-2018.pdf>





UPDATE OF EES IN PARTNER REGIONS

EES – UPDATE IRELAND

The roll out of the EES in Ireland is currently taking place with 10 renewable energy business selected to participate in the scheme.

Many of the participants have taken part in other GREBE Project activities, including the GREBE Project launch and workshop in February 2016, business to business meetings with experts and the speed networking event in Enniskillen in November 2017, study tour to Kokkola, Finland in March 2018, and in GREBE Policy workshops in 2017 and 2018.

These include companies based throughout the WDC and NPA region, and are involved in different types of renewable energy technologies, including bioenergy and timber processing, installation of solar PV panels, external insulation, training energy efficient solutions and provision of analytical services for others in the renewable energy sector.

- **Celignis Ltd.** – a company who provide analytical services for the bioenergy and biofuels sectors.
- **Donegal Farm Relief Service Co-Op** – Anaerobic Digester plant developers.
- **Smart Renewables** - Energy Auditing, Consulting, Sustainable Products and Energy Management are the core targets of their business.
- **Eirbyte** – providers of green website hosting, and trainers on off-grid living and How to Build Your Own Wind Turbine.
- **Good Energies Alliance Ireland CLG** – an organisation who focus on research on energy and climate change policy, and undertake energy surveys and audits for communities, as well as the provision of seminars, workshops, conferences and courses.
- **McCauley Wood Fuels Ltd.** – W.F.Q.A approved wood fuel processor and biomass supplier.





UPDATE OF EES IN PARTNER REGIONS

- **McMorrow Haulage/McMorrow Harvesting Ltd.** – a haulage company who specialise in log haulage and harvesting since 1993 and processors and suppliers of firewood.
- **Sean Horan Ltd.** – a mechanical and electrical engineering company who install renewable energy systems.
- **Wood Pellet Stoves.ie** - a company who design, import and distribute throughout Ireland, a wide range of wood pellet stoves and provide commissioning training.
- **Woods Firewood Products Ltd.** – a W.F.Q.A approved wood fuel processor and supplier of firewood.

Experienced mentors, including some who participated in the EES pilot in Northern Ireland, are providing expert mentoring in the areas of business planning, development of new markets and client lists, sales and marketing plans, website & digital media advice, improvements in operating procedures, and human resource planning.



Sean Horan Ltd

Mechanical & Electrical Engineers

Ballintubber,

Claremorris,

Co Mayo

woodpelletstoves.ie





Action Renewables document highlights areas for improvement in North's renewable landscape

A leading company that provides renewable energy advice has released its latest policy document which outlines areas for improvement for the north's renewable landscape. 'Proposal for a renewable future' produced by Action Renewables, focuses on issues such as energy efficiency, green gas, renewable transport, security of supply, renewable heat and job security. Each focus comes with recommendation's which are aimed at encouraging debate within the sector and driving forward the development of new policies and goals.

The document emphasizes the growing threat to the renewables industry in the north highlighting the potential loss of more than 3,000 jobs in the sector due to a 'lack of clear policy and withdrawal of incentives'. According to the report one-third of total energy consumption in the north occurs through the transport sector with 94 per cent of this associated with petrol and diesel in road vehicles. The document also draws upon the possibility of imported fossil fuel prices rising post-Brexit and suggests generating renewable energy from local sources.

Action Renewables announced the launch of its most recent policy document at the European Energy Policy Forum which had over 100 delegates in attendance. Topics covered at the event included renewable energy opportunities for

SME's, hydropower energy recovery technology, and reductions in greenhouse gas emissions.

Michael Doran, managing director at Action Renewables said: "The large turnout for our first European Energy Policy Forum highlights the appetite in Northern Ireland to continue to develop and implement renewable energy technologies to help reach our renewable energy and greenhouse gas reduction targets.

Developed in 2010 with a ten-year implementation plan and 2020 targets for heat and electricity, the Strategic Energy Framework's deadlines are looming, and with the current policy vacuum in place within our government, Action Renewables has produced our most recent policy document to encourage conversation and continued growth within the sector to meet these targets and improve the long-term forecast for renewable energy in Northern Ireland.

