



Hydrogen Integration for  
Accelerated Energy Transitions

# HI-ACT Guiding Principles

DRAFT FOR CONSULTATION

22/06/26

Prepared by:

Dr Claire Brewis (Newcastle University)  
Ms Sian Allister (Cardiff University)

On behalf of HI-ACT Executive Board:

Prof Sara Walker, University of Birmingham  
Prof Jianzhong Wu, Cardiff University  
Prof David Flyenn, University of Glasgow  
Prof Adam Hawkes, Imperial College London

HI-ACT Guiding Principles has been developed with close reference to the good practice outlined in: Barr, S., Burningham, K., Golding, S., Guilbert, S., Hartley, S. (2023) *ACCESS Guiding Principles V4*, March 2023

## Navigating the Guiding Principles

The Guiding Principles provide a common understanding of HI-ACT culture and ways of working. They are intended to shape and guide HI-ACT activities in a non-prescriptive way. There are four Sections:

**Section 1. Context and an Overview** of HI-ACT Guiding Principles

**Section 2. An Introduction to the Guiding Principles** and outline of the core elements

**Section 3. Principles into Practice** – a guide to operationalising the Guiding Principles

**Section 4. Activity Matrices** with examples of applying the Principles to key activities.

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## SECTION 1 HI-ACT ‘Guiding Principles’

**HI-ACT Guiding Principles provide a common understanding of HI-ACT culture and ways of working. The Principles shape and guide all activities underpinning HI-ACT’s mission, vision and ambition set out in our original Hub proposal to EPSRC.**

**Our vision** is to ensure that hydrogen is appropriately integrated in a future equitable energy system, through holistic multi-disciplinary research which address integration challenges. We will achieve this through a fundamental shift in critical analysis of the role of hydrogen and alternative liquid fuels (HALF) in the context of the overall energy landscape, through the creation of robust research which is co-created with stakeholders.

**Our mission** is to deliver impactful research, through co-creation with stakeholders, which delivers an evidence base for hydrogen integration in the future net-zero energy transition.

**Our ambition** is to:

- Identify and understand the interactions and interdependencies for hydrogen integration, across the environment, people, infrastructure, technologies and regulatory bodies and governments.
- Deliver new approaches to understanding the risks, opportunities, and resultant pathways of integration of HALF.
- Investigate innovative solutions to hydrogen integration from a whole energy systems perspective.
- Create a community of hydrogen integration practice, to understand the complexity and equity issues in delivering a transition which protects people and planet.
- Ensure the community offers an excellent environment, respecting equality diversity, and inclusion, to mentor and develop the next generation of research leaders.

At the outset of the project, we agreed three **core values** that underpin how we work:

Integrity

Openness

Equality

We resolved that we would deliver our mission with **HI-ACT behaviours** of:

Candour

Kindness

Authenticity

Culture of sharing

Trustworthy

Team player

Interoperability

Transparency

Passion-motivation and drive

## HI-ACT ‘Guiding Principles’ – An Overview

### What are our Guiding Principles?

The HI-ACT project (Hub) has four Guiding Principles:

1. Equality, Diversity, and Inclusion (EDI)
2. Responsible Research and Innovation (RRI)
3. Knowledge Co-Production (KCP)
4. Efficiency and Effectiveness (EE)

### Why are these Guiding Principles important?

HI-ACT is a complex project being delivered by researchers of different disciplines from multiple universities, across national geographies and with a huge variety of academic, industry and policy making stakeholders.

The four principles (EDI, RRI, KCP, EE) play three key roles within HI-ACT.

1. Act as a common thread running through and stitching together different parts of the project.
2. Inform, shape and guide all HI-ACT activities.
3. Ensure we continue to think of new, improved ways to deliver HI-ACT's mission.

We should take all four Guiding Principles into account in our decision-making and practice, identifying and learning from points of synergy and tension

### How might these Guiding Principles be incorporated into HI-ACT-related activities?

These pages have been developed to take those working on the HI-ACT project and/or those who form part of the wider HI-ACT community through the process of how to incorporate these principles into HI-ACT activities. Section 3 Principles into Practice, explains how the principles can be operationalised including a process for building the Principles into our activities. Section 4 provides Activity Matrices with examples of how the principles can be applied in our eight main work activities:

Research	Stakeholder engagement	Flexible Funding	Meetings and events
Communication and dissemination	People development	Resource management	Strategy

The focus on these key work areas does not preclude the Guiding Principles from being applied to other activities conducted across HI-ACT. The Guiding Principles is not a rule book but a prompt to apply our core values and behaviours in our day-to-day activity.

