TUS

Anna Connaughton,
Enterprise Engagement Officer
Technological University of The Shannon (TUS)

Rialtas na hÉireann
Government of Ireland

Arna chomhchistiú ag an Aontas Eorpach

Co-funded by the European Union

Tionól Réigiúnach an Deiscirt
Southern Regional Assembly

HEA | An tÚdarás um Ard-Oideachas
The Higher Education Authority

TUS RISE is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme 2021-27.

Technological University of the Shannon - Who we are

Graduate's:
3,500 graduates every year / 16,000 students
Computing, AI, Engineering, Business and Data Analytics
Work placement opportunities

Research:
€23M Annual research income
Applied research solving industry challenges
Enterprise Ireland Technology Gateways
Industry-funded projects

Regional Reach:
Seven campuses
Strong links with employers throughout the Midlands and Midwest

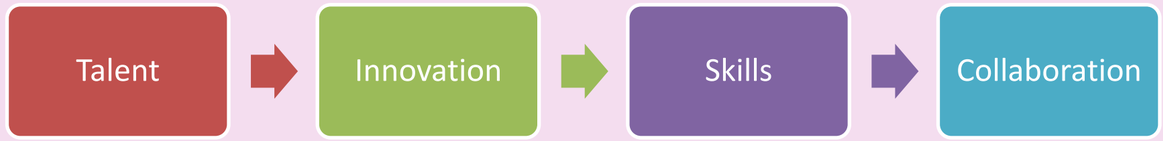


TUS Locations



The Role of a TU

- Practical orientation
- Access pathways
- Agility to industry and learner needs
- Practical and applied research – both knowledge creation and knowledge sharing
- Graduates professionally and technically skilled as an outcome of their programme of study
- Balance between theoretical and the applied understanding; as a TU, extra emphasis on students' applied understanding



TUS

QS RATED EXCELLENT



TUS

Faculty of Engineering & Technology

Faculty of Science and Health

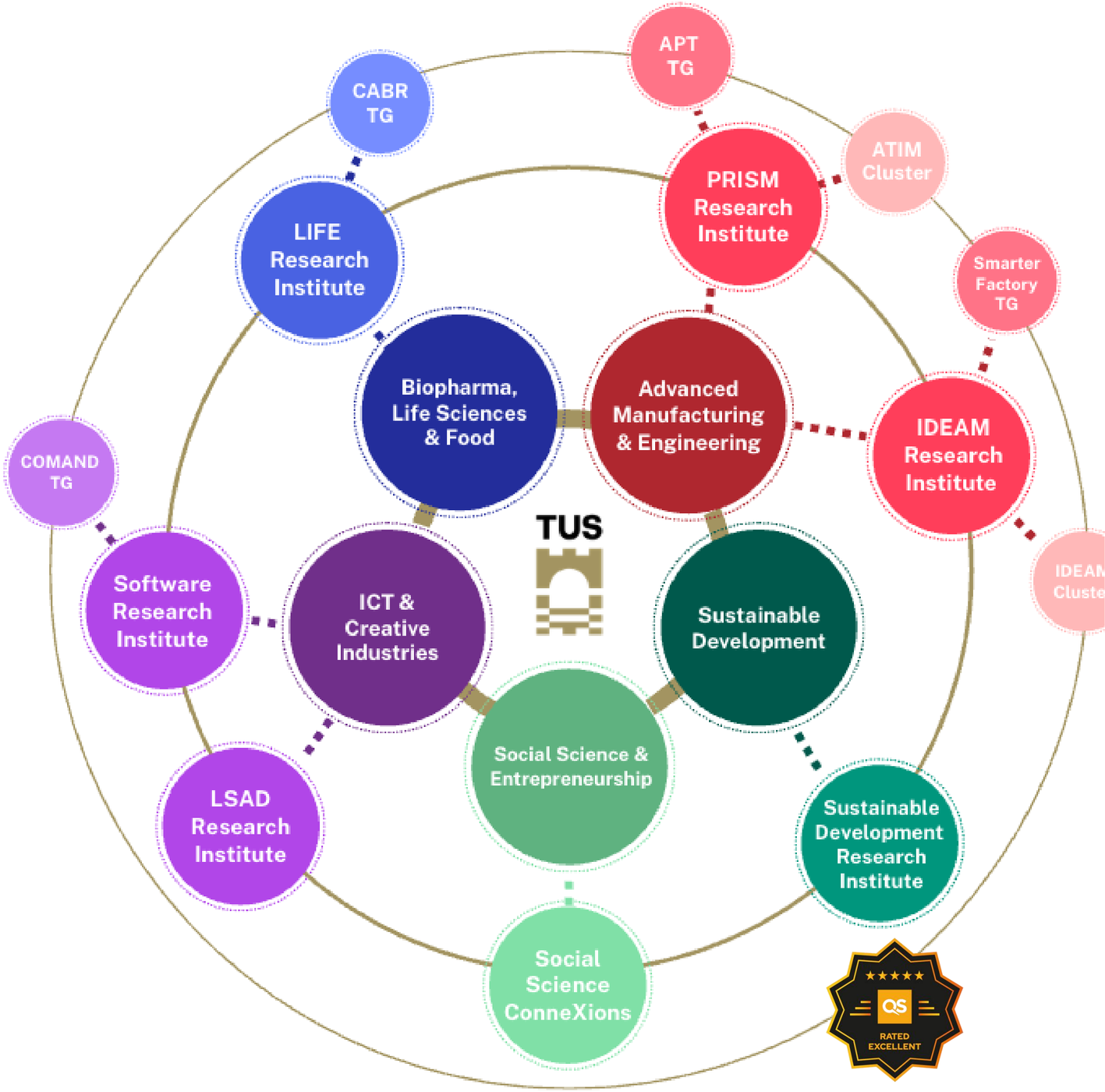
Faculty of Business and Hospitality

Limerick School of Art and Design





TUS Research Institutes, Technology Gateways and Industry Clusters



TUS



RUN-EU Regional University Alliance

Key Metrics

Joint Degrees
Joint Research

European University Designation

Micro Credentials & Short Advanced Programmes

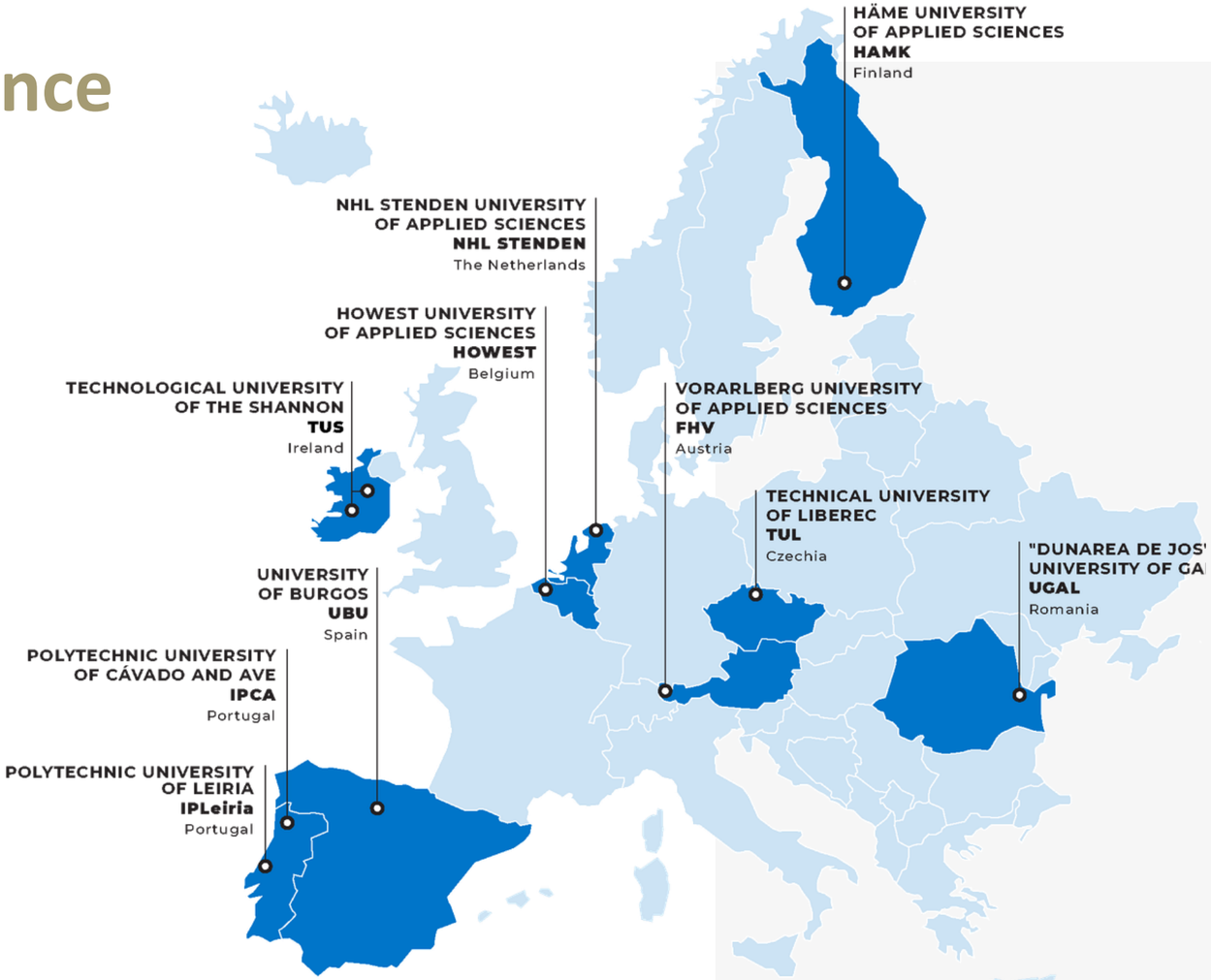
11,600+
Staff

115,000+
Students

148
Research Organisations

21
NGOs

40
Associated Partners





RESEARCH OUTPUTS OF NEIL J. ROWAN

Driving Sustainability, Bioeconomy Innovation and Regional Impact

Neil J. Rowan

Professor of Microbiology & Bioeconomy Innovation

Technological University of the Shannon (TUS), Ireland

Professor Neil J. Rowan's research advances sustainability through circular bioeconomy systems, peatland innovation (paludiculture), aquaculture, food systems and environmental biotechnology, delivering real-world impact for climate, nature and communities.

TUS
Technological University of the Shannon

RESEARCH OUTPUTS – AT A GLANCE

~300	Peer-reviewed publications
~10,000+	Citations (Scopus)
h-index 57	(Scopus)
43	PhD students supervised
18	Postdoctoral researchers mentored
14	MSc by Research supervised
24	First-time PhD supervisors mentored
€43M+	Research funding generated since 1996

Sources: TUS Research Profiles (2024–2025); Scopus (May 2025)

CORE RESEARCH THEMES & KE Y OUTPUTS

1. CIRCULAR BIOECONOMY

- Circular production systems
- Waste valorisation
- Bio-based products

Key Outputs

Frameworks and models for circular value chains and resource efficiency

2. PEATLAND INNOVATION & PALUDICULTURE



- Paludiculture systems
- Integrated Multi-Trophic Aquaculture (IMTA)
- Rewetted peatland use

Key Outputs

Peer-reviewed papers, concepts and demonstrator designs for wetland productivity and carbon smart land use

3. SUSTAINABLE FOOD & PROTEIN SYSTEMS



- Duckweed & macroalgae
- New feed & food ingredients
- Alternative protein sources

Key Outputs

Studies on cultivation, nutritional value, product development and supply chain potential

4. AQUACULTURE & CIRCULAR NUTRIENTS



- IMTA for nutrient capture
- Water quality improvement
- Resource recovery

Key Outputs

Research on nitrogen & phosphorus removal and biomass production from waste streams

5. ENVIRONMENTAL BIOTECHNOLOGY



- Microbial processes
- Decontamination & safety
- Environmental monitoring

Key Outputs

Publications and applied solutions for clean water, biosecurity and ecosystem health

6. DIGITAL & SYSTEMS INNOVATION



- Digital monitoring
- Data-driven decisions
- Systems optimisation

Key Outputs

Development of digital tools and integrated platforms for bioeconomy demonstration

FLAGSHIP RESEARCH PROGRAMME



MOUNT LUCAS BIOECONOMY AQUACULTURE INITIATIVE

Lead PI – €5 million investment
Mount Lucas, Co. Offaly, Ireland

- Commercial-scale bioeconomy demonstrator
- Aquaculture, duckweed, algae, waste valorisation
- Supports companies, entrepreneurs, jobs and regional development

Bridging research to real-world impact through demonstration, innovation and industry collaboration.

PUBLICATIONS BY RESEARCH THEME



Environmental Biotechnology	27%
Bioeconomy & Circular Systems	22%
Aquaculture & IMTA	18%
Microbiology & Decontamination	15%
Food & Protein Systems	10%
Other Interdisciplinary Areas	8%

Outputs include:

Journal articles · Conference papers · Book chapters · Reports & policy briefs

IMPACT & CONTRIBUTION

- Advances sustainable bioeconomy and circular systems that reduce waste and enhance resource efficiency.
- Pioneers peatland-based innovation and paludiculture, linking restoration with productive, low-carbon land use.
- Drives regional Just Transition through jobs, skills, entrepreneurship and innovation ecosystems.
- Informs policy and practice on sustainability, bioeconomy and climate-smart solutions.
- Builds research capacity and next-generation leaders for a sustainable future.

OVERALL IMPACT

Transforming research into solutions for a circular, regenerative and climate-resilient future – delivering knowledge, innovation and real-world benefits for society, the environment and the economy.

CONTRIBUTION TO UN SUSTAINABLE DEVELOPMENT GOALS

2 ZERO HUNGER · 6 CLEAN WATER AND SANITATION · 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE · 12 RESPONSIBLE CONSUMPTION AND PRODUCTION · 13 CLIMATE ACTION · 14 LIFE BELOW WATER · 15 LIFE ON LAND · 17 PARTNERSHIPS FOR THE GOALS

IRELAND'S JUST TRANSITION JOURNEY

From Peat Dependency to a Green, Innovative and Resilient Midlands Economy

FOUR STAGES OF THE JOURNEY

1 PEAT DECLINE

Peat extraction and peat-fired electricity were central to Midlands jobs and communities. Decarbonisation creates concentrated impacts.

2 IMMEDIATE RESPONSE

Support for affected workers, enterprises and communities facing job losses and economic disruption.

3 REGIONAL TRANSITION

Shift towards skills, enterprise, peatland restoration, infrastructure, diversification and sustainable mobility.

4 TRANSFORMATIVE JUST TRANSITION

Using EU and national investment to create a greener, innovation-led and more resilient Midlands economy for the long term. (Implementation to 2027 and beyond)

WHY THE MIDLANDS?

Transition away from peat has the greatest socio-economic impact here.



Ecosystem affected:

- Workers and families
- Local suppliers & SMEs
- Peat-dependent towns
- Degraded peatlands
- Former industrial assets
- Transport & accessibility
- Skills, entrepreneurship & new opportunities

Consultations identified four interconnected needs: modern business & jobs, skills, environmental & industrial heritage, and a stronger place to live and work.

EU AND NATIONAL INVESTMENT: JUST TRANSITION FUND

€84.5 million from the EU Just Transition Fund

Up to €169 million with national co-financing

Investment period 2021–2027

DESIGNATED TERRITORY

Laois • Longford • Offaly • Roscommon • Westmeath
Ballinasloe MD (Galway) • Athy & Clane–Maynooth MD (Kildare)
Carrick-on-Suir & Thurles MD (Tipperary)

Managed by the Eastern and Midland Regional Assembly (EMRA)

THREE PILLARS OF THE MIDLANDS PROGRAMME

1. ECONOMIC DIVERSIFICATION & EMPLOYMENT

Support for SMEs, start-ups, green jobs, research & innovation, training & upskilling, sustainable agriculture & forestry, renewable & affordable green energy, tourism and new enterprise.

2. PEATLAND RESTORATION & REGENERATION

Restoration of degraded peatlands and repurposing of industrial heritage assets to deliver environmental, economic, tourism, research and biodiversity benefits.

3. CONNECTIVITY & SUSTAINABLE MOBILITY

Smart and sustainable mobility solutions to ensure people and communities can access new jobs and opportunities across the region.

THE GOAL: A DIVERSIFIED, RESILIENT, LOW-CARBON MIDLANDS ECONOMY

Peat-dependent regional economy → Rapid decarbonisation & employment disruption → Worker & community supports → Skills + Enterprise + Innovation + Peatland Restoration + Mobility → Goal: A greener, innovation-oriented & resilient Midlands economy

SUCCESS WILL BE MEASURED BY (FROM 2026 ONWARD)

- Sustainable jobs created & retained
- Former peat workers in employment
- New SMEs surviving & growing
- Private investment leveraged
- Skills, qualifications & training outcomes
- Peatland rehabilitation & biodiversity
- Accessibility & mobility improvements
- Research, innovation & enterprise capacity
- Demographic resilience of communities
- Equitable outcomes for affected communities

THE BIGGER PICTURE Ireland's Just Transition is about more than funding projects. It is a long-term regional transformation that combines social equity, economic opportunity, environmental restoration and innovation to ensure no community is left behind in the journey to climate neutrality.



