ReNU+

Renewable Energy Northeast Universities

EPSRC Centre for Doctoral Training in Renewable Energy Northeast Universities (ReNU) is an added value doctoral training programme funded by the Engineering and Physical Sciences Research Council.

Northumbria University NEWCASTLE

Durham University

Newcastle University

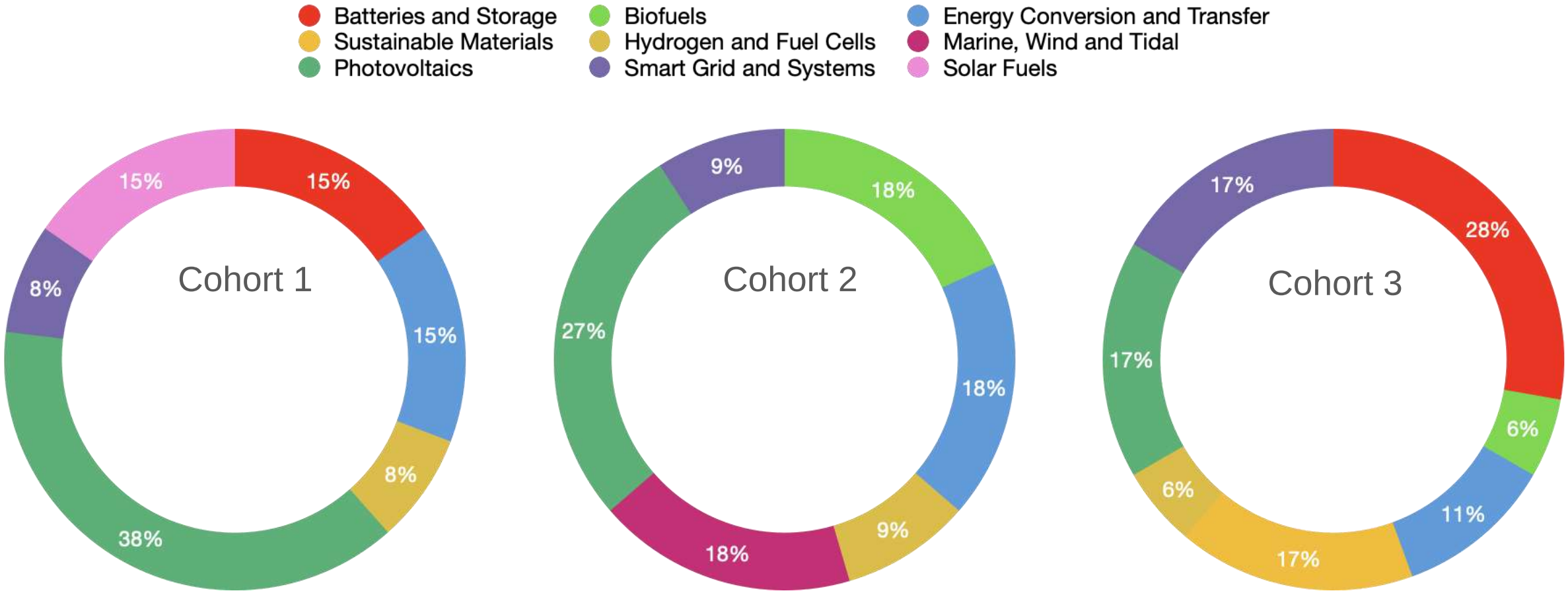
UKRI Engineering and Physical Sciences Research Council