## SECTION 2 Introducing the HI-ACT Guiding Principles

The stated ambition for HI-ACT is that all our work and activities across the programme will be informed and shaped by four fundamental, Guiding Principles.

These are:

- Equality, Diversity, and Inclusion (EDI);
- Responsible Research and Innovation (RRI);
- Knowledge Co-Production (KCP);
- Efficiency and Effectiveness (EE)

While each of these principles has its own set of individual, distinct features, or core elements (see below), often they are inextricably intertwined. Section 2 describes commonalities, synergies and trade-offs between the Guiding Principles.

Our specific aims within HI-ACT are to:

Foster a safe, welcoming, and inclusive culture across HI-ACT, by promoting equality and valuing diversity, to protect the rights and dignity of all our colleagues, partners, and stakeholders, and ensure everyone feels valued for who they are.

Carry out our work using a dynamic and iterative process in which all stakeholders in our research and innovation become mutually responsive and responsible for both the research process and its outcomes.

Adopt and promote a knowledge co-production approach that involves partnership and collaboration between academic researchers and other knowledge holders in the design, generation, and dissemination of research designed to address environmental problems.

Deliver our mission efficiently and effectively using our resources of time, money and effort efficiently, whilst delivering high quality, impactful and valuable work.

## Principle 1 Equality, Diversity, and Inclusion (EDI)

In HI-ACT, we aim to foster an inclusive culture that values diversity and maintains a working and social environment in which the rights and dignity of our staff, researchers, PhDs, partners, and stakeholders are respected. HI-ACT's [EDI Plan](#) has been produced by our EDI working group and is aligned with UKRI's Equality, Diversity and Inclusion Strategy (2020–2025)<sup>1</sup>. It lays our aim and vision for EDI, our governance, how we will carry out monitoring and measuring success and our reporting.

The key objectives of our EDI plan are:

1. to improve diversity in the membership of the Hub, participation in our events, and membership in our advisory board,
2. to create an inclusive and welcoming research hub that individual's dignity is respected,
3. to eliminate discrimination and bias, and
4. to provide equal opportunity and support individuals to thrive.

EDI considerations have been highlighted for 6 elements of HI-ACT activities.

### Core elements of Principle 1: Equality, Diversity, and Inclusion (EDI)

**Flexible and remote working.** Adopting working arrangements which allow employees to vary the amount, timing and location of work to promote inclusion for those with caring responsibilities and health concerns and to support a better quality of life. These are reflected in flexible working patterns, recruitment, events and meetings.

**Dignity at work.** Fostering a Hub-wide workplace characterised by mutual respect where everyone feels valued and is treated with dignity and fairness. Evident through exemplary leadership, training and awareness, reporting and response mechanisms, prompt support and intervention, accountability and celebrating success.

**Career development.** Creating an inclusive and supportive environment that fosters the professional growth and development of all Hub members through needs assessment, training and development opportunities, mentorship and guidance, particularly for under-represented groups.

**Recruitment.** Maintaining and improving the diversity of the people involved in the centre, through embedding EDI principles in the whole cycle of recruiting staff, researchers and students and sharing best practice with our own institutions.

**Flexible Funding.** Building EDI into our flexible funding process, which engages new and often less experienced researchers into the Hub. We ensure the communications, guidance, timing, application and appraisal processes address EDI considerations.

**Communications and events.** Ensuring we optimise accessibility and inclusivity through inclusive language, images and inclusivity of contribution in our communications materials, and reflecting diversity of needs when planning our events.

## Principle 2 Responsible Research and Innovation (RRI)

HI-ACT is committed to delivering Responsible Research and Innovation. Our approach reflects the RRI principles laid out by the European Commission (EC) in 2014:

‘The ongoing process of aligning research and innovation to the values, needs and expectations of society’ *Rome declaration, November 2014,*

and adopted across European research since then.

Responsible Research and Innovation (RRI) can be defined as: a dynamic, iterative process in which all stakeholders in research and innovation become mutually responsive and responsible for both the research process and its outcomes. As a result science and technology become more ethical, sustainable and socially beneficial.

