Experience from the other side of the pond – offshore & marine renewable energy

Andrew B. Gill PhD FRSB

Together we are working for
a sustainable blue future

Cefas

"To provide authoritative advice, m
and R&D in support of understa
effects of human activities under
natural capital and blue g

We are...
Defra group

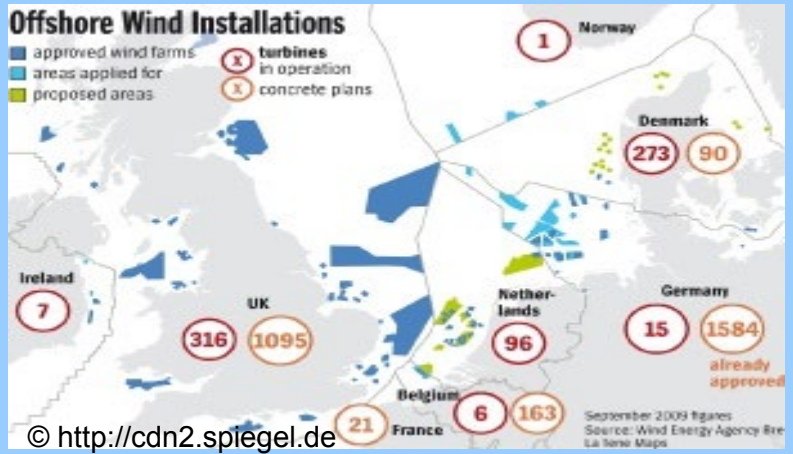
Creating a great place for living

European case studies

- Collaboration - Belgium OWF (2008-2026….)
- Industry led - North Sea Decommissioning
- Local community led - Fisheries - EMFF
- Combination - AURA – Hull Univ lead


http://www.mywindpowersystem.com/


http://www.mywindpowersystem.com/



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Belgiu OWF (2008 2026….)