Thriving Peatlands
Stronger Regions
Better Future

PEATLANDS RESTORATION IN IRELAND

A NATURE-BASED SOLUTION FOR REGIONAL DEVELOPMENT

Restoring Ireland's peatlands is not only essential for climate and biodiversity, it is a powerful driver of sustainable regional development for communities and economies.

CLIMATE ACTION | NATURE RECOVERY | COMMUNITY BENEFIT | REGIONAL GROWTH

THE ROLE OF PEATLANDS

CARBON STORAGE
Peatlands store twice as much carbon as all of Ireland's forests.

WATER MANAGEMENT
They act like sponges, reducing flood risk and improving water quality.

BIODIVERSITY HAVEN
Home to unique plants, wildlife and protected species.

CULTURAL HERITAGE
Peatlands are part of Ireland's natural and cultural identity.

THE CHALLENGE

Decades of drainage, extraction and burning have degraded Ireland's peatlands.

- High greenhouse gas emissions
- Loss of biodiversity
- Poor water quality and flooding
- Limited economic opportunities in some rural areas

THE RESTORATION JOURNEY

DEGRADED PEATLAND
Drained, cut or burned for fuel, farming or development

→

RESTORATION ACTIONS
Rewetting, blocking drains, reprofiling, re-vegetation and habitat creation

→

RECOVERY
Rising water levels, peat formation resumes, habitats return

→

THRIVING PEATLAND
Resilient ecosystems that deliver climate, biodiversity and community benefits



RESTORATION DRIVES A POSITIVE REGIONAL IMPACT

Lower emissions
Ireland meets climate targets

Richer biodiversity
Healthier ecosystems and wildlife

Cleaner water & flood resilience
Reduced flood risk and better water quality

Sustainable rural economy
New income streams and enterprise

Attracts investment
Supports regional growth and innovation

Inclusive development
Benefits reach local communities

FROM RESTORATION TO REGIONAL DEVELOPMENT

Healthy peatlands create the foundation for stronger, more resilient regions.

GREEN JOBS & SKILLS
Restoration projects create local jobs and build skills in ecology, surveying, construction and land management.

NATURE-BASED TOURISM
Healthy landscapes attract visitors for walking, birdwatching and outdoor recreation.

SUSTAINABLE LAND USE
Supports eco-friendly farming, forestry, fisheries and outdoor industries.

INNOVATION & RESEARCH
Living labs for climate solutions, research, education and knowledge exchange.

STRONGER COMMUNITIES
Better wellbeing, local pride and opportunities for young people to live and work locally.

EXAMPLES OF REGIONAL BENEFITS



Peatland restoration across the Midlands and other regional areas can:

- Revive local economies
- Strengthen climate resilience
- Create vibrant, nature-rich places to live and work
- Leave a lasting legacy for future generations

HEALTHY PEATLANDS. STRONGER REGIONS. BETTER FUTURE.
Investing in peatlands restoration is investing in Ireland's climate, nature and people.

PARTNERSHIP Working together | INVESTMENT Smart and targeted | ACTION On the ground | MONITORING Measuring progress | LEGACY For generations

PEATLAND INNOVATION (PALUDICULTURE) IN IRELAND

Growing prosperity on wet peatlands – sustainable production with climate, nature and community benefits

WHAT IS PALUDICULTURE?

Paludiculture is the productive use of rewetted peatlands. It keeps the peat wet, protects it from further degradation and creates valuable products and jobs.

WHY IT MATTERS

Irish peatlands store huge amounts of carbon and support biodiversity and water quality. Innovative wetland farming can deliver a low-carbon future.

WHERE IN IRELAND?

Potential across the Midlands and Border region and other lowland peatlands where water can be retained and managed.

PALUDICULTURE OPTIONS: DIFFERENT INNOVATIONS FOR WET PEATLANDS

1 REED (COMMON REED)

(Phragmites australis)



Fast-growing native reed harvested for a range of uses.

EXAMPLES OF PRODUCTS

Thatch for roofing · Biomass for heat · Board & insulation · Paper & packaging

ADVANTAGES

- High productivity
- Well-established uses & markets
- Provides habitat for wildlife
- Good carbon benefits when peat remains wet
- Versatile product applications

DISADVANTAGES / CHALLENGES

- Harvesting & transport can be costly
- Machinery access can be difficult on very wet sites
- Quality depends on timely harvest and processing infrastructure

2 SEDGES

(Carex spp.)



Native sedges well adapted to wet conditions.

EXAMPLES OF PRODUCTS

Livestock bedding · Horticultural growing media · Erosion control & coir-like materials

ADVANTAGES

- Excellent for very wet conditions
- Low nutrient & fertiliser needs
- Supports biodiversity & water quality
- Potential for local, small-scale rural enterprises

DISADVANTAGES / CHALLENGES

- Lower yields than some crops
- Limited large-scale markets at present
- More R&D needed on processing and product quality

3 PEAT MOSS (SPHAGNUM)

(Sphagnum spp.)



Rewetting supports natural sphagnum growth or can be cultivated.

EXAMPLES OF PRODUCTS

Horticultural peat-free composts · Growing media · Erosion control & restoration

ADVANTAGES

- High water retention
- Excellent for peat-free products
- Strong climate & biodiversity benefits
- Potential for high-value markets

DISADVANTAGES / CHALLENGES

- Slow to establish and scale up
- Labour-intensive harvesting
- Markets still developing in Ireland
- Quality control important

4 WETLAND WOOD / SHRUBS

(Willow, Alder, Birch)



Trees and shrubs grown on wet soils (coppice or short-rotation).

EXAMPLES OF PRODUCTS

Biomass for energy · Timber & poles for construction · Craft & furniture

ADVANTAGES

- Perennial crop – long-term income
- Good for water management & flood resilience
- Habitat for birds and wildlife
- Wood products have many uses

DISADVANTAGES / CHALLENGES

- Returns take time (years)
- Requires good water level management
- Initial establishment costs

5 WETLAND FODDER CROPS

(Reed canary grass, Fescue, Meadowsweet, etc.)



Selected grasses and herbs for livestock feed on wet soils.

EXAMPLES OF PRODUCTS

Silage · Hay · Grazed forage

ADVANTAGES

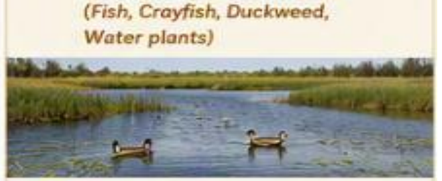
- Supports local livestock systems
- Can be integrated with grazing
- Maintains open wetland habitat
- Relatively low input systems

DISADVANTAGES / CHALLENGES

- Seasonal productivity
- Waterlogged conditions can limit grazing windows
- Care needed to avoid soil damage when too wet

6 AQUACULTURE & WETLAND PRODUCTS

(Fish, Crayfish, Duckweed, Water plants)



Using clean wetland waters for aquaculture and plant-based products.

EXAMPLES OF PRODUCTS

Fish & crayfish · Duckweed protein · Water plants

ADVANTAGES

- High nutritional value products
- Efficient use of water resources
- Can diversify farm income
- Potential for novel green markets

DISADVANTAGES / CHALLENGES

- New sector – skills & knowledge needed
- Requires good water quality & management
- Infrastructure & regulation requirements

CROSS-CUTTING BENEFITS OF PALUDICULTURE

- Keeps peat wet – reduces CO_2 emissions
- Improves biodiversity & habitat
- Enhances water quality & flood regulation
- Creates rural jobs & new green businesses
- Supports a just transition for peatland regions

KEY FACTORS FOR SUCCESS

- Maintain high water tables
- Match crop to site conditions
- Invest in harvest, processing & value chains
- Research, innovation & demonstration
- Supportive policy & finance
- Work with communities & landowners

THINGS TO CONSIDER (GENERAL)

- High initial investment and market development needs
- Longer timeframes for some systems
- Need for ongoing water level management
- Risks from droughts, extreme floods and pests
- Supply chain and market certainty are crucial for scale-up

Paludiculture offers Ireland a pathway to producer goods while restoring our peatlands.

By keeping peatlands wet and productive, we can build a climate-resilient, nature-rich and prosperous future for rural communities.

Key: Advantage · Disadvantage/Challenge

Circular IMTA Demo

Rialtas na hÉireann
Government of Ireland

Arna chomhchistiú ag an Aontas Eorpach

Co-funded by the European Union

Tionól Reigiúnach Oirthir agus Lár-Tíre
Eastern and Midland Regional Assembly

BIM Ireland's Seafood Development Agency

VIDZEME PLANNING REGION | 22 SEPTEMBER 2026

From Peat to Possibility: Mount Lucas and a Place-Based Just Transition

Sharing the Offaly experience with Vidzeme Planning Region, Latvia



Cian O'Reilly | CIRCULAR-IMTA-DEMO | Mount Lucas, Co. Offaly

The CIRCULAT-IMTA-DEMO Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund Programme 2021-2027

TUS Technological University of the Shannon: Midlands Midwest
Ollscoil Teicneolaíochta na Sionainne: Lár Tíre Iarthar Láir

UCC University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

eagasc Agriculture and Food Development Authority

Indigo Rock Marine Research Station

Ollscoil na Gaillimhe University of Galway

Derilinx Drive Decision-Making. Inspire Change



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BIM Ireland's Seafood Development Agency

PLACE-BASED JUST TRANSITION

Place first: Mount Lucas, Offaly

A former peat landscape is becoming a platform for new food, skills, research and enterprise.

Ireland

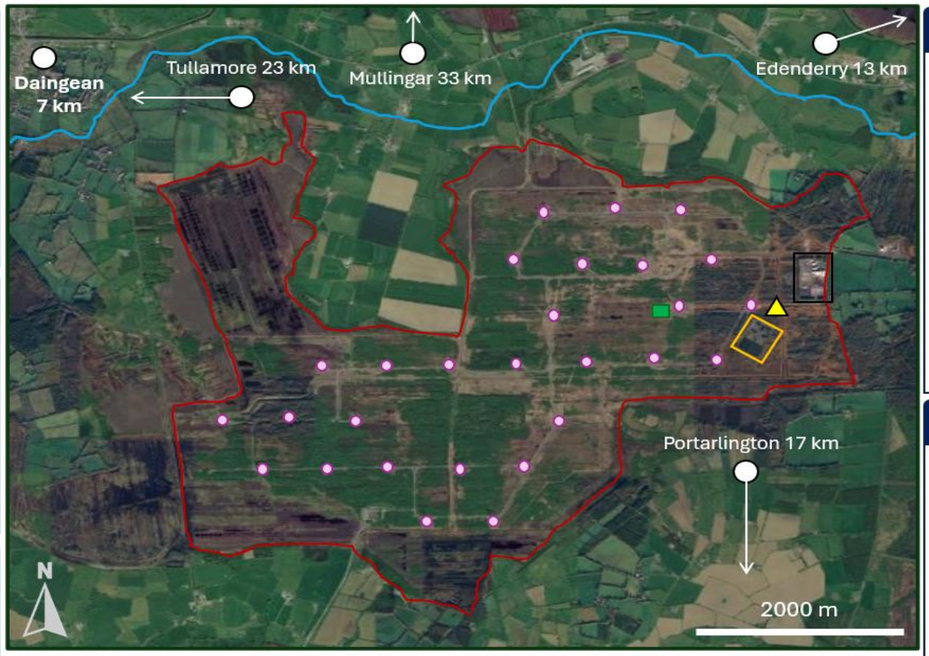


Midlands Region



Site Context

- **Location:** Co. Offaly, Irish Midlands.
- **Site Area:** ~1100 ha.
- **Nearest Towns:** Daingean (7 km), Edenderry (13 km).
- **Catchment:** Barrow (sub-catchment Figile)
- **Landscape:** Industrial cut-away raised bog undergoing restoration.



The site lies within a 28-turbine wind farm installed in a cut-away raised bog (undergoing restoration) landscape with hydrological connectivity to the Phillipstown River. Surrounded land uses include renewable energy agriculture, forestry and scattered settlements.

Legend

- Peatland Boundary – ~1100 ha.
- Site Boundary – 5.4 ha.
- Phillipstown River
- Wind Turbine
- Nearby Towns
- Sensory Garden
- Discovery Centre
- NCTC

Map Information

Coordinates:
53.2744° N
7.2464° W
53° 16' 28" N
7° 14' 47" W

Data Sources:
- GIS-EPA
- Bord na Mona
- NPWS & IPCC
- Tailte Eireann

Date: July 2026

1 Land

5.4 ha demonstration site within a much larger post-peat landscape, alongside wind energy and restoration.

2 People

A Just Transition needs visible local benefit: skills, enterprise, learning and reasons for people to stay and invest.

3 New use

CIRCULAR-IMTA-DEMO adds a circular bioeconomy testbed to a landscape once defined mainly by extraction.

Site map supplied for Mount Lucas. The project starts with the assets, history and needs of the place.

The CIRCULAT-IMTA-DEMO Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund Programme 2021-2027

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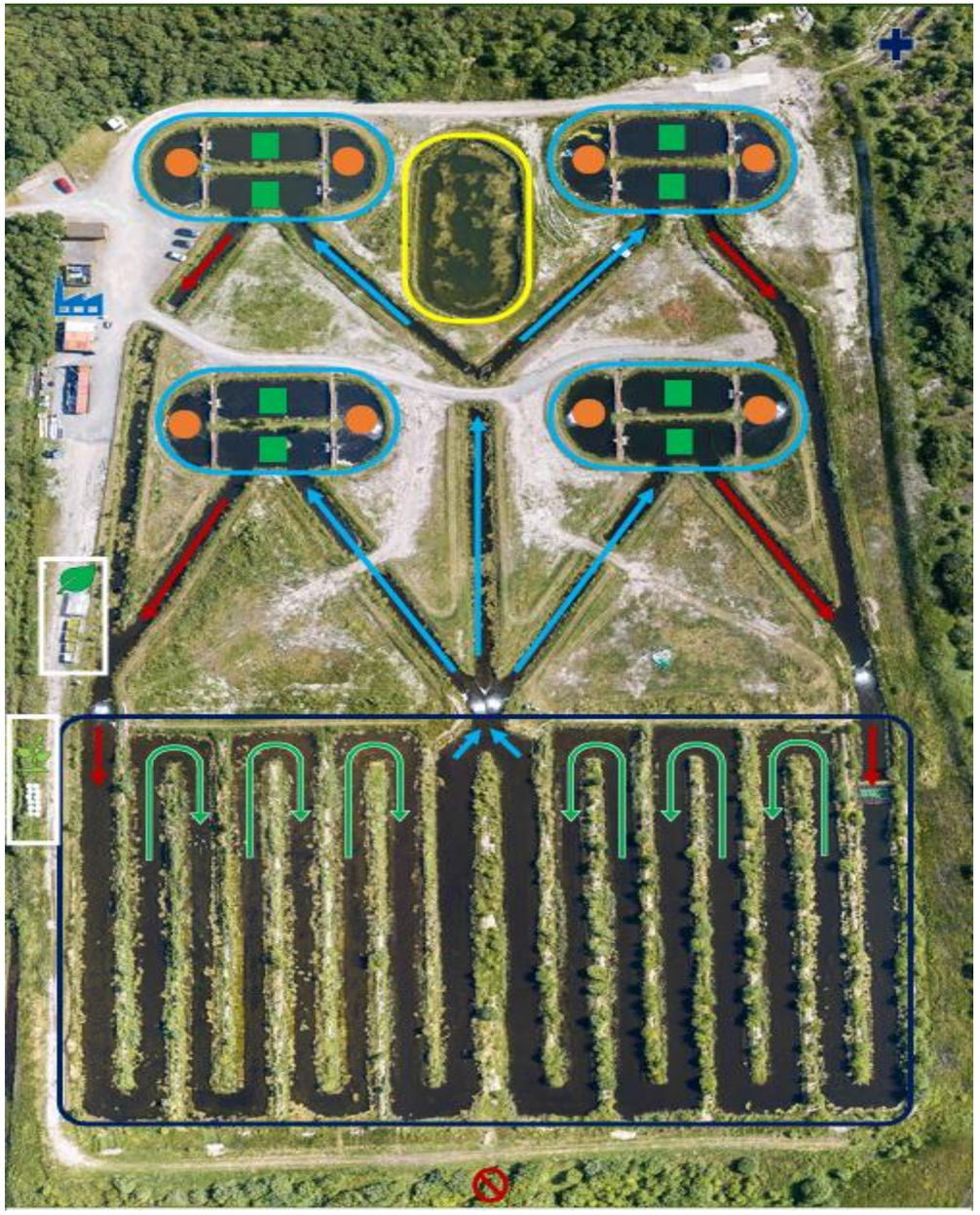
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eagasc Agriculture and Food Development Authority

Indigo Rock Marine Research Station

Ollscoil na Gaillimhe University of Galway

Derilinx Drive decision-making. Inspire change



- Water Intake Point
- D-end culture compartment
- Reservoir
- Aquaculture Ponds
- Water Flow – Nutrient Rich
- Water Flow – Nutrient Free
- 16 Channel Water Treatment Lagoon
- Water Flow - Bioremediation
- Solid Waste Settlement Compartment
- Discharge Point
- Macroalgae Nursery
- Duckweed Nursery
- Biorefinery





Fish → nutrient-rich water → duckweed → cleaner water → new products

DUCKWEED

Why are we using duckweed?

It is a tiny floating plant that turns nutrients in water into useful biomass.