To help embed RRI in the research and development process the EC set out 6 key themes and HI-ACT have adopted these as a framework for our RRI activity: **ethics and integrity, open access, governance, science education, public engagement** and gender equality. Our Guiding Principle 1. on Equality, Diversity and Inclusion includes gender equality.

### Core elements of Principle 2: Responsible Research and Innovation (RRI)

**Ethics and research diversity.** Research, including its outcomes and the way it is conducted should be morally grounded and acceptable to society. Honesty, accountability, fairness and good stewardship should be fundamental to our research.

**Open access.** Much of scientific research is costly to access. Open access science has many benefits, encouraging collaborations, catalysing innovation, and ultimately improving the quality of research. Scientific results and data should follow the FAIR principle of being Findable, Accessible, Interoperable and Reusable.

**Governance.** RRI principles should be embedded in governance arrangements that are both robust and also flexible and able to adapt to changes reflecting the unpredictability of research and innovation and its changeable global context.

**Science education.** The demand for highly qualified scientists is expected to continue to rise. Developing the knowledge of H-ACT researchers, our stakeholders and the public will help strengthen discussion and decision-making on research and innovation.

**Public engagement.** Involving stakeholders and the public in the process of research and innovation helps to ensure the results meet the values, needs and expectations of society. To optimise its value this involvement needs to take place as upstream in the process as possible.

\*RRI section draws on RRI Tools Shaping the future: A Responsible Research and Innovation policy brief

## Principle 3 Knowledge Co-Production (KCP)

HI-ACT is a consortium with representation from a variety of academic institutions with researchers from different disciplines, including mechanical engineering, chemical engineering, computing engineering and social science. We operate an internal system of collaborative working groups in the form of work packages (WP1-4), special interest groups (Connection Queue, Long Duration Energy Storage, Regional Energy Systems Planning), as well as groups with an interested in EDI and ECR development. This provides a mechanism for co-creating and designing research.

For an external perspective, we have developed and maintain a Stakeholder Matrix including other energy hubs and their researchers, energy operators and industry, government departments, policy makers and community groups. Any of our stakeholders may influence or be involved in developing and delivering our research.

We are mindful of the contributions that colleagues from across HI-ACT and from our stakeholder base make to our knowledge co-production.

### Core elements of Principle 3: Knowledge Co-Production (KCP)

**Breadth of perspectives.** Improving key research decisions, both in terms of efficacy and impact, by opening our research up to a broad range of actors, knowledge, and perspectives.

**Collective understanding.** Recognising the value of building relationships and networks with academic, industry, policy making, and community partners who share a common understanding to co-produce knowledge.

**Equitable participation.** Sharing information and power in the production of new knowledge.

**Interdisciplinary by design.** Beginning knowledge co-production “upstream” in the research process so it can impact research questions and trajectories.

**Innovation and boundary-pushing.** Co-producing knowledge through an iterative, flexible, and reflexive process that should involve risk taking and experimentation, highlighting new areas of research and understanding.

**Capacity building.** Supporting training across institutions through methods exchange, stakeholder engagement and enabling mobility (through secondments and PhDs).

**Sharing knowledge.** Ensuring our knowledge outputs are not limited to publications but include models, data sets, inputs to policy making, reports, blogs and webinars that can inform a variety of partners and stakeholders.

## Principle 4 Efficiency and Effectiveness (EE)

HI-ACT is a resource-bound project funded with public monies and we are committed to delivering our mission efficiently and effectively.

**Efficiency is process-focused** – achieving a result with the least amount of wasted time, money or effort.

**Effectiveness is goal-focused** -achieving an intended high-quality result measured by whether the final output actually solves the problem or hits the target.

Being mindful of efficiency and effectiveness helps us determine how to allocate scarce resources. It also plays a vital role in ensuring our work is high quality, impactful and has value to society.

### Core elements of Principle 4: Efficiency and Effectiveness

**Operational efficiency.** Streamlining day to day management. Using central digital platforms for real time data sharing, project tracking and communications, to eliminate bottlenecks.

**Resource and budget efficiency.** Eliminate duplication of effort. Sharing expensive equipment, datasets and specialised personnel across institutional boundaries, rather than purchasing each separately.