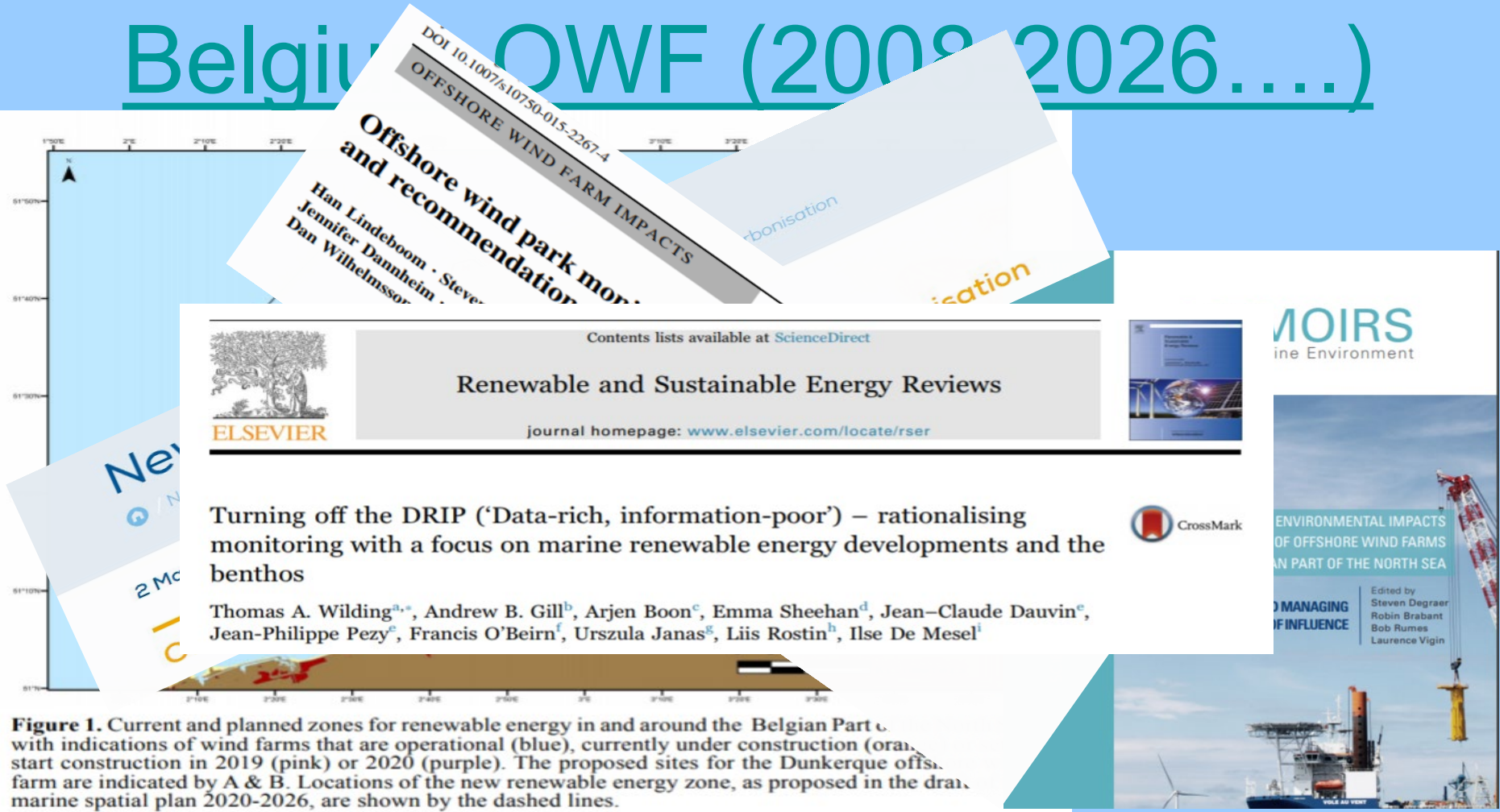

Figure 1. Current and planned zones for renewable energy in and around the Belgian Part
with indications of wind farms that are operational (blue), currently under construction (ora
start construction in 2019 (pink) or 2020 (purple). The proposed sites for the Dunkerque offs
farm are indicated by A & B. Locations of the new renewable energy zone, as proposed in the dra
marine spatial plan 2020-2026, are shown by the dashed lines.

North Sea Decommissioning

INSITE

- INSITE I & II - INfluence of man-made Structures In The Ecosystem

Science of The Total Environment
Volume 658, 25 March 2019, Pages 973-981
ELSEVIER

Review

Decommissioning of offshore oil and gas structures – Environmental opportunities and challenges

Brigitte Sommer [a, b], Ashley M. Fowler [a, c], Peter I. Macreadie [c], David A. Palandro [d], Azivy C. Aziz [d], David J. Booth [a]