1 Fast growth

Rapid biomass production when light, temperature and nutrients are suitable.

2 Water treatment

Takes up nitrogen and phosphorus from the water as it grows.

3 New products

Potential feed ingredients, protein and other bio-based fractions.

4 Circular fit

Uses nutrients from the aquaculture system instead of treating them only as waste.

Mount Lucas project data: duckweed is approximately 35% protein on a dry-matter basis.

The CIRCULAT-IMTA-DEMO Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund Programme 2021-2027

JUST TRANSITION STRATEGY

The project is bigger than the technology

Our aim is to build a local ecosystem around the demonstration site.



Local authorities + research + enterprise + community

People & place

Start with local needs, identity and visible benefit.

Skills & education

Build practical green skills and learning pathways.

Enterprise & research

Test ideas, reduce risk and create commercial pathways.

Policy & replication

Turn evidence into better decisions and transferable models.

A successful transition leaves local capability behind.. not only a completed project.

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Derilinx Drive Decision-Making. Inspire Change

BUILD THE PIPELINE FROM OFFALY OUTWARDS

Local first, then regional, national and European

We start with Offaly, then connect local evidence and opportunities to larger networks.

1

Offaly

Mount Lucas + local authority + LEO + communities + SMEs

2

Midlands

Just Transition region + green skills + enterprise + regional policy

3

Ireland

TUS + BIM + DAFM + research networks + national industry

4

Europe

Vidzeme + ECESP + GBS + Horizon / Interreg + replication partners

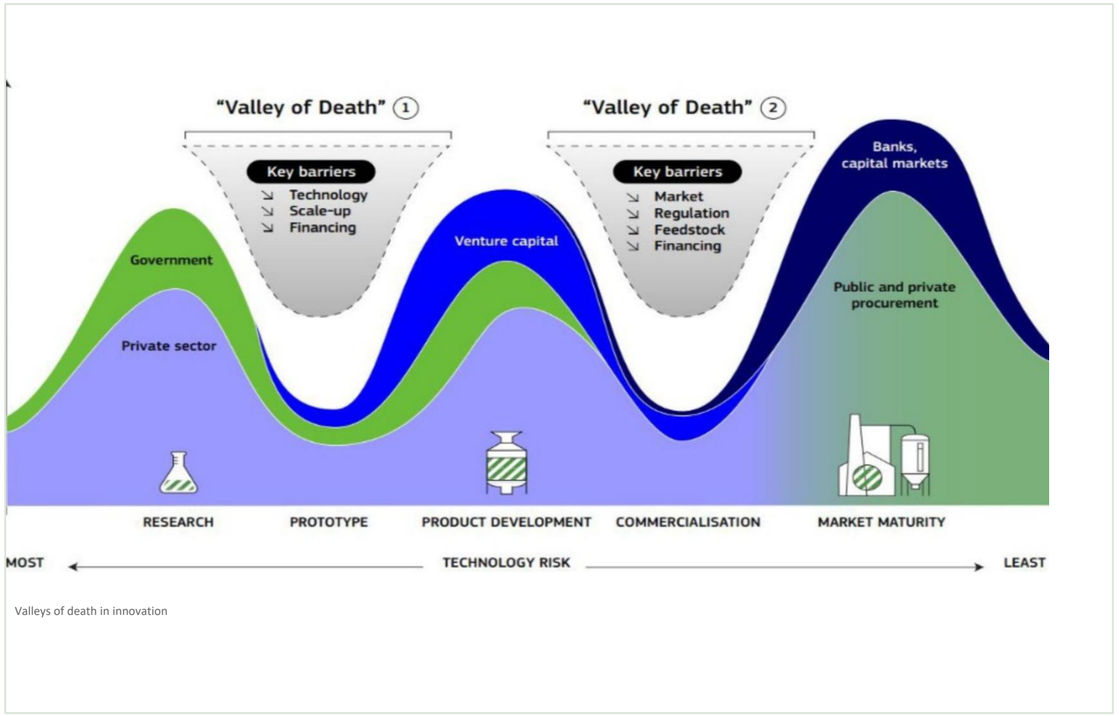
The pipeline moves both ways: local ideas travel out; knowledge, partners and investment come back in.

Place-based growth: local → regional → national → European, without losing the local purpose.

LIVING LAB + COMMERCIALISATION

A real site helps cross the valley of death

Companies and researchers can test ideas at a scale that is closer to real use.



Valleys of death in innovation

For companies

test bio-based, circular, water and environmental solutions

For researchers

validate science with real-world operating data

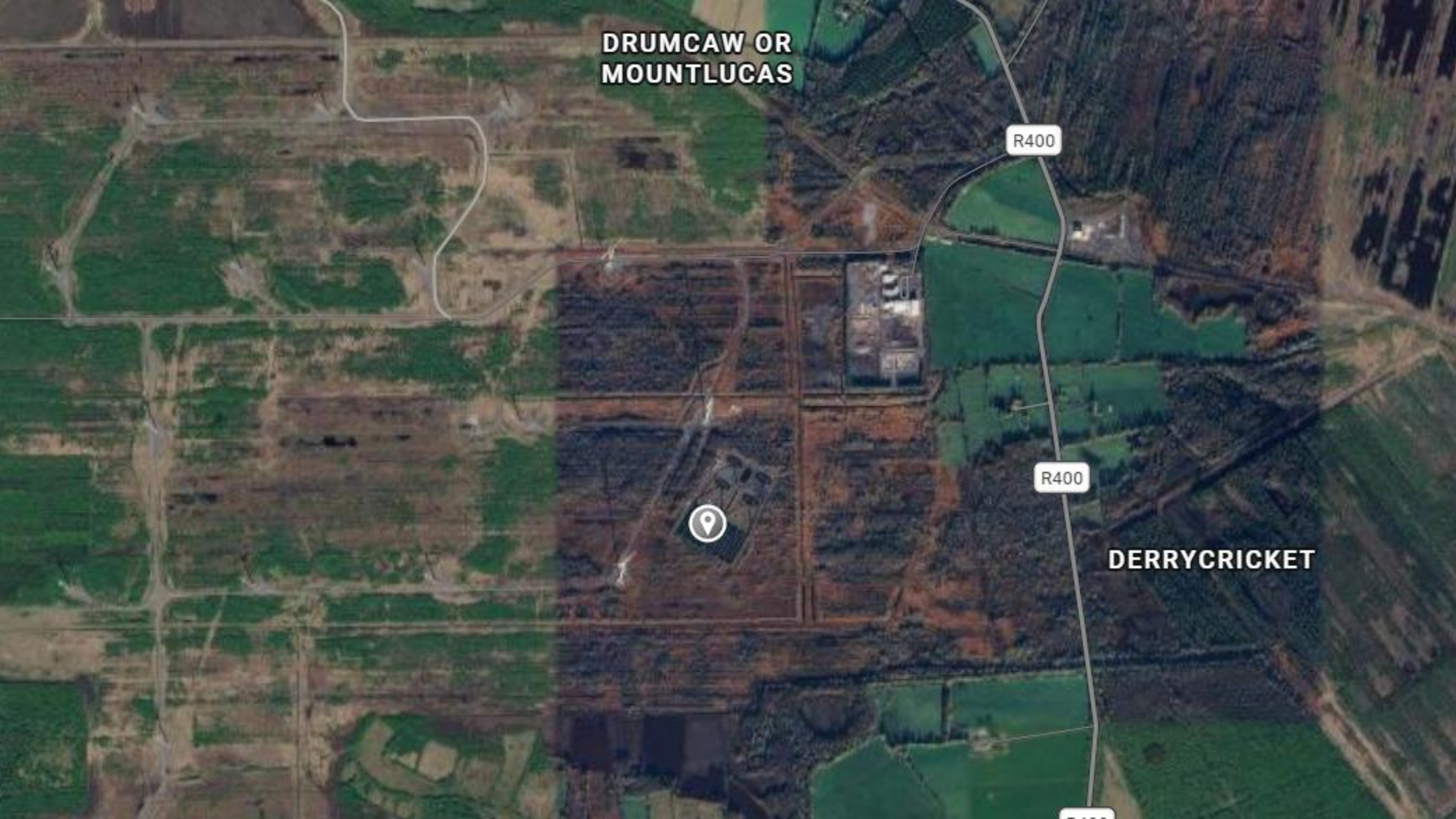
For public bodies

see evidence for skills, policy, procurement and investment

For communities

see what transition looks like on the ground

Sources: original DigiPlus deck; Rowan (2026) operational research on demonstration sites and de-risking investment.


DRUMCAW OR
MOUNTLUCAS
R400
R400
DERRYCRICKET



- Seda Bog is about 7,600 hectares in total, roughly 76 km² or 18,700 acres.
- Latvia's National Encyclopaedia gives 7,582 ha and describes it as the fourth-largest bog in Latvia.

For comparison with Mount Lucas, the mapped peatland area is around 1,100 ha, so Seda Bog is nearly seven times larger. (7x)

OFFALY ↔ VIDZEME

Seda gives us a useful point of comparison

Different places, but a similar question: how can peat-shaped landscapes create new value?

OFFALY

Peat shaped land, jobs and identity across the Irish Midlands.

At Mount Lucas, a former extraction landscape now combines wind energy, restoration and a circular bioeconomy demonstration site.

SEDA / VIDZEME

Seda developed around peat extraction and sits beside a landscape strongly shaped by peat.

Vidzeme is also working on historical peat-site revitalisation through the Just Transition Fund. Its regional approach centres on people, economy and territory.

LAND

Restoration + new productive uses

PEOPLE

Skills + identity + local benefit

PIPELINE

Local pilots → regional + EU investment

Sources: Vidzeme Planning Region (About Us; Just Transition Fund peat-site revitalisation); Visit Valmiera (Seda); Mount Lucas project.


Paldies
Thank you

EU Just Transition Fund Regenerative Tourism & Placemaking Scheme for Ireland's Midlands 2023-2026

- Objectives
- €68m Investment
- Schemes structure
- Your next holiday

Nadia Dagash – Programme Manager



Rialtas na hÉireann
Government of Ireland

Arna chomhchistiú ag an Aontas Eorpach

Co-funded by the European Union

Tionól Reigiúnach Oirthir agus Lár-Tíre
Eastern and Midland Regional Assembly

Fáilte Ireland

Regenerative Tourism and Placemaking Scheme Objectives

Enhance the attractiveness of the region as a place to live, work and visit.

Create new enterprises and jobs by investing in existing and new tourism products and experiences.

Stimulate the development and growth of tourism enterprises by building the capacity and capability of the sector.

Support the transition of the Midlands to a carbon neutral destination.

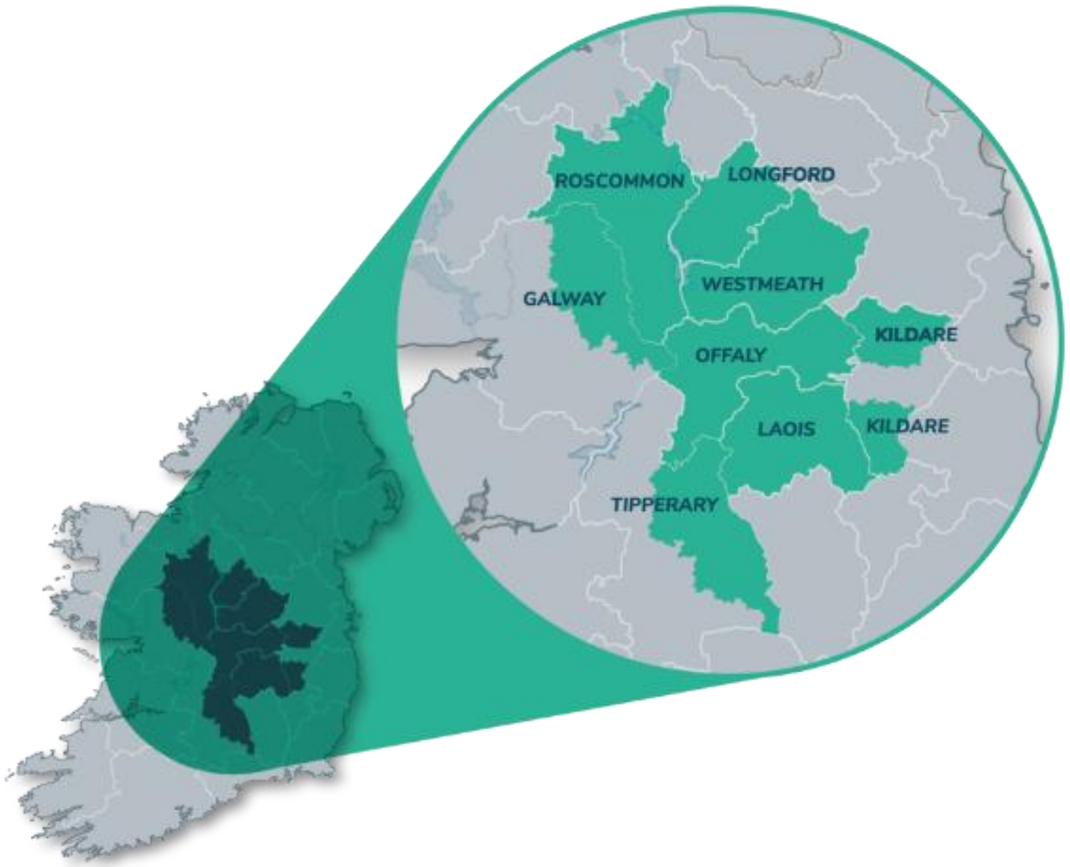
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Eastern and Midland Regional Assembly

Fáilte Ireland

EU JTF Territory



County	MD covered
Laois	All
Westmeath	All
Offaly	All
Longford	All
Roscommon	All
Galway	G2 Ballinasloe
Tipperary	T2 Carrick on Suir T5 Thurles
Kildare	K1 Athy K4 Clane - Maynooth

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€68M

Investment



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Eastern and Midland Regional Assembly

Fáilte Ireland

Regenerative Tourism and Placemaking Scheme (€68m)

Priorities	NETWORK OF TRAILS €30M	ECONOMIC DIVERSIFICATION €38M		
SCHEME	**Trail Network Development** Bord na Mona	**SME, Community and micro-enterprises** large, small & micro investment grants	**Strategic Partnership** 8 Local Authorities & OPW Coillte Bord Na Mona Waterways Ireland	**Tourism Activators** & **Learning networks**

Holistic Investment in Tourism Infrastructure, Product Development, and Capability Building