**Cognitive and disciplinary efficiency.** Accelerating the integration of different fields, through meetings, such as work packages and special interest groups to enable team members from different and diverse disciplines to work together with a common remit.

**Administrative and legal efficiency.** Fast-tracking structural roadblocks using standardised templates and guidance e.g. quarterly reporting, guidelines on branding, data management (use of AI, co-authoring, research integrity).

**Strategic problem solving.** Pooling resources, methodologies and expertise to address large scale multi-disciplinary challenges, by aligning different sectors whether, academic, industrial or policymaking.

**Synergistic breakthroughs.** Combining diverse methodologies, data sets and perspectives to generate novel insights and paradigm shifts, including our stakeholders.

**Knowledge transfer and adoption.** Translating rigorous evidence into clear, relevant and actionable formats tailored to real-world contexts, developed and/or communicated with the stakeholders who can apply the findings.

**Capability and capacity building.** Actively developing infrastructure, leadership and individual skills while continually reviewing the institutional knowledge-sharing pipeline.

## SECTION 3 Principles into Practice

### Commonalities

Our Guiding Principles share a set of common characteristics and operational principles, for example, they:

- **challenge business as usual** and require new ways of thinking and doing
- should be **central considerations** in all HI-ACT activities
- involve individuals, administrative units, and whole organisations **reflecting on and changing their practices**
- **are contextual** and require the use of both appropriate evidence and judgement
- are **dynamic and evolving**, requiring regular personal and collective reflection on practice.

### Synergies and Trade-offs

While the four Guiding Principles share several common characteristics and operational principles, it is important to recognise that there may also be significant tensions. In some contexts, putting the four principles into practice may reveal clear synergies between them, while in other contexts, it will be apparent that certain trade-offs will need to be made.

#### Examples of synergies and trade offs

##### Synergies

- RRI and EDI – common ground with respect to the benefits and advantages of online meetings/events
- EDI and KCP – common emphasis on inclusion, pluralism, diversity of voices/perspectives, equality of opportunity, sensitivity to power relations, mutual respect etc.
- KCP and EE – sustainability policies/strategies are better (more effective and equitable) when co-produced

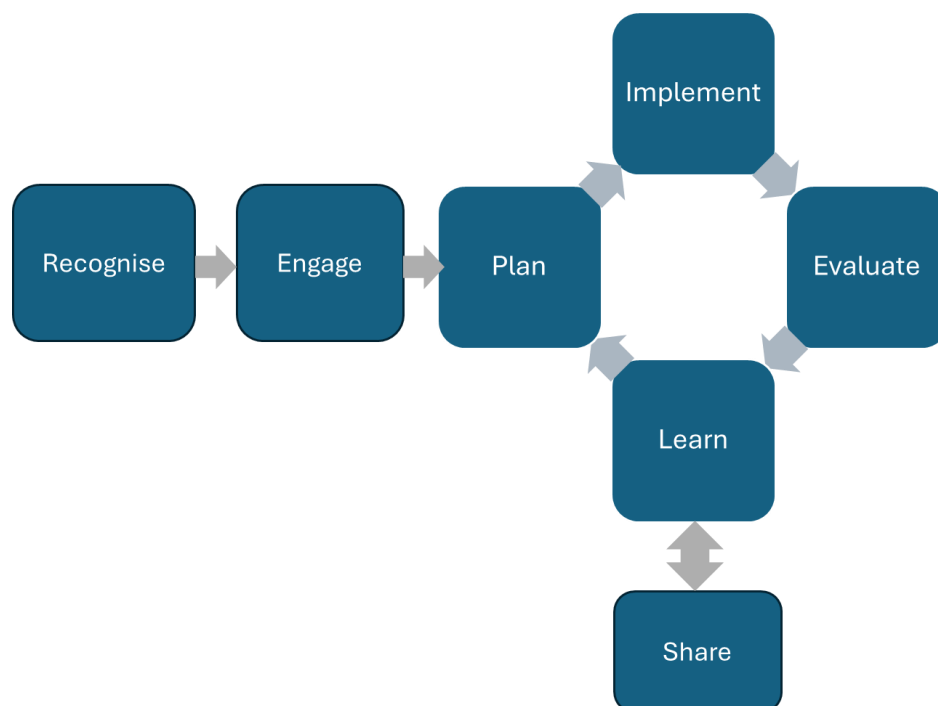
##### Trade-offs

- EE and KCP/EDI – clear tension with respect to the value and impact of in-person meetings and events. In-person meetings potentially more interactive, conducive of co-production and building trust, whilst online meetings tend to be more inclusive from an EDI perspective and more sustainable from travel-related carbon emissions perspective
- EE and KCP - co-production can be inefficient because bringing together stakeholders takes co-ordination, debate and time. However, the outcome is better accepted because multiple stakeholders have contributed into the design and solution