"We look forward to stimulating debate and ultimately driving our renewables sector forward locally following distribution of this document and with the on-going work of our collaborative networking organisation, AREA, which provides expert renewable energy advice to members."

<https://actionrenewables.co.uk/resources/proposal-for-a-renewable-future-pdf.pdf>



The Influence of Environmental Conditions in NPA and Arctic Regions

The key requirement of this work package is the development of a database (and supporting summary report), compiling information for potential renewable energy business and technology solutions to help overcome environmental and climatic challenges in the NPA programme region. Technology solutions cover installation, operation and maintenance of equipment, not the design and manufacture of components.

The objective of the database is to identify the main environmental and climatic challenges, and outline technological and business solutions to these challenges, creating a database of these for 8 different categories of renewable energy technology. It is designed for use by new and existing renewable energy businesses, to inform them of the challenges they may face in developing their business and how these will be overcome. A range of examples (where available) have been highlighted on how the challenges identified have been overcome. Specific regional related innovations and smart

solutions from local business on technology driven RE-solutions have been documented, with the intention of passing on this knowledge to other regions in the NPA not involved in the GREBE Project.

The 8 renewable energy technology categories identified by the GREBE Project partnership are:

1. Biomass
2. Wind (Onshore only)
3. Solar PV
4. Solar Thermal
5. Hydro
6. Ground source heat pump
7. Air source heat pump
8. Anaerobic Digestion (farm scale/agricultural)

The database is located on the Renewable Business Platform (<https://www.renewablebusiness.eu/en/tools/database+of+climatic+challenges/>)



Technology/Knowledge Transfer Cases

One aim of the GREBE project is to promote knowledge sharing and information exchange between actors in renewable energy supply and demand. Transnational sharing of knowledge is a key element of GREBE and special focus of Work Package 7 in order to facilitate transnational effective knowledge transfer and collaboration in the RE business sector.

Two more case reports are now available on the transfer of technology and knowledge in the NPA:

Ecohog – Technology for the waste and recycling sector

Ecohog Ltd. is a family owned equipment manufacturer located in Co Tyrone, Northern Ireland. Although a small and medium-sized enterprise (SME), Ecohog is operating in a global scale and have over 20 years' experience supplying equipment to the waste and recycling sector.

Worldwide, there is a greater focus on minimising waste, reducing landfill waste and recycling in general. Therefore the need to integrate efficient waste separation and processing technology is a growing global concern. Also in Finland, the recovery of waste has become increasingly important. The technology transferred to Finland provides an alternative to manual sorting which is both exhausting and expensive. The technology allows customers to incorporate air separation into new or existing processing configurations that experience contaminants in the materials.

This is available on the GREBE Renewable Business Portal: www.renewablebusiness.eu and can be downloaded here: [Ecohog – Technology for the waste and recycling sector](#)

Innovative Hybrid Chipper for Forest Chip Production – a theoretical technology transfer case study

This report is about the innovative hybrid chipper for forest chip production and is a pure theoretical technology transfer case based on a simulation study using input data from the literature.

Several parameters to improve knowledge towards the transferring of the technology and applying it in other partner regions were the focus of this study on an innovative hybrid technology chipper. The focus was on the knowledge on fuel supply costs and supply system requirements for this technology in order to supports market access of new technology and to reduce the risks relating to long-term performance and costs for such technology through the used method. The method used was discrete-event simulation with the simulation of one year performance.

This is available on the GREBE Renewable Business Portal: www.renewablebusiness.eu and can be downloaded here: [Innovative Hybrid Chipper for Forest Chip Production](#)

All technology and knowledge transfer cases are supporting the activity towards a guideline supporting enterprises in introducing new to market energy solutions.

Supporting the transnational transfer of knowledge and technology, the Renewable Business Portal provides a platform to demonstrate the full potential of the renewable energy (RE) sector and showcase innovations in RE technology.



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About GREBE

GREBE is a €1.77m, 3-year (2015-2018) transnational project to support the renewable energy sector. It is co-funded by the EU's Northern Periphery & Arctic (NPA) Programme. It will focus on the challenges of peripheral and arctic regions as places for doing business, and help develop renewable energy business opportunities provided by extreme conditions.

Project Partners

GREBE is operated by eight partner organisations across six regions