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Fáilte Ireland

€68m Investment & 181 projects

Ireland's Hidden HEARTLANDS

Private & Community SMEs

81 projects

Digital Transformation

65 projects

Strategic Partners
26 projects

8
Tourism Activators

3 trails
40km

82 participants
Tourism
Learning Network

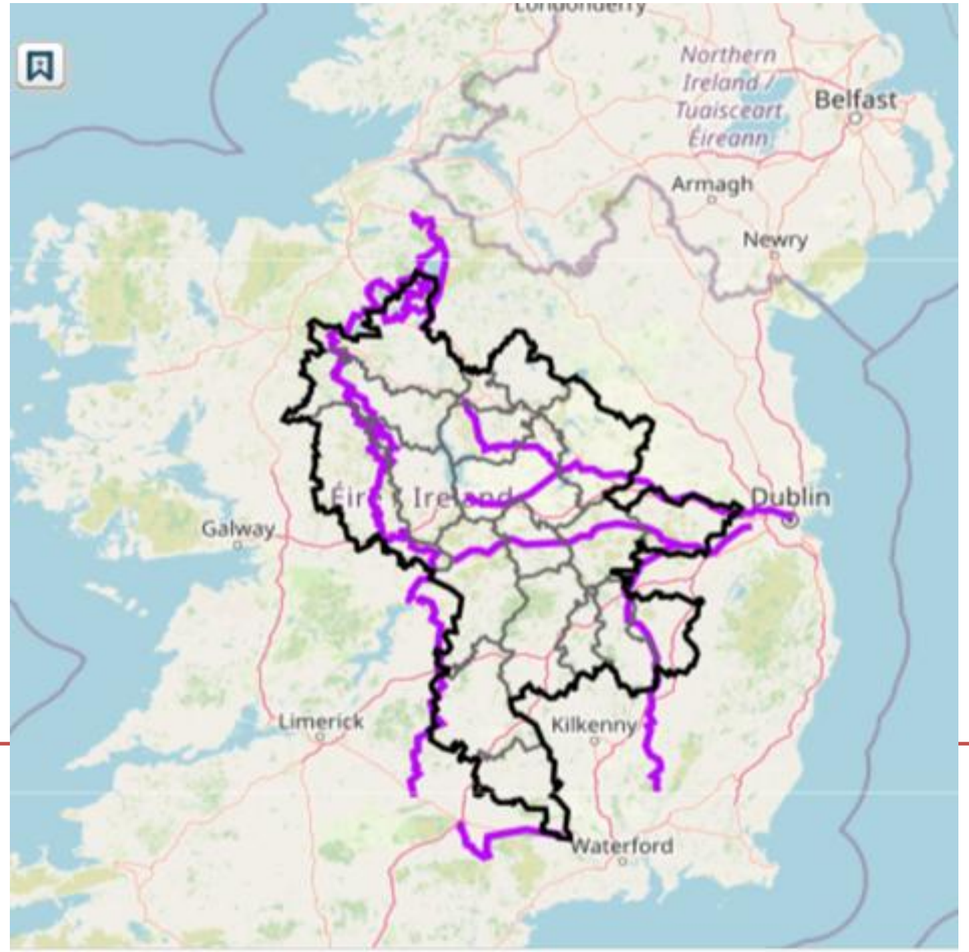
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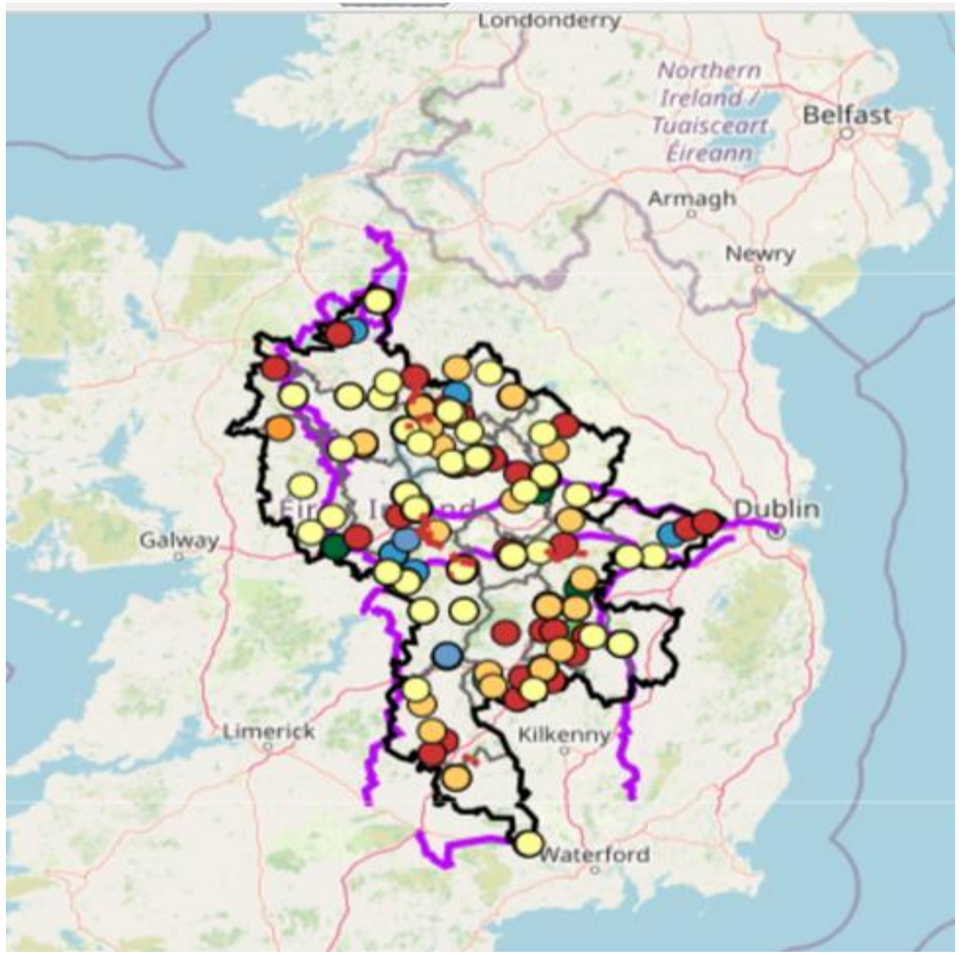
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Impact on Destination



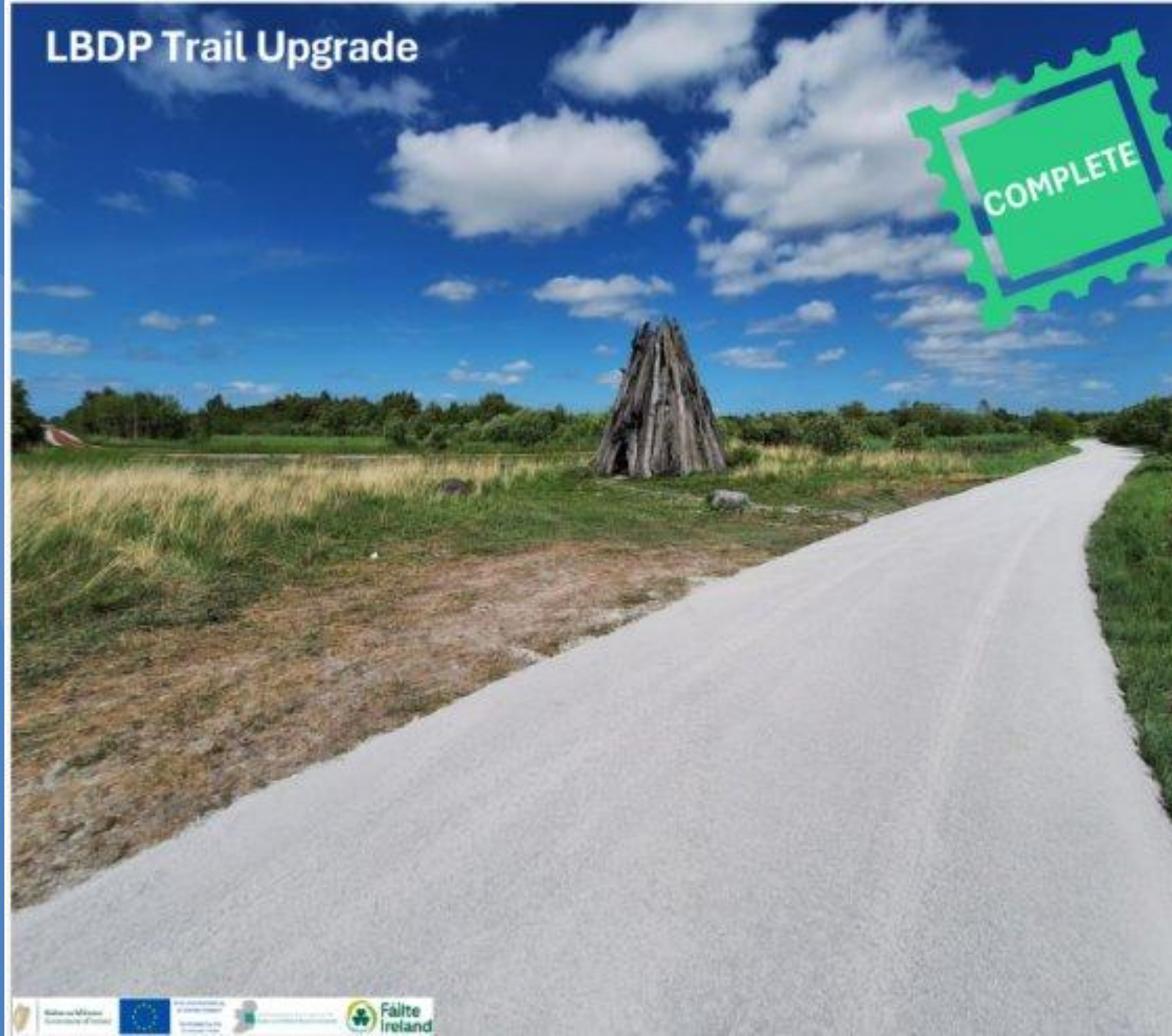


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Eastern and Midland Regional Assembly

Scheme A:
Trails network



Trails

40km accessible trail

Longford

Westmeath

Offaly

3 Counties

12 Gateways

Rest Points

3 Bridge Upgrades

1 Thematic Experience

Wayfinding & Interpretation: for all trails



Ariel View of Westmeath trail



Walker totem from old railway line at all gateways

Rialtas na hÉireann
Government of Ireland

Arna chomhchistiú ag an Aontas Eorpach

Co-funded by the European Union

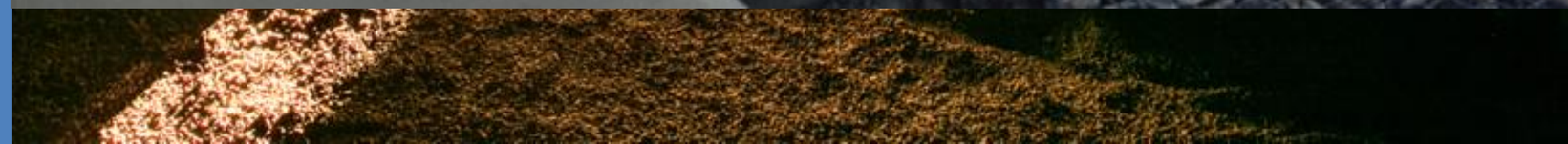
Tionól Reigiúnach Oirthir agus Lár-Tíre
Eastern and Midland Regional Assembly

Fáilte Ireland

Scheme B:
Private & Community SMEs

Fáilte Ireland





Investment Grant-Aid Scheme for Private & Community SMEs

- **Project Types**
  - Experience (40)
  - Accommodation (27)
  - Planning and design (5)
  - Digital (65)
  - Accessibility (9)

- Launched August 2023 and closed in Jan 2025
- Strong interest in scheme
- First-come, first-served (based on eligibility criteria)
- One-to-many supports approach (clinics, videos etc)

- Many are new to tourism → additional supports



Lough Sallagh Lodges September 2026

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Schemes C&D:

Strategic Partnerships



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Eastern and Midland Regional Assembly

Fáilte Ireland

Local Authorities and State Agencies

- **Project Types**
  - Capital investments (10)
  - Detailed design & Planning (16)

- Strategic Partnership approach



Athlone Castle (refurbishment) and Athlone Boardwalk (planning & design)

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Schemes E & F:
Tourism Activators & Learning Networks



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Eastern and Midland Regional Assembly

Fáilte Ireland

Learning networks & Tourism Activators

- Capacity Development:
  - Over 3000 hours of learning
  - 82 participants
  - Graduation ceremony June 26

- Support & clustering:
  - Over 700 engagements with SMEs
  - Integration into tourism networks



In person learning session



Clustering and networks

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Eastern and Midland Regional Assembly
Fáilte Ireland

EU JTF: 3-Day Couples Itinerary

Day 1 – Athlone & River Shannon

Morning

- **Athlone Castle** – enhanced visitor experience funded by JTF.
- Explore Athlone town and riverside cafés.

Afternoon

- **Viking Tours Athlone** – upgraded vessel for eco-friendly cruising.
- **Watershed Fly Fishing** – enjoy fly fishing on River Shannon.

Evening

- Check-in at **Croghan Hill Glamping**
- Dine under fairy lights; relax by the fire pit.

Day 2 – Clonmacnoise & Peatland Trails

Morning

- Visit **Clonmacnoise** – experience major visitor centre redevelopment.
- Explore monastic ruins and Shannon views.

Afternoon

- Hire bikes from **Dick's bikes** and cycle **Bord na Móna peatland trails** – new walking/cycling paths.
- Picnic in nature or stop at **Ballycommon Bakehouse.**

Evening

- Sunset swim at **Banagher Open Water Pool**
- Stay at **Sloe Blossom** eco cabins for cozy nights rest.

Day 3 – Lullymore & Rock of Dunamse

Morning

- Guided tour around **Lullymore Heritage and Discovery Park.**

Afternoon

- **Rock of Dunamase** – interpretation and accessibility upgrades.
- Enjoy panoramic views and heritage walk

Evening

- Dine in **Durrow** followed by self-guided **digital trails tour**
- Stay off grid at **Burtown House** eco cabins

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Eastern and Midland Regional Assembly



EU Just Transition Fund Regenerative Tourism & Placemaking Scheme for Ireland's Midlands 2023-2026

https://www.facebook.com/share/v/1E1U1XiA1L/?mibextid=wwXIfr

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Eastern and Midland Regional Assembly

Fáilte Ireland

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Nadejda.Dagash@failteireland.ie

The Night Sky Over Offaly

A community-led dark sky ecotourism development study



Photo: Todor Tilev



Photo: Birr Castle

Rialtas na hÉireann
Government of Ireland

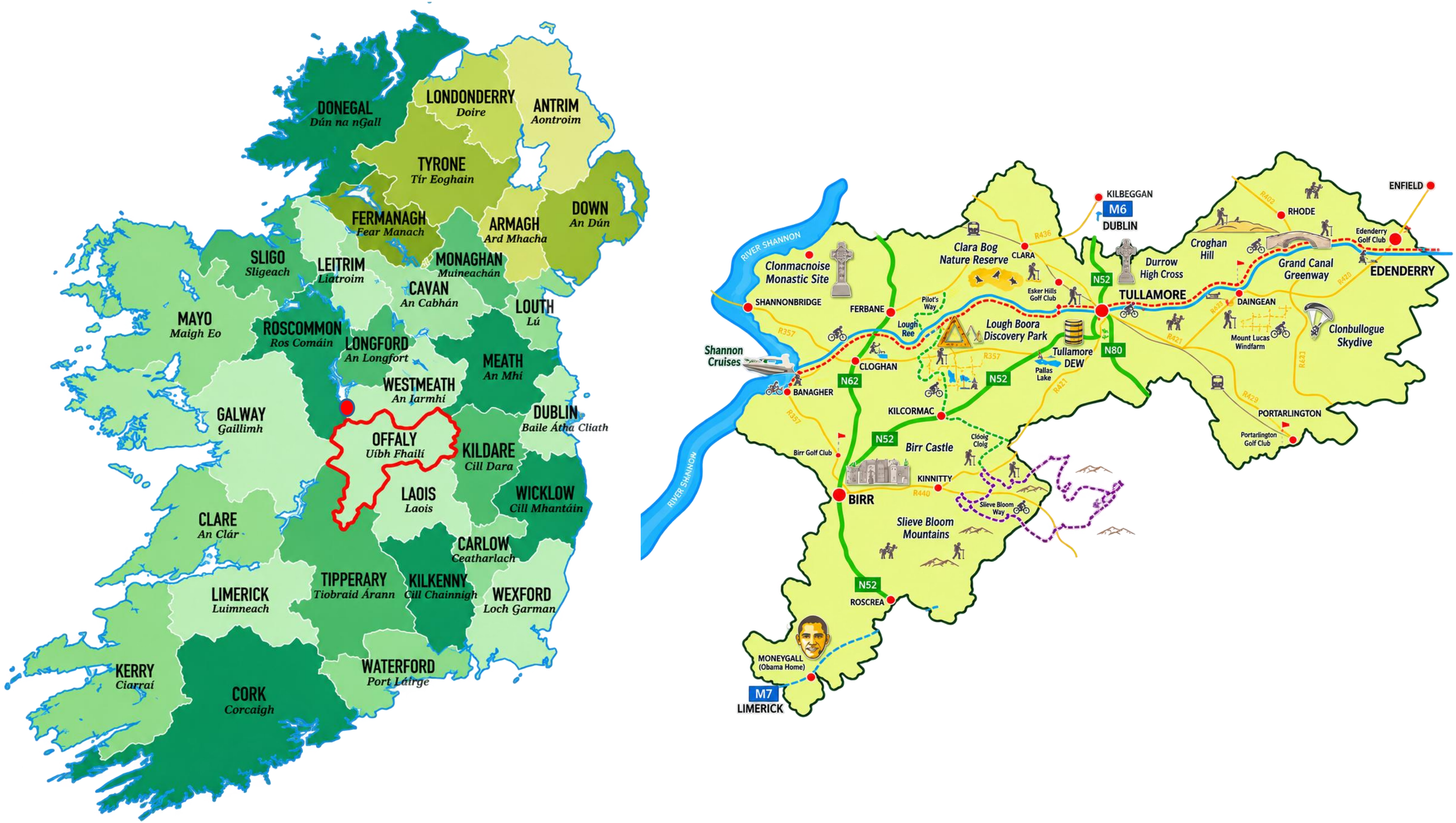
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Co-funded by the European Union

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Southern Regional Assembly

HEA | An tÚdarás um Ard-Oideachas
The Higher Education Authority

TUS RISE is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme 2021-27.