## The Process

Putting the Guiding Principles into Practice requires an ongoing process of reflection. The diagram and text below, provide guidance for how and when to incorporate EDI, RRI, KCP and EE considerations into your HI-ACT activities.

### Diagram of the Process



### Principles into Practice – Some Key Pointers

#### 1. Recognise

- a) Recognise that Equality, Diversity and Inclusion (EDI), Responsible Research and Innovation (RRI), Knowledge Co-Production (KCP) and Efficiency and Effectiveness (EE) are integral to our activities within (and beyond) HI-ACT
- b) Incorporating these principles into your work may be challenging

#### 2. Engage

- a) Be proactive and engage with these challenges and willing to critique own your (and others') practices
- b) Seek out 'how to' and 'best practice' guidance (see Activity Matrices for examples)
- c) Engage with people who have an interest in the process or will be affected by decisions and plans you make -
- d) Seek out marginalised/minoritised voices (who are less likely to be represented in academic journals and other 'traditional' forums)

#### 3. Plan

- a) Plan how to incorporate EDI, RRI, KCP and EE into your HI-ACT activities (and beyond), and at all stages of the process

- b) Remember that plans will be contextual and activity-specific requiring the use of both appropriate evidence and judgement
- c) Be mindful of the synergies and potential tensions/trade-offs between EDI, RRI, KCP and EE
- d) Where EDI, RRI, KCP and EE have not been integrated at an early stage, review activities to determine how they can be embedded in future activities

#### **4. Implement**

- a) Enact your plans
- b) Be flexible, adaptive, and open to feedback and new ways of working

#### **5. Evaluate and Reflect**

- a) Review activities against plans
- b) Examine and acknowledge what went well and what could be improved next time
- c) Proactively seek feedback and engage in self-reflection

#### **6. Learn, Share and Repeat**

- a) Incorporate your learnings into planning for future activities
- b) Consider how to best share learnings with wider HI-ACT community and beyond

## **Making Decisions**

These Guiding Principles are not intended to be too prescriptive. When deciding on the best course of action to take – for example, whether to hold a meeting/workshop/event in-person or online – we suggest adopting a considered and balanced approach to decision-making, on a case-by-case basis. In some instances, a hybrid meeting might be an appropriate compromise, in others it might not.

Incorporating the Guiding Principles of Equality, Diversity, and Inclusion (EDI); Responsible Research and Innovation (RRI); Knowledge Co-Production (KCP); Efficiency and Effectiveness (EE) into HI-ACT activities will inevitably lead to some tensions arising and trade-offs being made. However, there are more synergies between EDI, RRI, KCP and EE than there are tensions. Not all meetings with a co-production requirement need be in-person. Similarly, sustainability considerations do not mean you should never travel to an in-person meeting/conference, even when there are hybrid options.

Adopting new ways of working will sometimes be challenging, and you are not required to always get it right. What you are required to do, however, if you haven't done so already, is to engage with these issues, reflect on your own current practices and start taking steps to embed the core principles of EDI, RRI, KCP and EE into all your activities, across – and if possible, beyond – the HI-ACT programme. To this end we hope these Guiding Principles provide inspiration and useful guidance.