Fisheries - EMFF

European Maritime & Fisheries Fund

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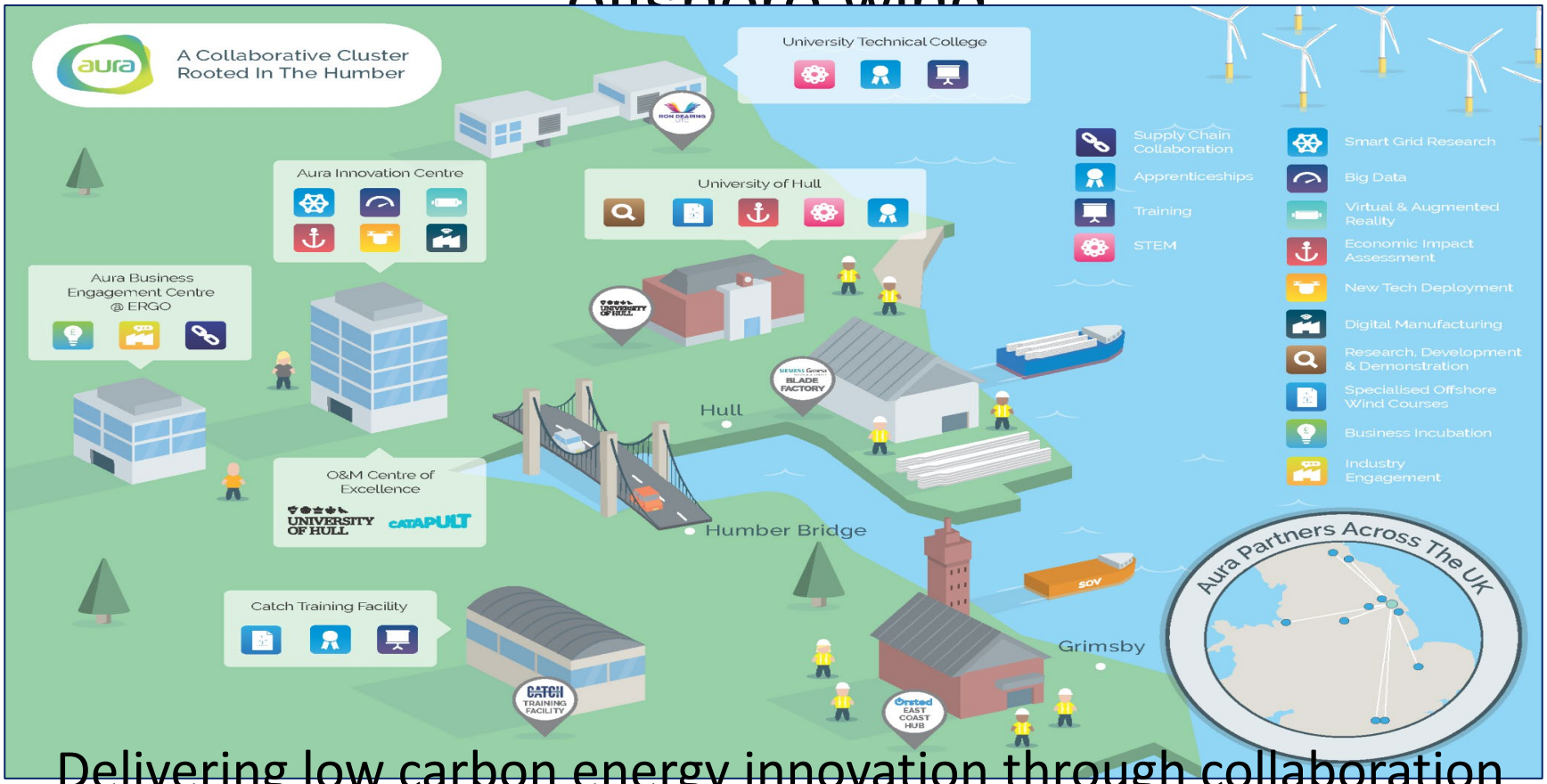
Aura - Shaping the future of offshore wind