DONEGAL
Dún na nGall
LONDONDERRY
Doire
ANTRIM
Aontroim
TYRONE
Tír Eoghain
FERMANAGH
Fear Manach
ARMAGH
Ard Mhacha
DOWN
An Dún
SLIGO
Sligeach
LEITRIM
Liatroim
MONAGHAN
Muineachán
CAVAN
An Cabhán
LOUTH
Lú
MAYO
Maigh Eo
ROSCOMMON
Ros Comáin
LONGFORD
An Longfort
MEATH
An Mhí
WESTMEATH
An Iarmhí
GALWAY
Gaillimh
DUBLIN
Baile Átha Cliath
OFFALY
Uíbh Fhailí
KILDARE
Cill Dara
LAOIS
Laois
WICKLOW
Cill Mhantáin
CLARE
An Clár
CARLOW
Ceatharlach
TIPPERARY
Tiobraid Árann
KILKENNY
Cill Chainnigh
WEXFORD
Loch Garman
LIMERICK
Luimneach
KERRY
Ciarraí
WATERFORD
Port Láirge
CORK
Corcaigh
RIVER SHANNON
KILBEGGAN
M6
DUBLIN
ENFIELD
RHODE
Edenderry Golf Club
EDENDERRY
Croghan Hill
Grand Canal Greenway
Durrow High Cross
Clara Bog Nature Reserve
CLARA
Clonmacnoise Monastic Site
SHANNONBRIDGE
FERBANE
Pilot's Way
Esker Hills Golf Club
N52
TULLAMORE
DAINGEAN
Lough Ree
Lough Boora Discovery Park
Mount Lucas Windfarm
Clonbullogue Skydive
Shannon Cruises
CLOGHAN
Tullamore DEW
Pallas Lake
N80
N62
BANAGHER
KILCORMAC
PORTARLINGTON
Portarlington Golf Club
Birr Golf Club
Birr Castle
Clóoig Cloig
KINNITTY
BIRR
Slieve Bloom Way
Slieve Bloom Mountains
ROSCREA
MONEYGALL
(Obama Home)
M7
LIMERICK
R402
R436
R357
R421
R420
R423
R440
R429









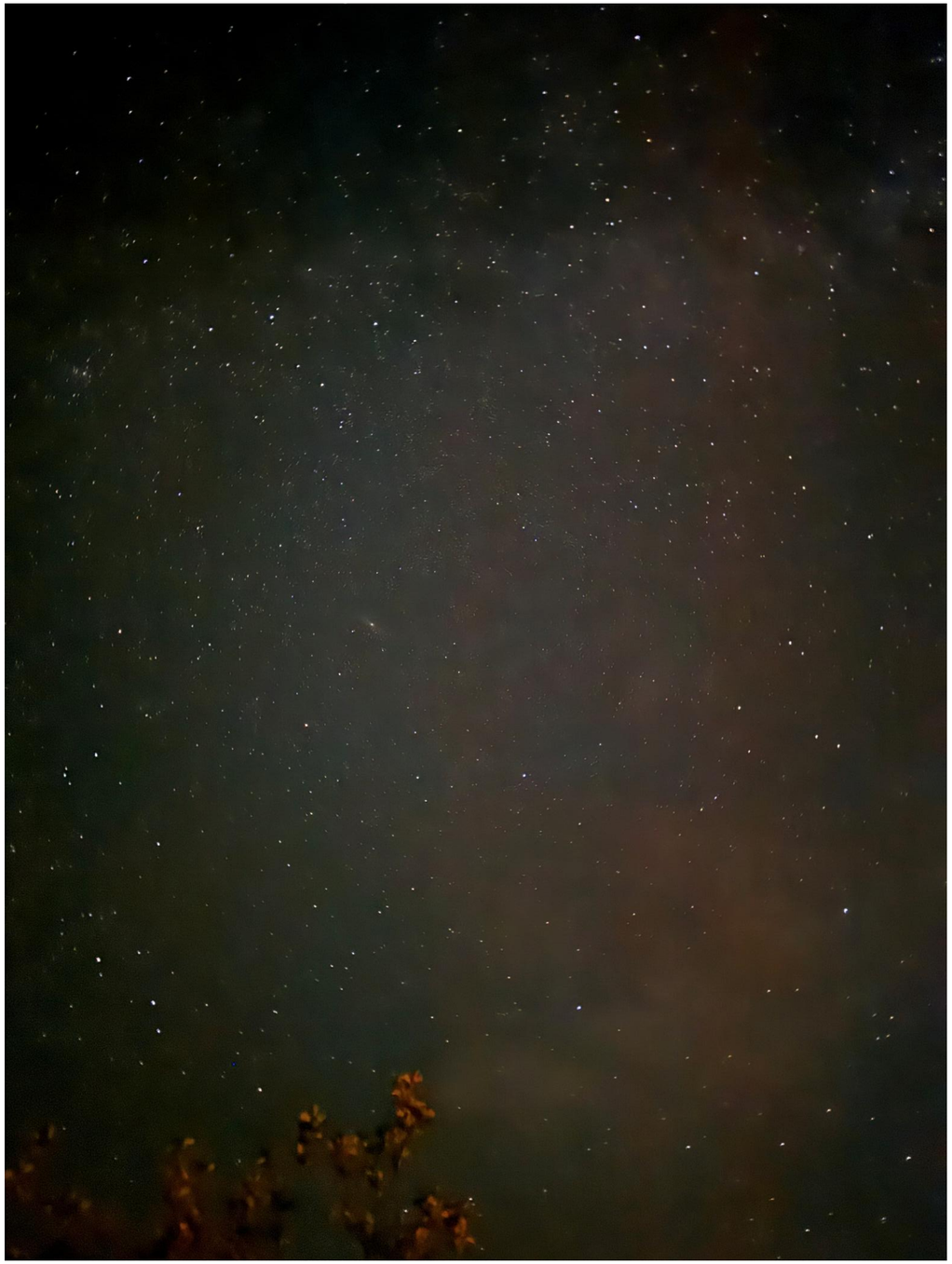
Lough Boora



Birr Castle



Clonmacnoise






Attention
No lighting is provided along this path for the benefit of biodiversity.
Please use the formal roadside lit path during night time hours.
Níl aon soilsiú ar an gcosán seo ar mhaithe leis an mbithéagsúlacht.
Bain úsáid as an gcosán souilsithe foirmiúil cois bóthair I gcaitheamh na hoíche.


OFFALY BARN OWL CONSERVATION PROJECT
Have you seen a Barn Owl in your area?
Photo courtesy of Mike Brown
Please report any sightings to
Offaly Barn Owl conservationists are working nard to help conserve barn owls by monitoring nesting sites and installing nesting boxes in suitable areas
Designed and Printed by: Dimma Print Services Roscrea - 086 35

Irelands Hidden Heartlands Results

Astronomy	Bat	Dark Sky	Ecotourism	Light(ing)	Light Pollution	Night-Time	Nocturnal	Peat / Bog	Rewilding	Biodiversity	Conservation	Sustainable
0	79	1	76	268	8	5	0	1309	3	405	609	622

Offaly County Council Development Results

Astronomy	Bat	Dark Sky	Ecotourism	Light(ing)	Light Pollution	Night-Time	Nocturnal	Peat / Bog	Rewilding	Biodiversity	Conservation	Sustainable
2	28	4	4	88	38	2	2	1112	1	436	473	1174

Offaly County Council Towns, Villages and Sráids Results

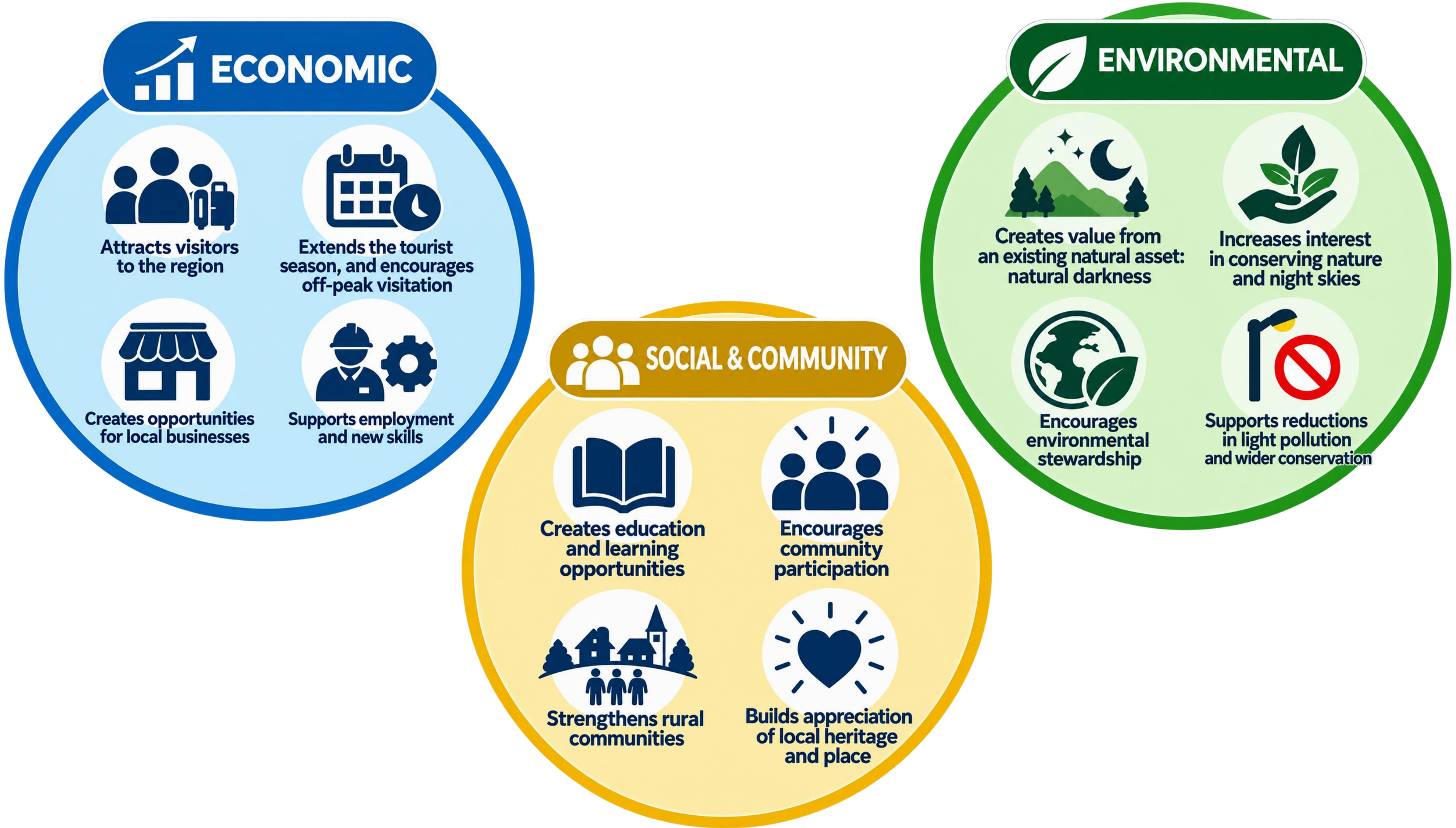
Astronomy	Bat	Dark Sky	Ecotourism	Light(ing)	Light Pollution	Night-Time	Nocturnal	Peat / Bog	Rewilding	Biodiversity	Conservation	Sustainable
0	0	0	0	76	0	0	0	68	0	36	30	223

Offaly County Council Heritage Community and Outdoor Results

Astronomy	Bat	Dark Sky	Ecotourism	Light(ing)	Light Pollution	Night-Time	Nocturnal	Peat / Bog	Rewilding	Biodiversity	Conservation	Sustainable
4	7	0	2	12	0	3	0	132	1	152	57	283

EU Just Transition Results

Astronomy	Bat	Dark Sky	Ecotourism	Light(ing)	Light Pollution	Night-Time	Nocturnal	Peat / Bog	Rewilding	Biodiversity	Conservation	Sustainable
0	1	1	0	2	0	0	0	19	2	9	5	53


ECONOMIC
Attracts visitors to the region
Extends the tourist season, and encourages off-peak visitation
Creates opportunities for local businesses
Supports employment and new skills
ENVIRONMENTAL
Creates value from an existing natural asset: natural darkness
Increases interest in conserving nature and night skies
Encourages environmental stewardship
Supports reductions in light pollution and wider conservation
SOCIAL & COMMUNITY
Creates education and learning opportunities
Encourages community participation
Strengthens rural communities
Builds appreciation of local heritage and place

My Research Question!

How can dark sky ecotourism assist in regenerating disadvantaged regions undergoing rapid transition?

The guiding aims

Examining levels of community participation

Barriers and enablers for dark sky ecotourism

Authentic experiences and ecological behaviour

My research asks how tourism can be developed with communities as the central focus
The goal is not to create a finished tourism product.
It is to understand the values and concerns of locals in order to understand what would make development worthwhile





Bradley Joubert
PhD Researcher
Technological University of the Shannon

e-mail: a00257199@student.tus.ie

Technology Gateways | Enterprise Ireland

TUS | CISD | PRISM Polymer, Recycling, Industrial, Sustainability and Manufacturing Research Institute

APT

Applied Polymer Technologies

Biomass Valorisation and Biopolymers: From Renewable Resources to Sustainable Applications

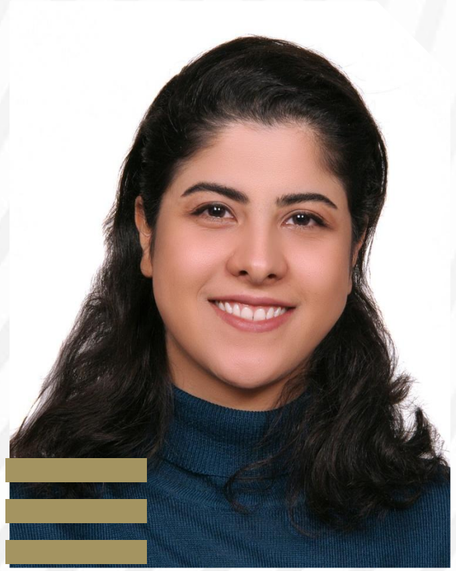
September 2026

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The Applied Polymer Technologies Gateway (APT) is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme 2021-27

#EUinmyregion

PRISM
Polymer, Recycling, Industrial, Sustainability and Manufacturing Research Institute



Dr. Golnoosh Abdeali

Sustainable Materials: Circular Packaging, Bio-based Plastics & Energy Storage

- Developing sustainable materials and solutions for circular packaging and bio-based plastics.
- Advancing smart nanomaterials/composites for energy storage to support a more sustainable, low-carbon future.

Functional Polymers

Research Interests

- Development of sustainable packaging solutions
- Smart nanostructures engineering for thermal energy storage applications.
- Biomass conversion to polymers

Research Impact

- Collaboration with Enterprise Ireland (EI) on nationally funded, industry-led research projects.
- Project Manager for 3 EU-funded projects (Bio2PEs, MAGICBIOMAT, and ReTREEaSSURE).

Industry Applications

- Food packaging
- Medical devices
- Energy-storage components (batteries, insulators and solar cells)
- Bio-based polymer composites

Research Profile

- Google Scholar
- ORCID



Dr. Amin Abbasi

Advanced Polymers and Composites, Process Design, Development, and Optimization; and Sustainability

Identification of the Problem and project requirements, plan and process design, processing and optimization of polymeric and composite solutions for various research and industrial applications.

Polymer Sustainability

Advanced Materials

Research Interests

- Polymer and composite science and engineering
- Green, sustainable, and bio-based polymers
- Monomer and polymer synthesis and characterization
- Functionalization of polymers
- Materials development, modification, and design
- Modeling and optimization
- Plastic recycling and waste management
- Environmental remediation using polymers
- Stimuli-responsive polymers

Research Impact

- Multiple industrial projects completed and ongoing
- H-index: 12
- Over 30 scientific publications
- Several research and publications awards
- Sole expert in sulfur-based polymers in Ireland
- International Dissemination

Industry Applications

- Construction sector
- Energy sector
- Auto/Aero sectors
- Healthcare sector
- Marine sector
- Environmental remediation sector
- Agriculture sector

Research Profile

- Google Scholar
- LinkedIn
- ResearchGate
- Pure

Our Facility :R&D Processing, Analytical Testing and 3D Design

APT

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Midlands Midwest

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Lar na Tire Lar Thiar



Polymer Materials Processing & Research

- Polymer Materials Processing & Research
- Multilayer Cast film extrusion line.
- Range of Injection moulding scales and technologies.
- Extrusion, compounding and reactive extrusion.
- 3D printing, additive manufacturing tooling.
- Fibre Spinning & Blow Moulding services available.



Polymer Materials Testing, Investigation & Development

- Polymer Materials Testing, Investigation & Development
- Variety of mechanical, thermal and chemical analysis testing to assist the development of innovative products and applications
- Material composition identification
- Thermal & mechanical properties determination
- Failure analysis
- Quality assurance testing



Product Design & Prototyping

- Product Design and Prototyping
- Product/part design.
- Prototyping.
- Design for manufacture.
- Scale-up.