## SECTION 4 Activity Matrices for key activities

### Activity Matrix I – Research Activities

These suggested considerations and encouraged actions relate to the design and conduct of research activities within HI-ACT:

Equality, Diversity & Inclusion (EDI)	Responsible, Research & Innovation (RRI)
<ul style="list-style-type: none"> <li>• <b>Inclusive Methodologies:</b> Designing research frameworks that accommodate participants with disabilities (e.g., providing screen-reader-compatible surveys or sign-language interpreters for interviews).</li> <li>• <b>Bias Mitigation:</b> Implementing blind or double-blind peer review processes and using AI de-biasing tools during literature reviews and data analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Open Science Practices:</b> Depositing raw data, code, and methodologies into public, open-access repositories to allow for verification and replication.</li> <li>• <b>Anticipatory Ethics:</b> Conducting formal "ethical foresight" exercises at the start of a project to map out potential long-term dual-use or societal harms of a new technology.</li> </ul>
Knowledge Co-creation (KCP)	Efficiency & Effectiveness (EE)
<ul style="list-style-type: none"> <li>• <b>Participatory Action Research:</b> Designing a study where community members act as co-researchers who help formulate hypotheses, collect data, and analyse results.</li> <li>• <b>Co-Authored Papers:</b> Including industry collaborators and non-academic stakeholders as named co-authors on peer-reviewed journal articles.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Shared Research Repositories:</b> Reusing pre-existing, well-curated datasets for secondary analysis rather than spending resources collecting identical data from scratch.</li> <li>• <b>Scoping Reviews:</b> Conducting rigorous preliminary scoping reviews to ensure a proposed research question hasn't already been comprehensively answered elsewhere.</li> </ul>

## Activity Matrix II – Stakeholder Engagement

These suggested considerations and encouraged actions relate to HI-ACT's engagement with all our stakeholders:

Equality, Diversity & Inclusion (EDI)	Responsible, Research & Innovation (RRI)
<ul style="list-style-type: none"> <li>• <b>Accessible Venues &amp; Formats:</b> Hosting engagement sessions in physically accessible locations and offering hybrid/virtual options with live captioning.</li> <li>• <b>Decentralized Outreach:</b> Going into community-specific spaces (e.g., local community centres, neighbourhood forums) rather than expecting all stakeholders to travel to an academic institution.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Multi-Disciplinary Advisory Boards:</b> Including industry, academia, and policy makers alongside technical experts on project advisory panels.</li> <li>• <b>Early-Stage Consultation:</b> Engaging downstream users and affected communities during the ideation phase, before research protocols are locked in.</li> </ul>
Knowledge Co-creation (KCP)	Efficiency & Effectiveness (EE)
<ul style="list-style-type: none"> <li>• <b>Co-Design Sandpits:</b> Facilitating intensive, multi-day interactive workshops where academics, policymakers, and end-users build solutions together from scratch.</li> <li>• <b>Joint Problem Formulation:</b> Hosting pre-project roundtables where external partners help define the core problem statement before any research proposal is drafted.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Tiered Engagement Matrix:</b> Segmenting stakeholders based on influence and interest to ensure resources are focused on deep partnerships, while using newsletters for low-touch cohorts.</li> <li>• <b>Standardized Feedback Templates:</b> Using automated, structured digital surveys immediately after engagement sessions to collect actionable data instantly.</li> </ul>

### Activity Matrix III – Flex Fund Administration

These suggested considerations and encouraged actions relate to the design of the call for applications, the process of reviewing applications, and awarding Flexible Funds.

Equality, Diversity & Inclusion (EDI)	Responsible, Research & Innovation (RRI)
<ul style="list-style-type: none"> <li>• <b>Targeted Ring-Fencing:</b> Reserving a specific percentage of a funding pot for early-career researchers to level the playing field.</li> <li>• <b>Low-Barrier Applications:</b> Providing alternative application formats (such as video or audio submissions) for researchers with neurodivergence or visual impairments.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Public Interest Milestones:</b> Tying funding tranches to the successful completion of societal benefit reviews.</li> <li>• <b>Mandate Open-Access Research Outputs:</b> Publish all research via the HI-ACT website so all interested parties can access the research without delay or charges.</li> </ul>
Knowledge Co-creation (KCP)	Efficiency & Effectiveness (EE)
<ul style="list-style-type: none"> <li>• <b>Seed Funding for Co-Design:</b> Offering small, flexible micro-grants specifically to fund the relationship-building phase required to co-create a larger research bid.</li> <li>• <b>Experts by Experience:</b> Include project academics with specialist knowledge to provide insights to Flex Fund assessment panels.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Express Stream Grants:</b> Implementing a rapid-review, single-stage application track for micro-grants under a certain monetary threshold to slash bureaucratic delays.</li> <li>• <b>Streamlined application process:</b> Using a common application and assessment process for all Flex Funds, using standardised scoring scheme.</li> </ul>

### Activity Matrix IV – Meetings (including workshops and events)

These suggested considerations and encouraged actions relate to both ad hoc and regular ‘internal’ project meetings, externally-facing workshops, working groups and events, as well as general interactions with colleagues, partners and stakeholders.