Current ReNU Projects by theme

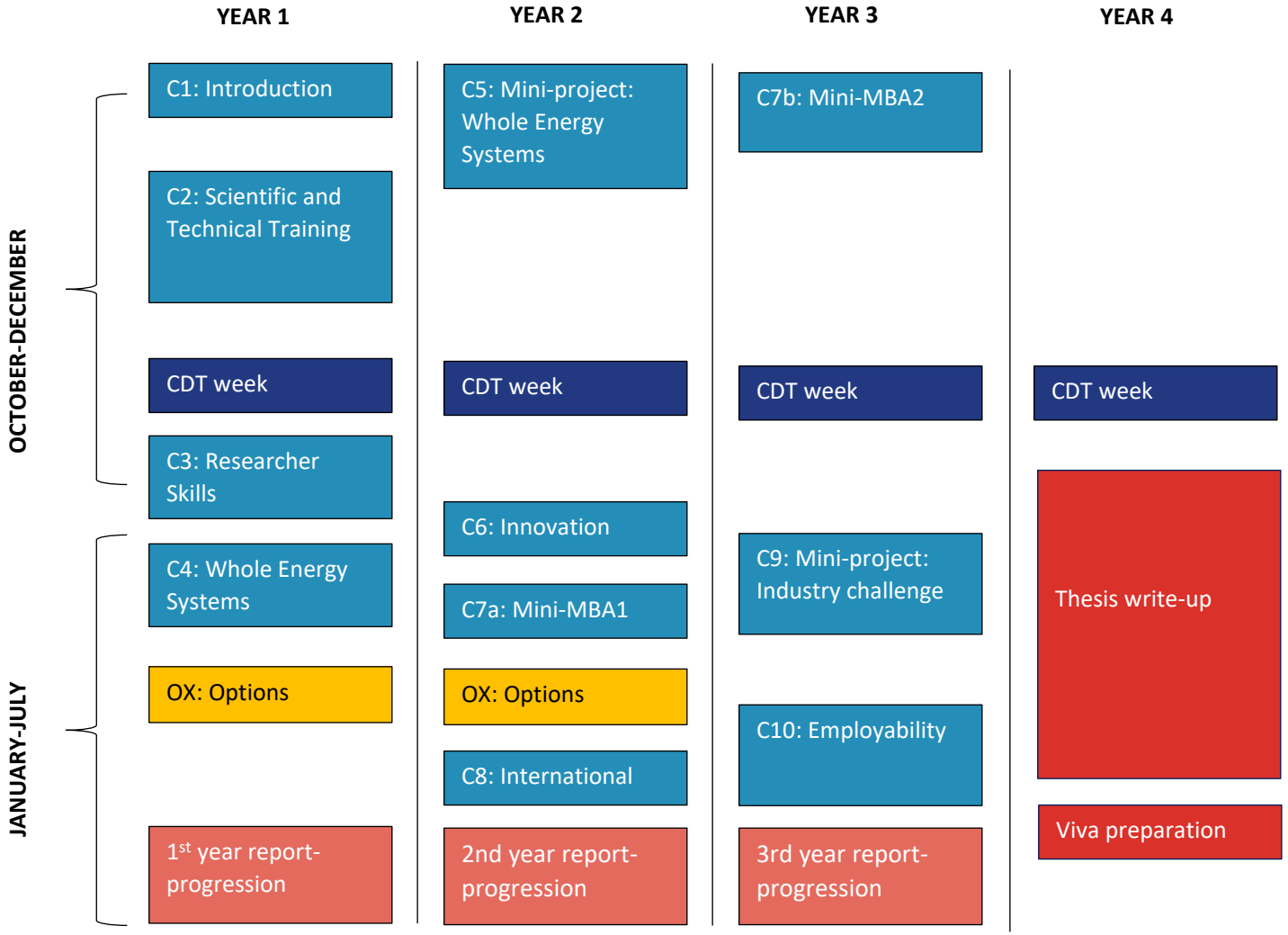
https://renu.northumbria.ac.uk/

ReNU CDT aims to:

- Create a pipeline of highly skilled doctoral graduates.
- Drive forward innovation in small scale renewable and sustainable distributed energy.



ReNU Training programme (6 months total)



This is no ordinary PhD!
In addition to working on a research project at the frontiers of science and engineering, doctoral candidates benefit from significant additional training over the course of a 4-year programme.

This includes business and innovation training, energy policy and opportunities for international travel.

ReNU is accredited by

IOP Institute of Physics

ROYAL SOCIETY OF CHEMISTRY

Equality Diversity and Inclusion

- Fairness in recruitment (monitoring and reporting statistics)
- Representation across gender, ethnic groups, LGBTQ+, non-conventional career paths
- Inclusive environment: listening to needs, part time working, support for disabilities
- Mental Health, RRI and EDI training

Outcomes: above benchmark performance in terms of representation across protected characteristics. Attracting applicants who share our values.

Awareness that there is always room for us to do more!