Delivering low carbon energy innovation through collaboration

Supporting education and skills development in OSW

UNIVERSITY OF HULL

aura

Professional PGT

Leadership training

CPD and training

UTC | Apprenticeships | Degree apprenticeships | Executive education

14 — TALENT PIPELINE — 70+

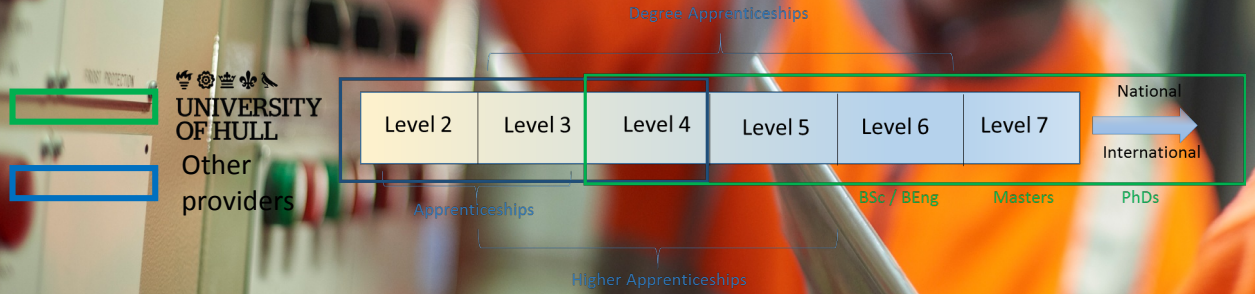
DOCTORAL TRAINING CENTRE

Degree apprenticeships

Postgraduate training

Undergraduate degrees | Masters

PhD | Postdoctoral

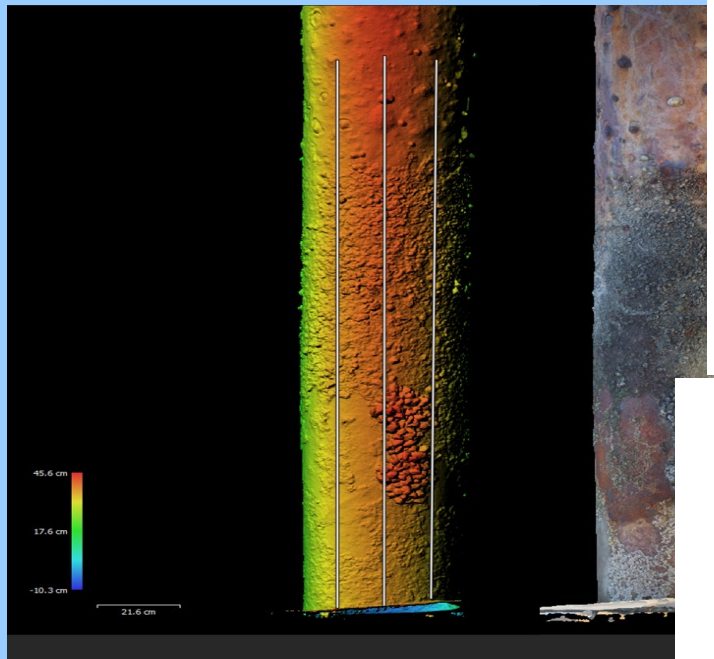


A national framework

- Quality
- Standards
- Accreditation
- Curriculum
- Governance
- Co-ordination
- Marketing
- Delivery

Crossing Disciplines

- biology, technology, engineering



Anthropogenic electromagnetic fields (EMF) influence the behaviour of bottom-dwelling marine species

Zoë L. Hutchison[1], Andrew B. Gill[2,3], Peter Sigray[4], Haibo He[5], John W. King[1]

[1]Graduate School of Oceanography, University of Rhode Island, USA

[2]PANGALIA Environmental, Bedfordshire, England, UK

[3]Cefas, Centre for Environment, Fisheries and Aquaculture Science, Suffolk, England, UK

[4]FOI, Department of Underwater Research, Stockholm, Sweden

[5]Department of Electrical, Computer and Biomedical Engineering, University of Rhode

The Effect of Marine Growth dynamics in Offshore Wind Turbine Support Structures

M. Martinez-Luengo, P. Causon, A.B. Gill & A.J. Kolios

Centre for Offshore Renewable Energy Engineering, School of Water, Energy and Environment, Cranfield University, Cranfield, MK43 0AL, UK

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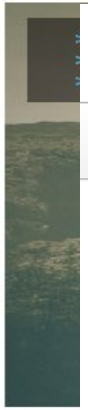
Understanding and Communicating Environmental Risk Assessment



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Marine Energy - Environmental Risk and Uncertainties

The course focuses on the skills and practical knowledge necessary to integrate concepts of risk and uncertainty into practical decision processes. Using examples from academia, industry, and policy perspectives, the course provides participants with the fundamental principles and knowledge necessary to integrate and apply risk and uncertainty assessment into their own businesses.

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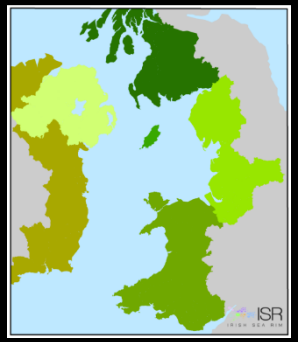
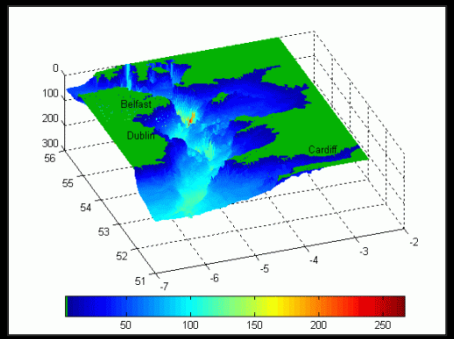
NERC SCIENCE OF ENVIRONME

Irish Sea Rim: A new paradigm for regional economic growth, integration and collaboration