Equality, Diversity & Inclusion (EDI)	Responsible, Research & Innovation (RRI)
<ul style="list-style-type: none"> <li>• <b>Balanced Panels:</b> Ensuring diverse representation among speakers, chairs, and facilitators.</li> <li>• <b>Inclusive Scheduling:</b> Planning events around major religious holidays, school drop-off/pick-up times, and across inclusive time zones for international attendees.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Hybrid-First Formats:</b> Prioritizing virtual or hybrid attendance to reduce the collective carbon footprint associated with international flights.</li> <li>• <b>Deliberative Formats:</b> Moving away from passive lectures toward active workshops designed to debate the societal and ethical implications of the presented research.</li> </ul>
Knowledge Co-creation (KCP)	Efficiency & Effectiveness (EE)
<ul style="list-style-type: none"> <li>• <b>World Café Formats:</b> Utilizing rotating, informal discussion tables that break down hierarchical barriers between "experts" and "laypeople."</li> <li>• <b>Joint Facilitation:</b> Ensuring that workshops are co-chaired by an academic and a non-academic partner to balance power dynamics in the room.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Lean Agendas:</b> Adopting structured meeting formats with explicit time limits per topic.</li> <li>• <b>Collaborative gatherings:</b> Bringing together the right personnel to identify inform, initiate, progress and disseminate our research.</li> </ul>

## Activity Matrix V – Communication

These suggested considerations and encouraged actions have been formulated in relation to the formal communications strategy for HI-ACT, which covers predominantly externally-facing communications. This guidance is, however, also relevant for less formal, internal communications.

Equality, Diversity & Inclusion (EDI)	Responsible, Research & Innovation (RRI)
<ul style="list-style-type: none"> <li>• <b>Diverse Imagery:</b> Utilizing imagery and graphics that authentically represent a diverse range of people in terms of race, gender, age, and disability.</li> <li>• <b>Plain Language Summaries:</b> Publishing plain English summaries alongside academic papers to make research findings accessible to non-academic communities and those with lower literacy levels.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Balanced Reporting:</b> Explicitly communicating the limitations, uncertainties, and potential risks of research findings, avoiding media hype or exaggeration.</li> <li>• <b>Open Licensing:</b> Publishing all educational materials, software code, and briefs under Creative Commons or open-source licenses (e.g., MIT, GNU).</li> </ul>
Knowledge Co-creation (KCP)	Efficiency & Effectiveness (EE)
<ul style="list-style-type: none"> <li>• <b>Co-Produced Toolkits:</b> Collaboratively writing practical "how-to" guides or toolkits with practitioners, industry, and other academics to ensure research is useful on the ground.</li> <li>• <b>Shared Intellectual Property:</b> Creating open-access policy briefs co-branded by HI-ACT and the participating stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Content Repurposing:</b> Creating a "hub-and-spoke" model where a single comprehensive report is efficiently broken down into multiple blog posts, infographics, and a short video clip.</li> <li>• <b>Using AI for initial Meeting Notes:</b> Recording project meetings, with Chair's agreement, and use AI with the transcript to produce first draft version of Meeting Notes.</li> </ul>

## Activity Matrix VI – People Development

These suggested considerations and encouraged actions relate to activities designed to support the development of HI-ACT employed early career researchers (ECRs) across HI-ACT, as well as providing prompts for experienced colleagues to reflect on their own personal and professional development.