Strengths

Talent | Testing & Investigation | Product Design | Polymer Processing | Grant writing

Our Facility: Polymer Processing and Equipment List

APT

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- 100 T. All Electric Arburg Allrounder 470A Comfort
- Wittmann Battenfeld MicroPower Moulding Machine 15 T
- 6 T Micro-Injection Moulder Babyplast
- LSR (Liquid Silicon Resin) Fanuc All Electric a-s 30ia With Nexus Dosing System Servomix X1
- Eurotech Cast Film Co-Extrusion Line, 200mm 3/5 Layer Film System

- ThermoScientific Process 16 TSE Twin screw reactive extruder
- Entex Planetary Extruder
- 40mm Boston Matthews Extrusion Line
- Melt Spinning Fibre Line
- 27mm Co-rotating Leistritz twin screw extruder
- Brabender MetaStation 4E Single screw, twin screw and In line Rheometer
- 22mm E Lab 22 Eurexma High Temperature Enabled

- Zeiss Metrotom CT Scanner
- Fontijne LabEcon 600 Compression Press
- Memmert Climatic Test Chambers x 3
- Carbolite Gero Furnace
- Rapid 150 Granulator
- Ohaus Moisture Analyser
- Arburg Freeformer, High Temperature Enabled
- Collin Lab Line Blown Film

Strengths

Talent | Testing & Investigation | Product Design | Polymer Processing | Grant writing

Our Facility: Some of Our Polymer processing Equipment

APT

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Blown Film Line



Arburg Arburg Allrounder 470A



Multilayer



Fanuc LSR



Evosys Laser



Zeiss Metrotom 1 CT Scanner

Strengths

- Talent
- Testing & Investigation
- Product Design
- Polymer Processing
- Grant writing

Our Facility: Analytical Equipment List

APT

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- Waters 2695 Alliance High Pressure Liquid Chromatography (HPLC-UV)
- Agilent 6870 Gas Chromatography Mass Spectroscopy (GC-MS)
- ThermoScientific Nicolet iZ10 Fourier Transform InfraRed (FTIR) spectroscopy
- ThermoScientific Nicolet iZ10 MX Fourier Transform InfraRed (FTIR) Microscope
- Agilent 1260 Infinity II Gel Permeation Chromatography (GPC)
- TOSOH HLC-8321 High Temperature Gel Permeation Chromatography (GPC)
- Perkin Elmer 8000 Dynamic Mechanical Thermal Analysis (DMTA)

- TESCAN MIRA Scanning Electron Microscope System with EDX Detector
- TESCAN VEGA Scanning Electron Microscope System with EDX Detector
- Oxford Instruments Jupiter XR Asylum Research Atomic Force Microscope with NanoTA
- Extra Solutions Perme H2O Water Vapour Transmission Rate (WVTR) Permeability Tester
- Extra Solutions Perme O2 Oxygen Transmission Rate (OTR) Permeability Tester
- ECHO Instruments Respirometer
- Dynisco Capillary Rheometer

- TA DHR30 Parallel Plate Rheometer
- Lovibond RT Series Colourimeter
- Rolbatch Density Balance
- Zwick / Roell Ceast 6545 Impact Tester
- Llyod TA1 Tensiometer
- Llyod LRX Tensiometer
- Tinious Olsen Mp1200 Melt Flow Index
- Olympus BX53M Polarised Light Microscope
- Hot Deflection and Vicat Softening Temperature Testing Machine (Vicat /HDT)
- Q Sun Xe-1 Weatherometer
- QUV Weatherometer
- Tinious Olsen 25ST Tensometer

Strengths

Talent | Testing & Investigation | Product Design | Polymer Processing | Grant writing

Our Facility: Some of Our Analytical Testing Equipment

APT

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Lar na Tire Lar Thiar



QUV Accelerated Weathering



Tescan Vega (SEM)



Xenon ARC



Tescan Mira Microscope



DSC4000 c/w Autosampler



Parallel Plate Rheometer

Strengths

Talent

Testing & Investigation

Product Design

Polymer Processing

Grant writing

Our Facility: 3D Design Equipment List

Technological University of the Shannon
Midlands Midwest
Ollscoil Teicneolaiocha don Sionainn
Lar na Tire Lar Thiar

- HP Multi Jet Fusion 5200 series
- ProJet 6000 HD SLA 3D Printer
- Markfordged composite printer

- Large FDM 600mm cubed printer (Open source)
- Formlabs 3 and with full range of resins

- 3D Scanner (GOM ATOS CORE)
- Bambu H2C 3D printer

Strengths

Talent | Testing & Investigation | Product Design | Polymer Processing | Grant writing

Our Facility: Some of Our 3D Design Equipment



Large FDM



HP Multi Jet Fusion



HP Multi Jet Fusion



HP Multi Jet Fusion



Bambu H2C 3D printer



Large FDM

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Midlands Midwest

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Lar na Tire Lar Thiar

Strengths

Talent

Testing & Investigation

Product Design

Polymer Processing

Grant writing

BIO2PEs Project

Project Duration: 2025 – 2029
Funding: European Innovation Council (EIC)-Horizon Europe Programme
Lead PI: Dr. Yuanyuan Chen

APT

Technological University of the Shannon Midlands Midwest
Ollscoil Teicneolaiocha don Sionainn Lar na Tire Lar Thiar



Bio2PEs is an EU-funded project developing bio-based and biodegradable polyethylene (PE) and polyester from biomass waste to support Europe's shift toward a circular plastics economy.

Biomass Waste → Bio-based Polymers → Functional Materials → Packaging & Agriculture → Circular Economy

Project Objectives

1. Develop bio-based and biodegradable polyethylene (PE) and polyester derived from biomass waste for sustainable applications.
2. Design eco-friendly materials for food packaging, textile packaging, agricultural mulch films, and crop protection membranes.
3. Assess lifecycle impacts and test biodegradability and ecotoxicity in soil, freshwater, and marine environments.
4. Improve durability, recyclability, and reuse through advanced technologies, while supporting the European Circular Economy Action Plan.

Bio2PEs Project Overview

Strengths

Talent | Testing & Investigation | Product Design | Polymer Processing | Grant writing

BIO2PEs Project







Applications

- Food packaging
- Textile packaging
- Agricultural mulch films
- Crop protection membranes

Strengths

Talent | Testing & Investigation | Product Design | Polymer Processing | Grant writing

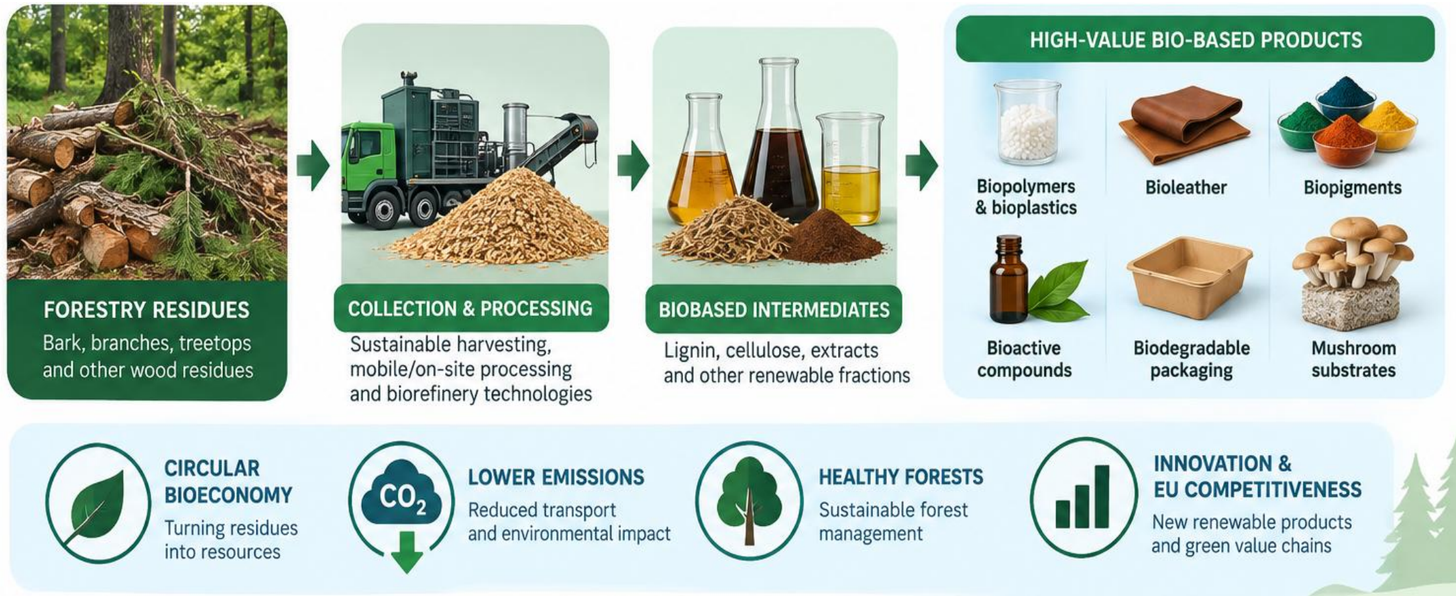
ReTREEaSSURE Project

Project Duration: Sep 2026– 2030
Funding: CBE-Horizon Europe Programme
Lead PI: Dr. Yuanyuan Chen

APT

Technological University of the Shannon Midlands Midwest
Ollscoil Teicneolaiocha don Sionainn Lar na Tire Lar Thiar

ReTREEaSURE (Recovery of Tree Resources for Sustainable Use in Renewable Chemistry) is an EU-funded research project focused on turning largely unused forestry residues such as bark, small branches and treetops into valuable bio-based products. It combines sustainable residue harvesting, mobile/on-site processing and biorefinery technologies to support a circular bioeconomy and sustainable forest management in Europe



Main Objective:
The main objective is to develop a sustainable and economically viable system for collecting, assessing and valorising forestry residues, converting them into high-value products such as biopolymers, bioleather, biopigments, bioactive compounds, lignin-based chemicals, biodegradable packaging and mushroom-growing substrates, while reducing transport costs and emissions and protecting forest ecosystems.

Strengths

- Talent
- Testing & Investigation
- Product Design
- Polymer Processing
- Grant writing

Traceless

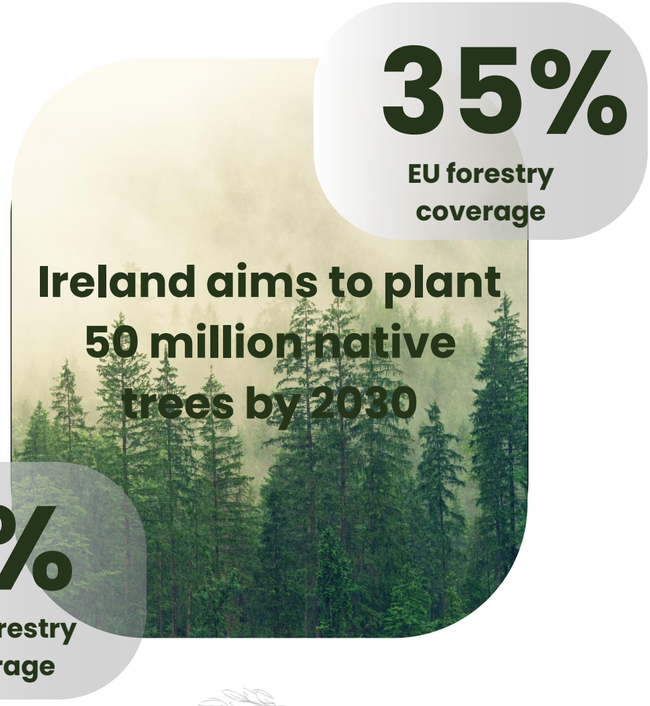
Developing fully biodegradable tree-supporting products with controlled release of fertilizers and natural repellents

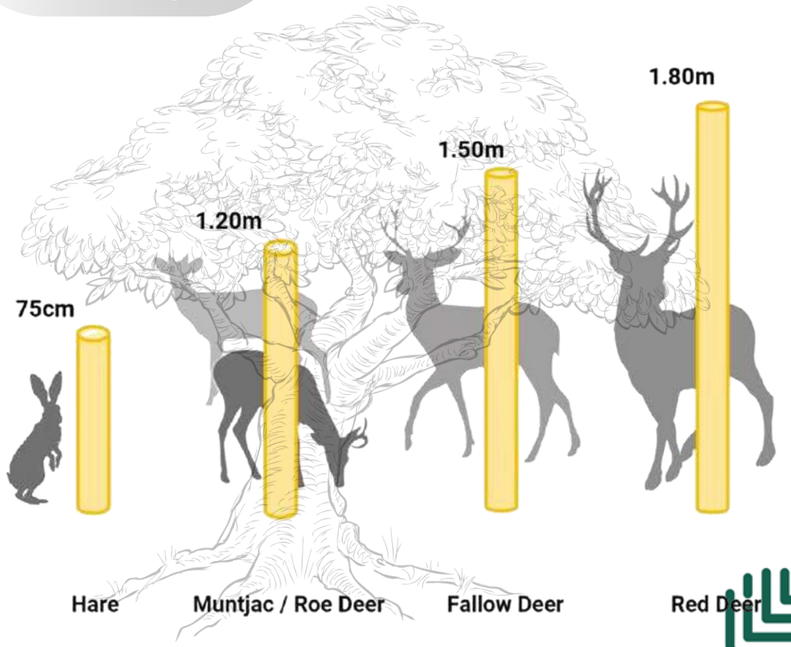
22/NCF/HE/11142

Lead PI: Dr. Yuanyuan Chen

CHALLENGE

- Tree planting targets
- Young broadleaf trees require protection
- Plastic pollution
- Current biodegradable products: Questionable biodegradability & High cost
- Fertilizer application and run-off







Taighde Éireann Research Ireland

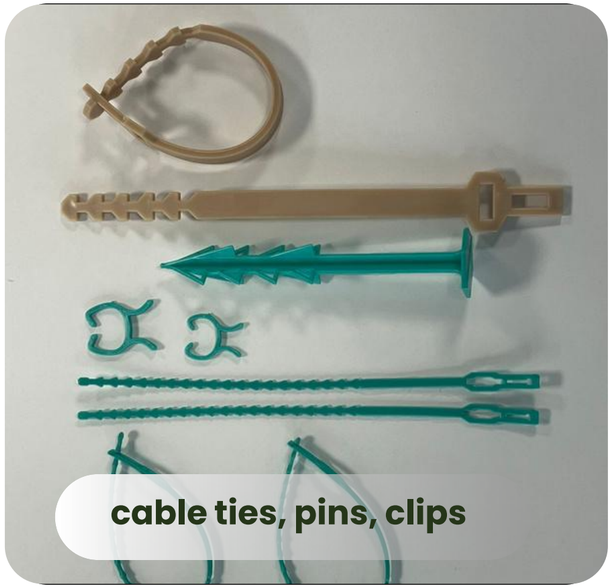
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SOLUTION

Fully biodegradable tree supports with controlled release of fertilizer and animal repellent

- Function for 3-8 years to support young broadleaf trees
- After service degrade away under natural composting conditions
- Tree guards release animal repellent odour to keep deer and rabbits away
- Pins controlled release fertilizers for trees planted near the road and riverbank
- Competitive prices using recycled or imported materials from Asia.


Pin with controlled release fertilizer


cable ties, pins, clips


injection moulding

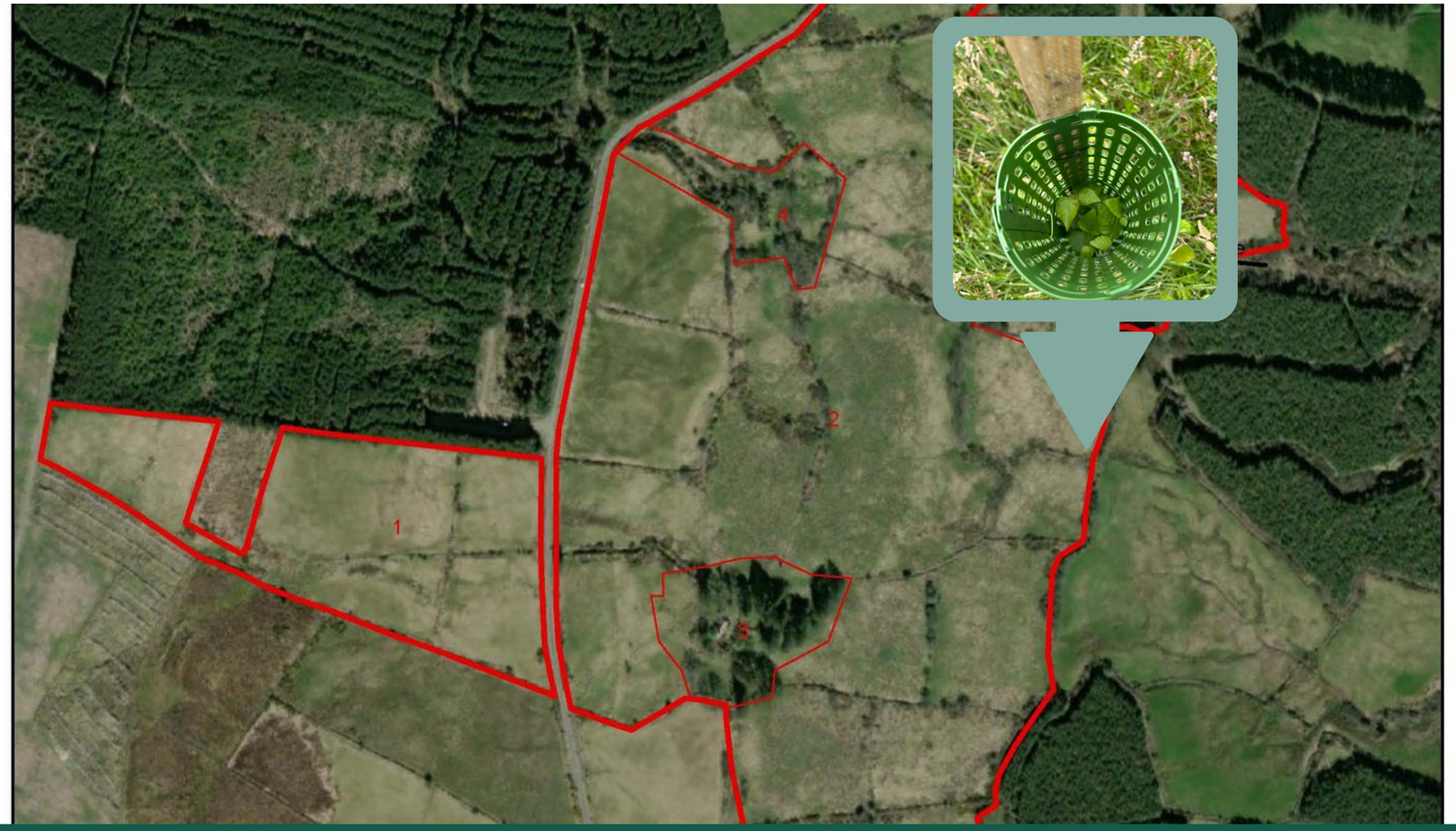

Tree guards with animal repellent

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Research Ireland

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CURRENT PROGRESS - FIELD TRIAL FOR TREE GUARD WITHANIMAL REPELLENT





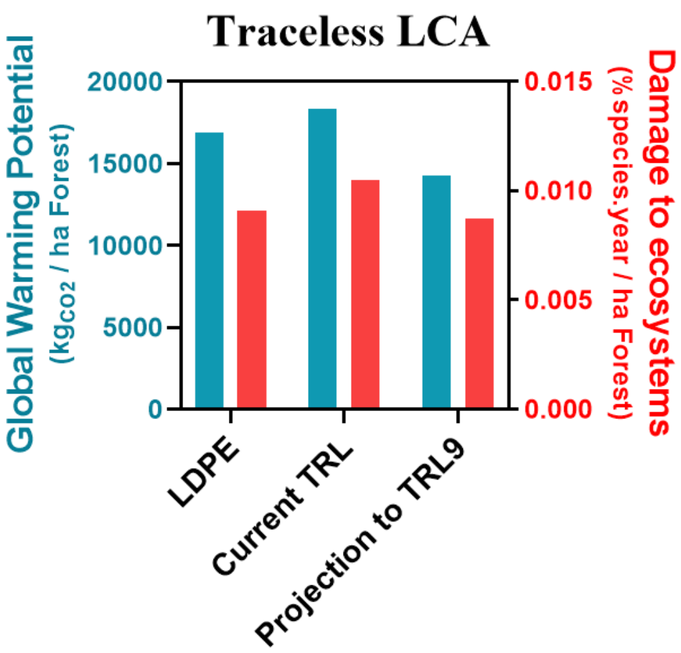
Mixed species forest established in 2023, in Knockalough Commons, County Tipperary under Grant support from DAFM . Plantations was established and maintained by Green Belt forestry