Leverage

1. Industrial Partnerships

direct cash: £0k in 2019 to £300k cumulative in 2022

in-kind: >£1M

2. Development of the research eco-system

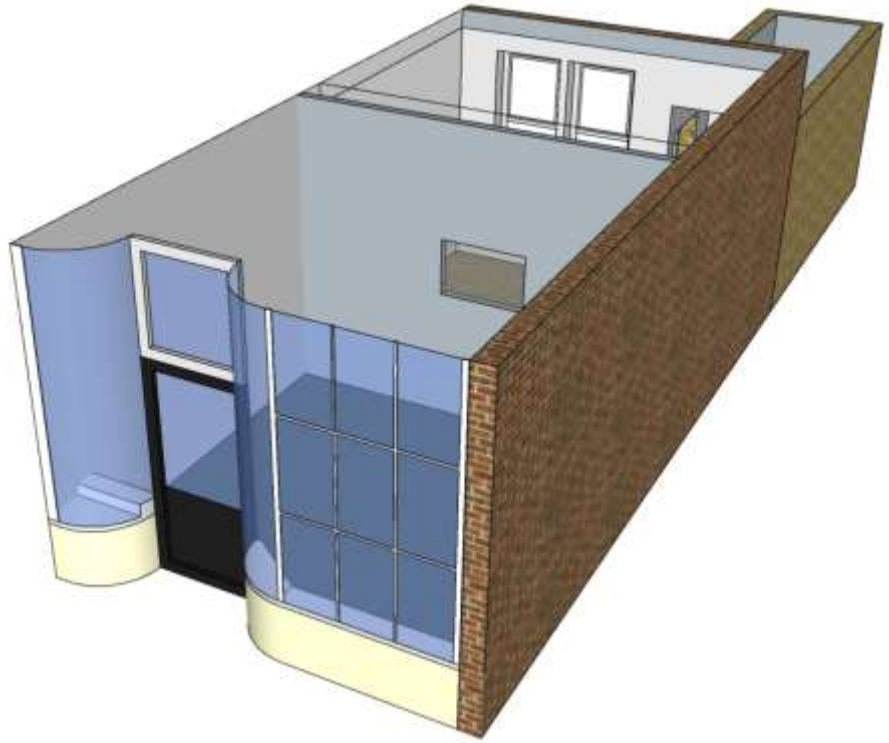
>£10M in UKRI awards across the consortia including strategic equipment grants (and hopefully one more to follow 😊)

a. Durham University's EPSRC Core Equipment Award (£850k, EP/V036386/1)
b. Advanced Functional Materials Spectroscopy (£691k, EP/V029053/1)
c. North East Ultrafast Transient Absorption Spectroscopy Facility (£902k, EP/W006340/1)
d. UKRI Interdisciplinary Centre for Circular Chemical Economy (£4.4M, EP/V011863/1)
e. Solution-processed inorganic thin film photovoltaic devices (£2M, EP/V008676/1)
f. Reimagining Photovoltaics Manufacturing (£986k, EP/W010062/1)

Several recently appointed ECRs are supervising our CDT candidates.

Industry case studies

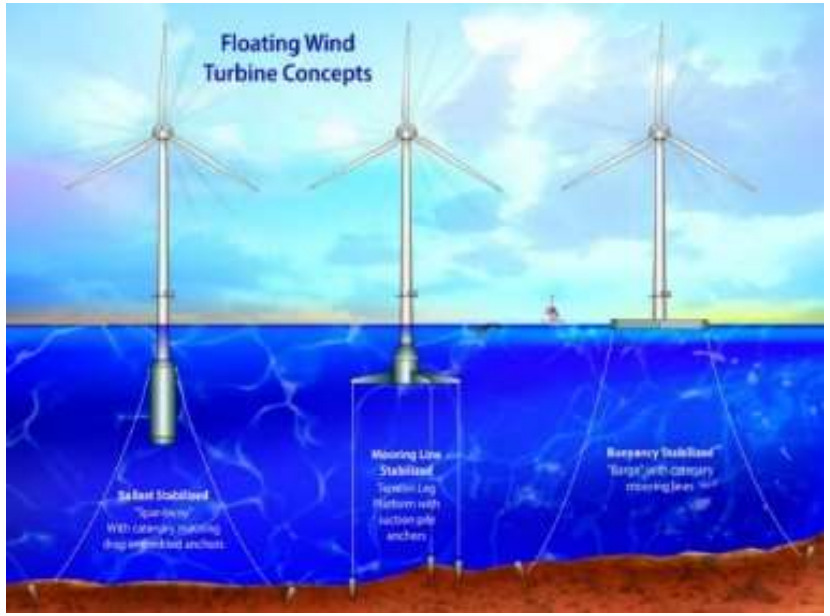
Decerna is a specialist renewable energy consultancy that helps its clients achieve tangible carbon dioxide emissions savings. This includes both residential and commercial buildings in which air infiltration is a major source of heat loss. To gain further insight into this problem, Decerna provided ReNU students with a brief to evaluate a broad range of approaches to quantifying air infiltration in buildings. In just a short period, the ReNU students were able to identify key application criteria and create a qualitative model of air infiltration based on using a tracer gas. This facilitated an assessment of the likely feasibility of the approach and highlighted key technical and commercial factors for Decerna to further investigate through subsequent potential projects.