Equality, Diversity & Inclusion (EDI)	Responsible, Research & Innovation (RRI)
<ul style="list-style-type: none"> <li>• <b>Diverse Mentorship Schemes:</b> Pairing junior staff from underrepresented backgrounds with senior leaders who can champion their career progression.</li> <li>• <b>Diverse Interview Panels:</b> Ensuring hiring panels are demographically diverse to reduce affinity bias during recruitment. <b>(in institution)</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Interdisciplinary Rotations:</b> Funding temporary secondments for scientists to work within industry or other academic institutions to broaden their perspective.</li> <li>• <b>ECR strategy:</b> Work with our ECRs to identify development needs and opportunities</li> <li>• <b>Data Management Plans:</b> Training research staff on HI-ACT data management planning to manage data security</li> </ul>
Knowledge Co-creation (KCP)	Efficiency & Effectiveness (EE)
<ul style="list-style-type: none"> <li>• <b>Experiential Learning Exchanges:</b> Funding reverse-sabbaticals where academics spend time working inside industry/ government departments, and practitioners spend time embedded in research labs.</li> <li>• <b>Co-Creation Fellowships:</b> Establishing institutional fellowships specifically designated for collaborative duos (one academic, one external practitioner).</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Collaborating with other institutions:</b> Delivering joint development conferences and events to reduce costs, optimise collaborative opportunities.</li> <li>• <b>Hands-on experience:</b> Providing Early Career researchers with development through participating on flex fund assessment; leading Flex Fund projects; representing HI-ACT at energy conferences/ exhibitions; delivering research spotlights at All Hands events; leading SIGs.</li> </ul>

## Activity Matrix VII – Resource Management

These suggested considerations and encouraged actions relate to resource management of HI-ACT:

Equality, Diversity & Inclusion (EDI)	Responsible, Research & Innovation (RRI)
<ul style="list-style-type: none"> <li>• <b>Equitable Space Allocation:</b> Allocating laboratory space, offices, and equipment based on objective project needs rather than seniority or institutional politics.</li> <li>• <b>Digital Equity Access:</b> Providing adaptive software and specialized hardware (e.g., ergonomic tools, braille displays) out of a centralized institutional budget.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Sovereign Data Governance:</b> Managing and storing project data in compliance with strict privacy regulations (like GDPR) and ethical data-sovereignty frameworks.</li> <li>• <b>Clear milestones and progress reporting:</b> Using HI-ACT Workplan, work package meetings, and quarterly reporting to ensure clear, agreed milestones are delivered.</li> </ul>
Knowledge Co-creation (KCP)	Efficiency & Effectiveness (EE)
<ul style="list-style-type: none"> <li>• <b>Co-Located Staffing:</b> Allocating budget to hire a stakeholder engagement project officer whose job is to bridge the gap between partners.</li> <li>• <b>Reciprocal Library/Data Access:</b> Granting formal affiliate status and institutional library/database access to non-academic project partners.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cloud-Based Document Architecture:</b> Shifting local server storage to unified cloud ecosystems (SharePoint, Microsoft 365) to eliminate version-control confusion and save time.</li> <li>• <b>Invite only essential stakeholders:</b> review meeting membership to ensure only essential personnel attend.</li> </ul>

## Activity Matrix VIII – Strategy

These suggested considerations and encouraged actions relate to the development and delivery of strategy within HI-ACT:

Equality, Diversity & Inclusion (EDI)	Responsible, Research & Innovation (RRI)
<ul style="list-style-type: none"> <li>• <b>Accountability KPI Metrics:</b> Setting concrete, measurable targets for diversity in leadership positions.</li> <li>• <b>Values Alignment:</b> Explicitly embedding EDI as a core foundational pillar in the corporate mission statement, rather than treating it as an afterthought.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Societal Challenge Alignment:</b> Aligning the organization’s long-term research portfolio directly with global challenges like the UN Sustainable Development Goals (SDGs).</li> <li>• <b>Co-Responsibility Frameworks:</b> Structuring joint ventures and industry partnerships to require shared adherence to strict RRI frameworks.</li> </ul>
Knowledge Co-creation (KCP)	Efficiency & Effectiveness (EE)
<ul style="list-style-type: none"> <li>• <b>Mission-Oriented Strategies:</b> Framing research strategies around the shared HI-ACT mission rather than institution -specific academic goals.</li> <li>• <b>Reward Restructuring:</b> Overhauling HI-ACT key performance metrics (KPIs) to place equal value on co-created impacts and policy changes alongside traditional citations.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Working with others with a common purpose:</b> Minimising duplication and optimising relevant collaboration, with stakeholders including energy consortia and industrial / policy making partners.</li> <li>• <b>Communicating HI-ACTs position:</b> Ensuring HI-ACTs position on hydrogen integration are well-communicated to our stakeholders to inform their decision-making.</li> </ul>