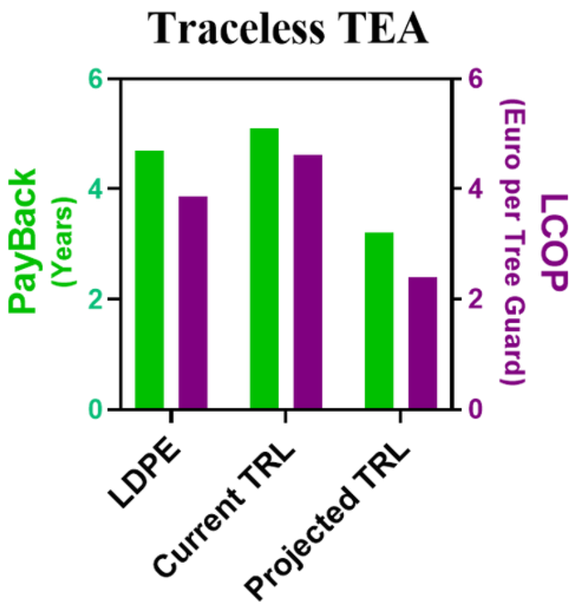
Taighde Éireann
Research Ireland

Traceless



CURRENT PROGRESS - LCA, TEA, REGULATORY STUDY





Based on 1 ha of forest, a projective LCA to commercial scale (TRL9) found that:

- Potential 15% reduction of GWP;
- Potential 5% reduction of damage to the terrestrial ecosystems
- Potential 19% reduction of the production costs
- Potential 8.5% reduction of the payback period

REACH COMPLIANCE

BPR APPROVED BIOCIDAL PRODUCTS REGULATIONS

SOIL OK bio-degradable

TÜV AUSTRIA SOIL

Taighde Éireann Research Ireland

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CURRENT PROGRESS - MARKET STUDY

By external consultant, Mr. Brendan Chambers of Chamo International Ltd



Market size in 2024:

EU: €90–120 million, sold ~40–50 million units annually

UK: €15–20 million, sold ~7–10 million units per year

Ireland: €1–1.5 million, sold ~400,000–600,000 units per year

Production cost target:

- €5/kg for the raw material
- < €1.0 material cost per 120 cm tube (175g)
- < €0.5 material cost per 100 cm × 200 cm mesh (100g)
- Production cost ~ €0.5/unit
- Sell at €2.50–€3.0 VS current €2.5 Tubax 120 cm tube
- Aim to achieve 50–60% gross margin

Taighde Éireann Research Ireland

Chamco

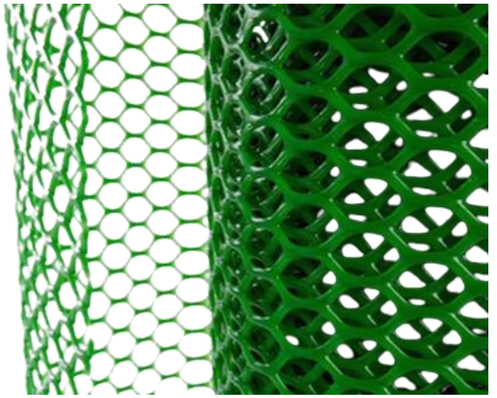
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FUTURE WORK FOR PRIZE PHASE - DEPLOY LARGE SCALE FIELD TRIALS & VALIDATION UNDER FORESTRY CONDITIONS



- Produce > 1000 mesh and tubes
- > 5 ha forest
- Validation of the durability, biodegradability, and controlled-release fertilizer functionality of the developed prototypes under real-world forestry conditions
- IP filing and engaging with suitable licensing partners



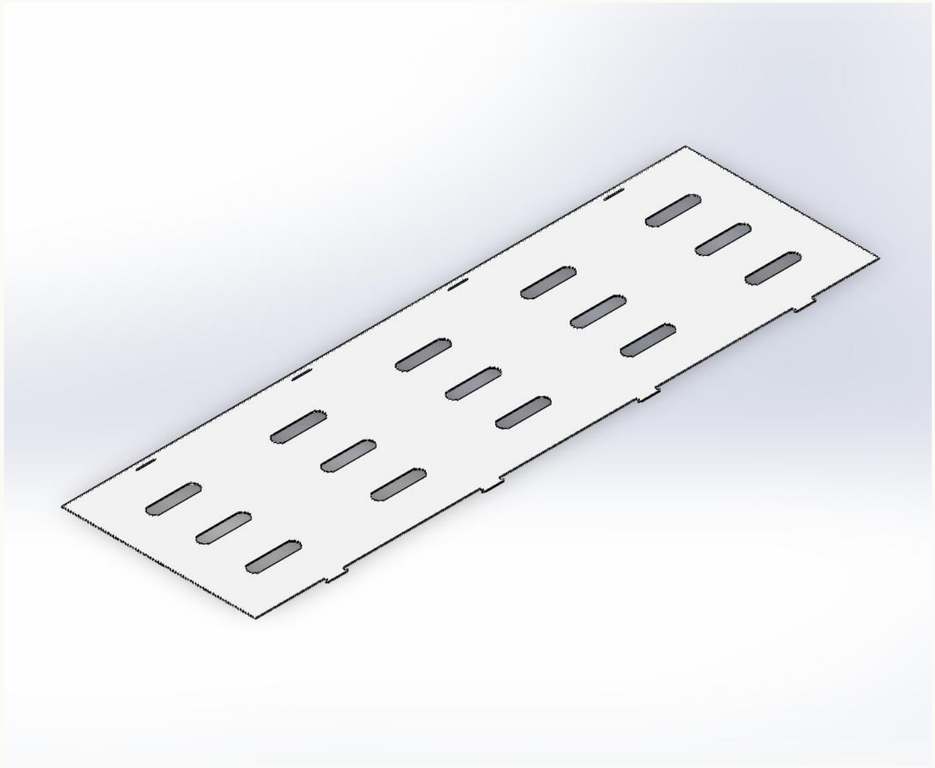


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CAD design of the Tree Guard

Draft concept for geometry optimisation and manufacturability review



Single-unit strip design with folding slots

Design intent

FEM analysis will be used to find the best balance between geometry, weight, and strength.

Key features

- Folding into circular or triangular shapes
- Opening holes
- Continuous production



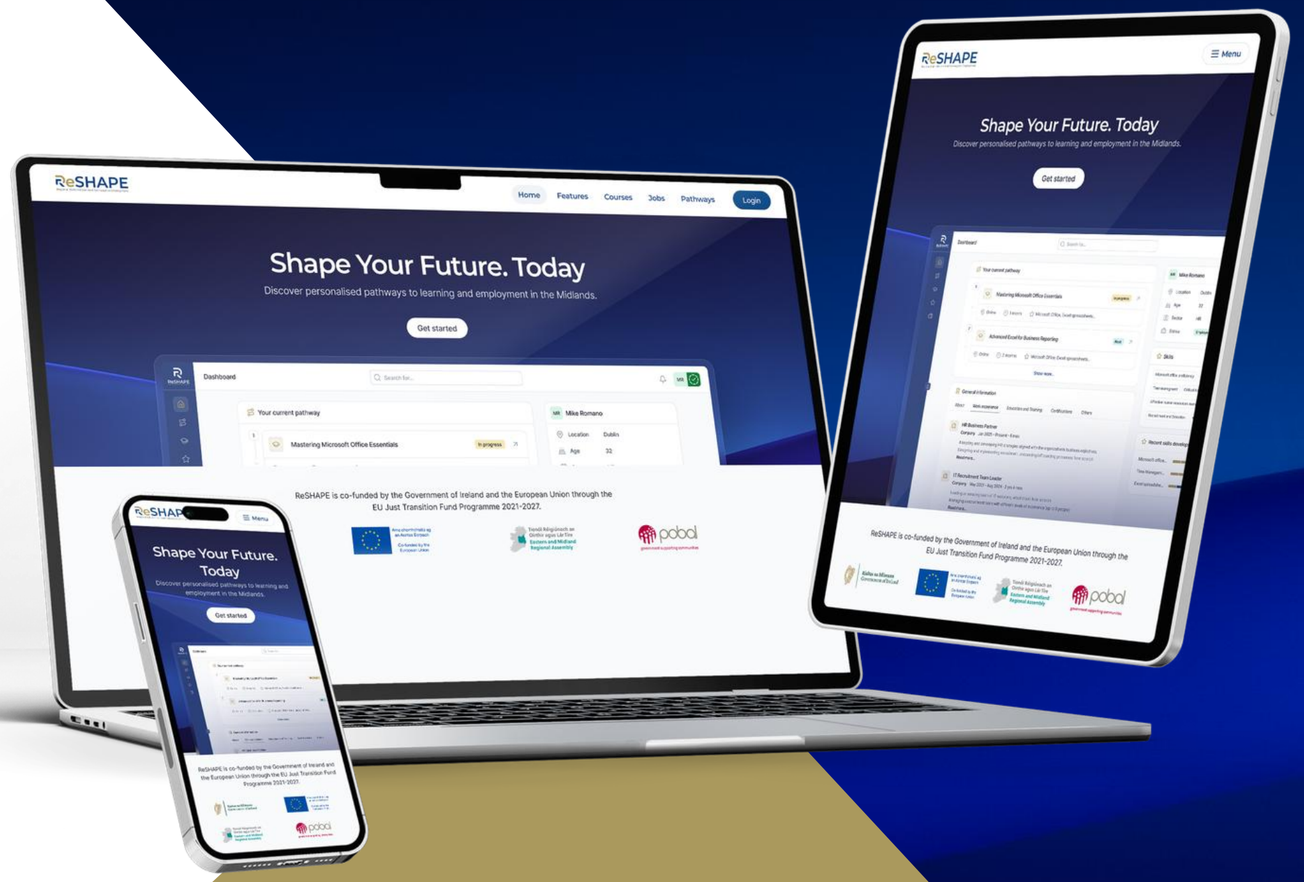
Cross-section: ~0.4 mm wall; overall thickness 2–4 mm adjustable

Second-Generation Development: Incorporate the sulfur-based polymer into the optimized biodegradable formulation to introduce animal-repellent functionality while maintaining the required material performance.

ReSHAPE

Regional Skills Horizon And Pathways to Employment

Shaping Skills.
Creating Pathways.
Supporting the Midlands.



22/09/2026

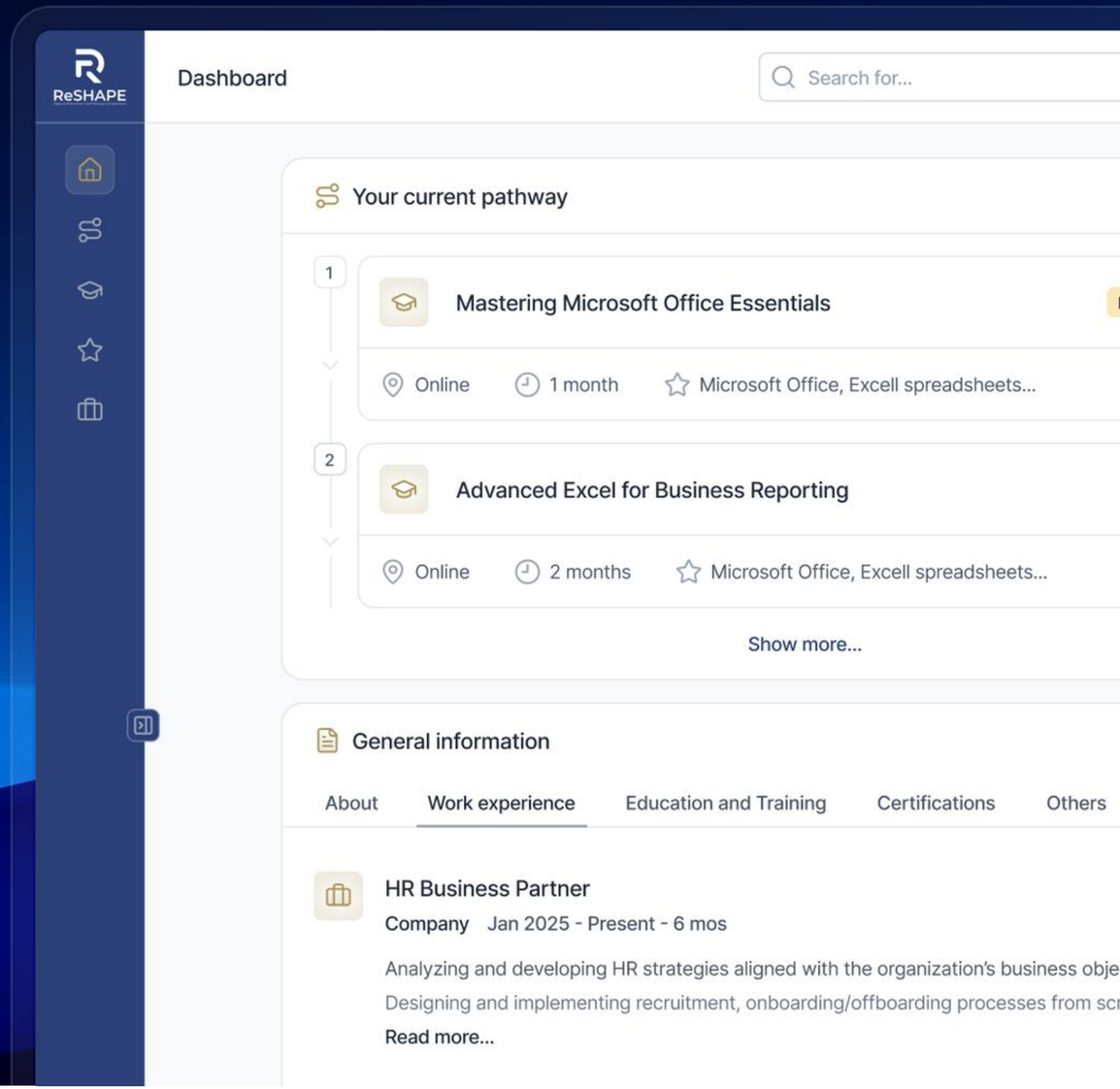
Mary Ward Centre
Technological University of the Shannon

ReSHAPE
Regional Skills Horizon And Pathways to Employment

Innovation, Opportunity & Technology

Technology is often seen as disruptive or threatening to workforces.

ReSHAPE shows how technology can instead guide, support, and empower people to reach their full potential.