Economic Research & Innovation Zone





Underpinned by environmental and social engagement

Professor Philip Leigh
Executive Chairman and Chief Executive

ISR IRISH SEA RIM

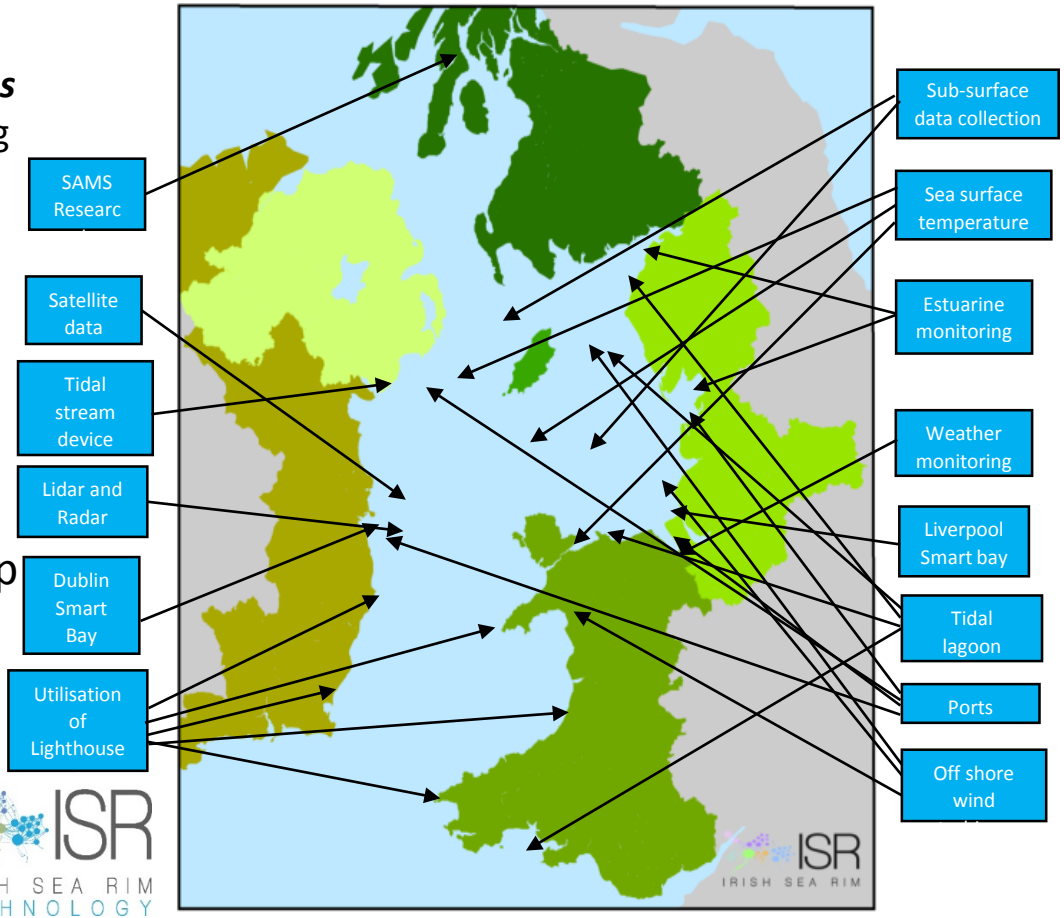
ISR IRISH SEA RIM

Irish Sea Rim Environmental & Scientific Observatory (ISRESO)

What is it?

Blue Economy Services framework Measuring baseline services & conditions.

- Aquaculture
- Wind and marine energy potential
- Water chemistry, temp and quality
- Ecosystem services
- Fisheries & Biological systems



How will it do it:

<u>Develop blue economy opportunities across & around the Irish Sea</u>

Grid interconnectors, test facilities, data acquisition, SME supply chain, enterprise development, innovation, research, investment, environment, planning, operational, maintenance, decommissioning, validation, connectivity, power supply (electrical interface), floating data buoys, satellite

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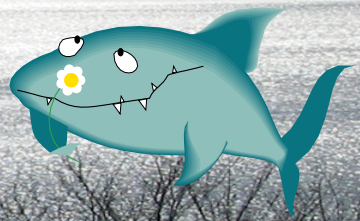
Thanks

&

Very happy to talk further :



Climate change

Younger generation & public demands

Picture: Andy Revill

Low carbon options