Industry case studies

PhD Studentship with Offshore Renewable Energy Catapult: Rigid-flexible coupled multi-body dynamic research of floating offshore wind turbines

This project aims to improve dynamic responses prediction accuracy of floating offshore wind turbines (FOWT) and benefits UK's ocean renewable energy development. This research investigates rigid-flexible coupled multi-body dynamic mechanism and FOWT's dynamic characteristics. The project research takes advantage of theoretical analysis, programming and numerical simulation methods. This project is supported by ORE Catapult in a collaborative way. ORE Catapult will provide placement opportunity for the PhD student and offer advice and guidance to the research project to a wider offshore wind industry.



ReNU+ a focused training programme

Renewable Energy Northeast Universities

Summary

ReNU's training programme offered a rounded and balanced approach to wider skills required for net-zero.

Proposition

ReNU+ uses a best-of-best approach to deliver a more focused and highly targeted approach to achieving net zero emissions.

ReNU+ students will be Carbon Champions with this capability driving their careers

ReNU+ address research challenges at the intersection of sustainability and Net-Zero

Themes

- Carbon champion
- S-LCA
- Mini-MBA
- Innovation
- RRI
- Data and AI
- Sustainability training
- Equality, diversity and inclusivity
- Policy
- Green finance
- What specific training do partners wish? i.e. not just skills attributes

ReNU+ skills and reskilling

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Our ReNU training programme is accredited by the RSC and IoP with our postgraduate researchers working towards Registered Scientist (RSci) Status.

ReNU+ will accelerate CO_2 emissions savings by creating a more diverse pipeline of specialist graduates. This leverages industry research (McKinsey, BCG) which evidences more profitability and innovation at companies with better and more diversity

- BAME scholarships
- Childcare fund
- Link opportunities JobCentrePlus / retraining workforce (nationwide), access to training and mentoring to apply for ReNU+ studentships
- Support for candidates returning to education

Diversity Wins: How inclusion matters

ReNU+ benefits to businesses

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- Access to Talent (annual Summer School, CDT week, internships, group projects)
- Access to Know-How, Expertise & Facilities across three higher education institutes to address your research challenges and upskill your staff
- Access to Network of Commercial Partners (membership of Industry Advisory Board)
- Product testing & development, modelling and simulations, sustainability evaluation….
- Access to IP (license to/ownership of IP produced in studentship)
- Subsidised research (“buy one, get one free”, Key Partner status)
- Public engagement (NUSTEM etc.)
- Promote your organisation

ReNU+ how you can contribute

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1. Co-design and co-supervise a research project aligned with the needs of the business (cash contribution)
2. Hosting CDT students for up to 6 months to conduct research set by you or access to facilities to support a research project
3. Setting an Industry Challenge for a cohort, promote systems thinking, teamwork and leadership
4. Membership of the CDT's strategic advisory board to support and direct the strategic vision
5. Attending and contributing during CDT weeks, industry seminars and the summer school, inspire the next generation and explore collaboration opportunities
6. Enabling access to data/information to support CDT teaching & project work
7. Deliver a training module (ethics, innovation, leadership, metrics / tools, policy, EDI, finance, IP…) to provide the skills you need from our post-graduates

- In kind £ contribution typically £5-20k per year for 8 years, depending on contributions and status
- Cost of a studentship is £120k total for 4 years, includes stipend, fees (UKRI rate) and research and training grant

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