RENEWABLE ENERGY AND THE ENVIRONMENT

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eri environmental research institute

University of the Highlands and Islands
Oilthigh na Gàidhealtachd agus nan Eilean

North Highland College
University of the Highlands and Islands

MARINE ENERGY – RESOURCE AND RISK

- Tidal resource assessment; wave climate assessment
- Device-environment physical interaction (measurement and modelling)
- Modelling (including turbulence & array effects)
- Climatology including weather windowing (for installation & maintenance).

MARINE ENERGY – ENVIRONMENTAL AND ECOLOGICAL INTERACTIONS

- Fish habitat use and migrations (Pentland Salmon Initiative)
- Seabird ecology
- Benthic interactions
- Bio-fouling and non-native species
- Underwater noise
- Sediment distributions and dynamics.

RENEWABLE ENERGY – SOCIO-ECONOMICS

- Community engagement
- Energy balancing at regional and national scales
- Relationship between climate change and energy.

BIO-ENERGY

- Biomass supply chains (marine and terrestrial)
- Development of bio-energy tools
- Life-cycle analysis and carbon assessment.

MODELLING

- Coastal hydrodynamics: circulation and tidal currents
- Waves: climate and extremes
- Ecological: collision risk, population, movement, marine dispersal.

FIELD SURVEYS

- Settlement panels for biofouling and non-natives
- Seabird tagging & tracking, visual observations, camera deployments
- Salmon smolt tagging & tracking
- Underwater imagery: ROV, drop-down cameras and Sidescan Sonar
- Physical oceanography: ADCP, CTD, wave buoys, Xband radar, drifters, tide gauges
- Unmanned Aerial Vehicle (UAV) surveys with digital and near-infrared cameras
- Seabed mapping: multi-frequency sonar.

MERIKA
Marine Energy Research Innovation and Knowledge Accelerator

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OUR GOAL:

To develop an internationally-recognised hub of multi-disciplinary renewable energy and related environmental research, informing policy-making and regulation, and contributing to the growth of a sustainable renewable energy sector.

Biofuels

Energy Balancing

Migratory fish ecology

Seabird Ecology

Hydrodynamic and Wave Modelling

Ecological Modelling

Remote Sensing

Coastal Physical Oceanography

Seabed Characterisation and Sediment Dynamics

Benthic Habitat Mapping and Ecology

Bio-fouling and Introduced Species

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HIE
Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

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