TUS Oilscoil Teicneolaíochta na Sionainne: Lár Tíre, An Iarthar Láir. Technological University of the Shannon: Midlands Midwest
MTU Ollscoil Teicneolaíochta na Mumhan. Munster Technological University
University of Limerick Ollscoil Luimnigh

Rialtas na hÉireann Government of Ireland
Arna chomhchistiú ag an Aontas Eorpach. Co-funded by the European Union
Tionól Réigiúnach an Oirthir agus Lár Tíre. Eastern and Midland Regional Assembly
pobal government supporting communities

ReSHAPE is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund Programme 2021–2027

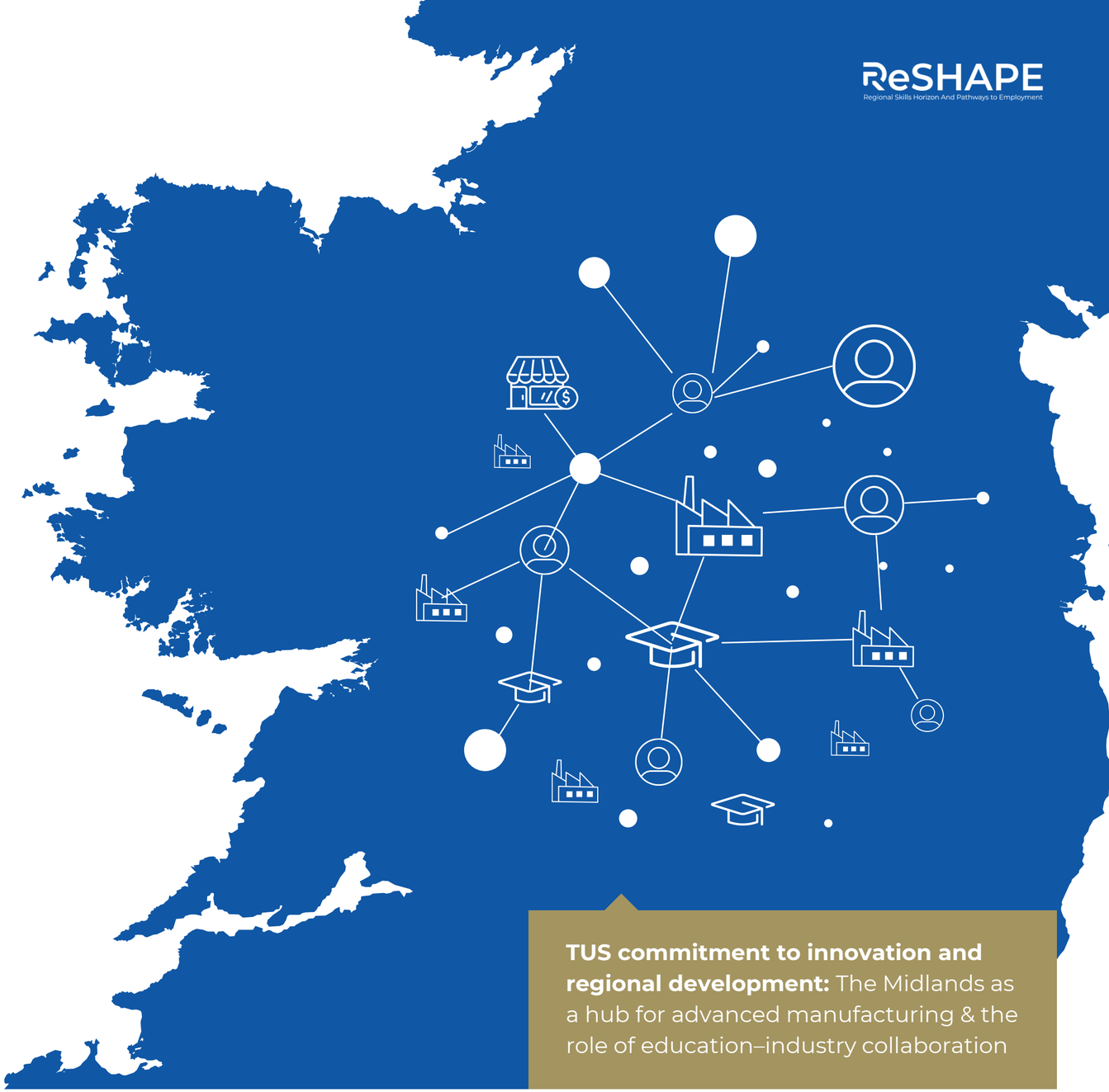
TUS

MTU

UNIVERSITY OF LIMERICK
OLLSCOIL LUIMNIGH

ReSHAPE

Regional Skills Horizon And Pathways to Employment



TUS commitment to innovation and regional development: The Midlands as a hub for advanced manufacturing & the role of education–industry collaboration

TUS Ollscoil Teicneolaíochta na Sionainne; Lár Tíre, An tIarthar Láir; Technological University of the Shannon: Midlands Midwest
MTU Ollscoil Teicneolaíochta na Mumhan; Munster Technological University
UNIVERSITY OF LIMERICK OLLSCOIL LUIMNIGH
Rialtas na hÉireann; Government of Ireland
Arna chomhchistiú ag an Aontas Eorpach; Co-funded by the European Union
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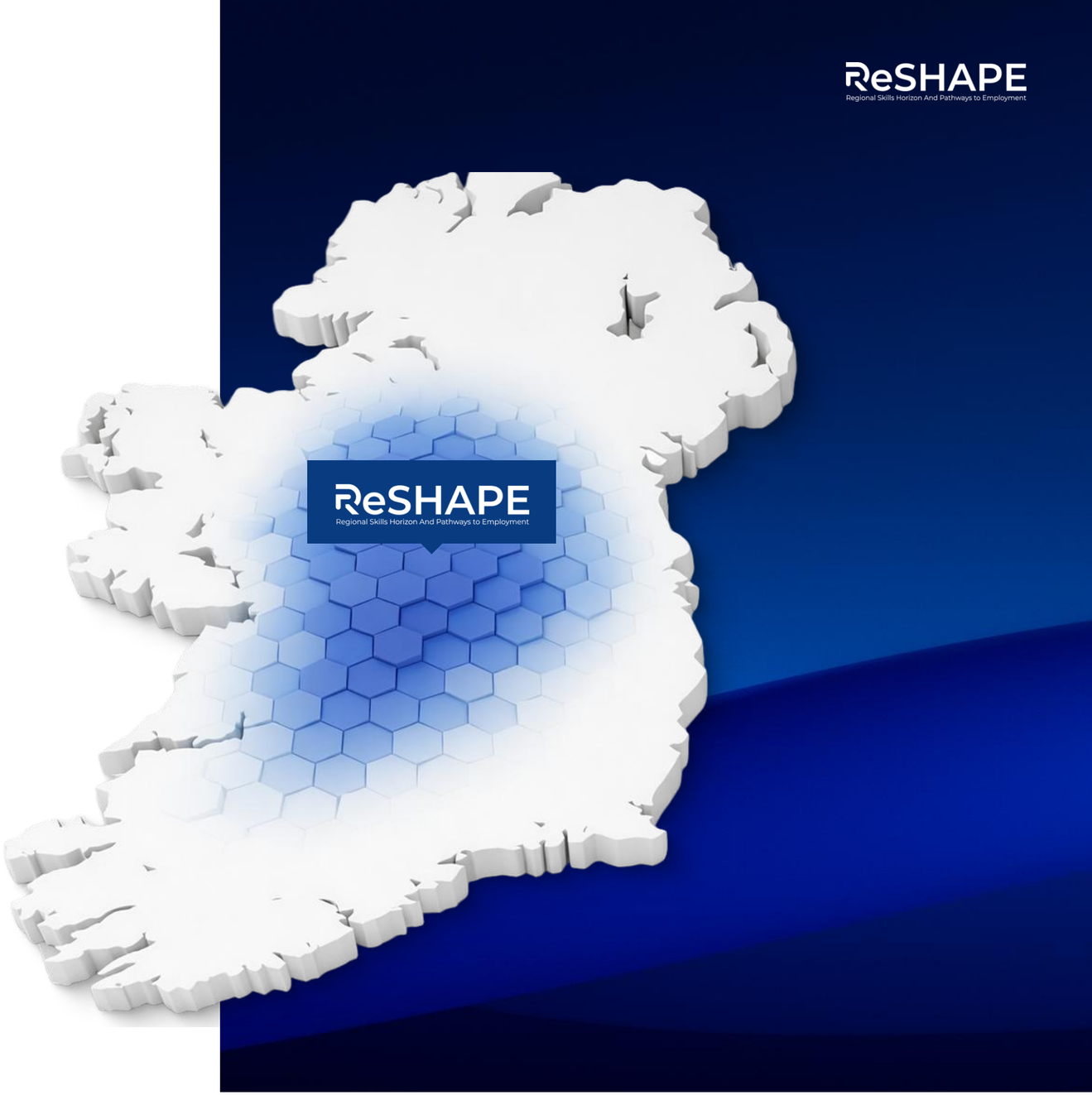
About ReSHAPE

Delivered by MTU, TUS and UL

Co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund Programme 2021–2027

Strong regional emphasis
(Laois · Offaly · Longford · Westmeath)

Supporting individuals, employers and training providers across the Midlands region



ReSHAPE is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund Programme 2021–2027

ReSHAPE
Regional Skills Horizon And Pathways to Employment

The Origin of ReSHAPE



Researchers and regional partners recognised the need for new ways to support skills development.



Collaboration between TUS, UL and MTU helped shape the vision



Insights from employers, communities, and educators helped define the approach

ReSHAPE
Regional Skills Horizon And Pathways to Employment

ReSHAPE was created to enable and empower the Midlands workforce through intelligent training pathways and skills development opportunities.

Collaboration and partnerships are central to the delivery of this project

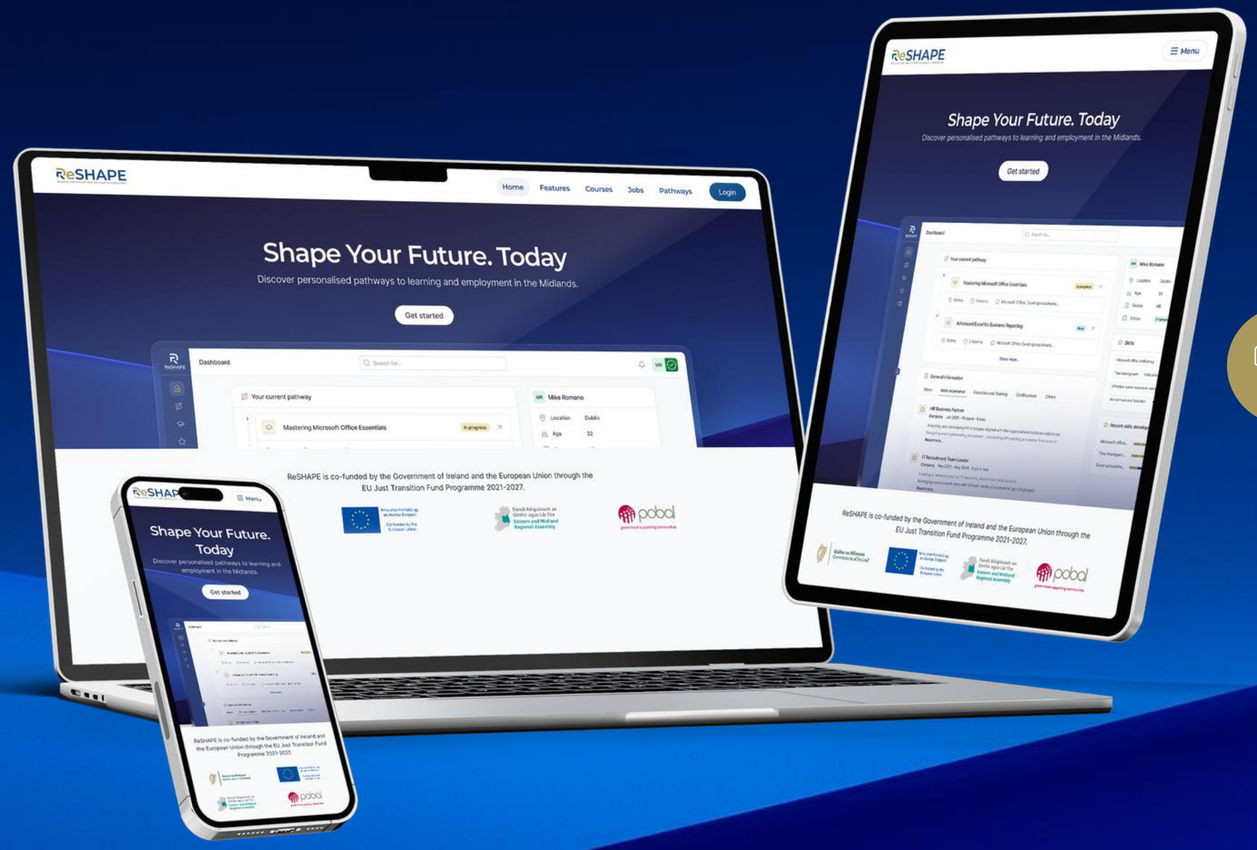
ReSHAPE
Regional Skills Horizon And Pathways to Employment

To support this vision, the project developed the

ReSHAPE digital platform

Individuals understand their skills

Employers identify workforce needs



Training providers align courses with demand


SHAPE

ReSHAPE
Regional Skills Horizon And Pathways to Employment

ReSHAPE connects:

People, Skills, Training, Employers & Opportunities



AI analyses the user's profile, identifies skills gaps, and suggests relevant courses and pathways.

Using:
- **Skills assessment**
- **Structured skills mapping**
- **Intelligent recommendation**

ReSHAPE
Regional Skills Horizon And Pathways to Employment

Opportunity for Industry & Communities

ReSHAPE provides:



Skills insights for organisations



Training alignment with industry needs



Opportunities for workforce development

Companies can:



Assess workforce skills



Identify future training needs

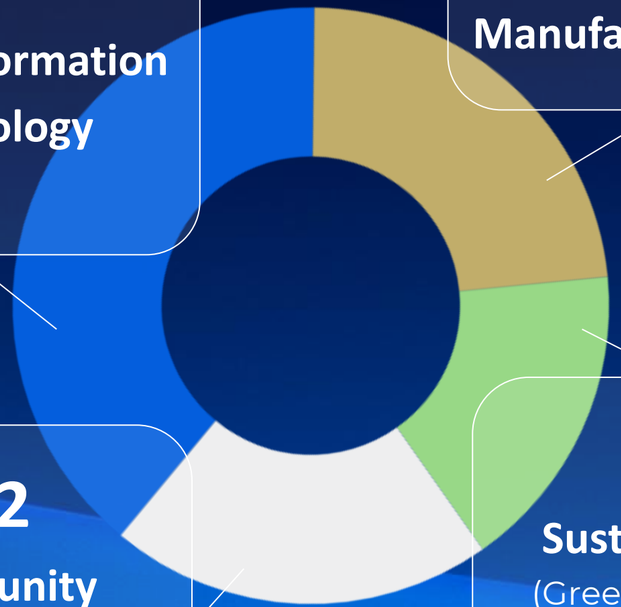


Build competitive advantage

Regional Impact

ReSHAPE
Regional Skills Horizon And Pathways to Employment

1792 Total learners



751
Digital Information Technology

405
Manufacturing

352
Community Engagement

284
Sustainability
(Green Economy, sustainability and circular economy)

95+ Industry Partners supported to develop their sustainability approaches

55 Businesses supported to develop their sustainability approaches

76
Organisations
engaged in future workforce development

1 Network - 23 Companies
through our Workforce Horizon Series

26 SMEs
that have adopted a Sustainable Supply Chain Framework /Methodology

84 learners within Community Development

37 **Ecosystem Building Networks / Platforms**

60+ unique community organisations engaged

atimcluster
advanced technologies in manufacturing
accelerating industry growth together

BRONZE
Cluster Management Excellence
STRIVING FOR CLUSTER EXCELLENCE

ATIM (Advanced Technologies in Manufacturing) Cluster is Ireland's industry-led initiative dedicated to driving innovation, competitiveness, and sustainable growth in the manufacturing sector.



Our Purpose

We connect industry, academia, government, and community to deliver collaborative initiatives that drive innovation, develop skills, and support sustainable growth in Ireland's manufacturing sector.

Our Ambition

To position Ireland as a global leader in advanced and sustainable manufacturing, where innovation, talent, and collaboration drive long-term economic and societal impact.

TUS
Technological University of the Shannon: Midlands Midwest
Ollscoil Teicneolaíochta na Sionainne: Lár Tíre Iarthar Láir

Rialtas na hÉireann
Government of Ireland

Enterprise Ireland

dreambig®

digitalisation, robotics, engineering,
advanced manufacturing & materials

atimcluster

advanced technologies in manufacturing

accelerating industry growth together

A programme to inspire engage and support young people in the Midlands pursue a career in Advanced Manufacturing.





4 counties & local authorities

94 students

24 schools

16 Industry Partners

Collaborating to support students explore manufacturing in their locality.
Over 120 people engaged

2 University & Technology Centre

Fuelled by regional innovation partners TUS and IMR

Outreach Partners

Interactive activity daily based on themes from hosting company

Women in STEM AWARDS 2024

Interreg Europe — Co-funded by the European Union

Interreg Europe Policy Learning Platform

Comhairle Chontae Uíbh Fhailí Offaly County Council · Laois County Council · An Lon Fort · Westmeath County Council · An Roinn Fiontar, Trádála agus Fostaíochta Department of Enterprise, Trade and Employment · Enterprise Ireland · Local Enterprise Office · Irish Manufacturing Research

Robotics & Drives · Decotek Automotive · teg · Writech · mergon · Abbott · Avery Dennison · N&E Precision · Panelto Foods · Midland Steel · kirby · CJ Sheeran · Grant · William Grant & Sons 1887 · Applied

ReSHAPE is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund Programme 2021–2027

1. Strategic Engagement.

2. Regional, National and European Partners.

3. Blueprint to build a more resilient, adaptable and future – ready workforce.

ReSHAPE brings together:

- Education
- Industry
- Innovation

to support individuals and businesses in navigating change.

ReSHAPE
Regional Skills Horizon And Pathways to Employment

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ReSHAPE

Regional Skills Horizon And Pathways to Employment

Thank you.
ReSHAPE is now live.

Explore the platform today

reshape.ie