BEIS Industrial Energy Efficiency Accelerator (IEEA)

Opportunities for UK Industry

Agenda

IEEA Programme Overview

Target Technologies

Eligibility Criteria

Competition Process, Timeline and Applications

Next Steps

Programme Team

FUNDED BY:

Department for Business, Energy & Industrial Strategy

LED BY:

CARBON TRUST

PARTNERS:

JACOBS

amec foster wheeler

SUPPORTED BY:

Innovate UK
Knowledge Transfer Network

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IEEA Objectives and Information

Funder: Department for Business, Energy & Industrial Strategy

Department for Business, Energy & Industrial Strategy

Key Objectives:

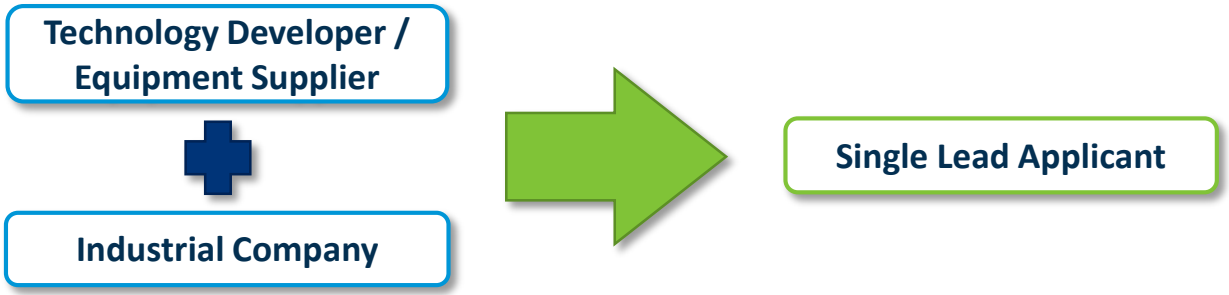
1. **Strengthen the global competitiveness of UK industry** while simultaneously delivering decarbonisation targets
2. **Deploy industrial EE technology demonstration projects** by working with project partners to mitigate risks
3. **Commercialise innovative industrial EE technologies (and processes)** through incubation support
4. **Unlock large scale private sector investment** in EE technologies

Key Information:

- **Programme value**: £9.2 million
- **Timeline**: 4 Years (2017-21)
- **Technology / sector neutral**
- **Success metric**: Total UK impact (energy and carbon savings)

IEEA – What is it?

- **Overview:** A competition which will identify and accelerate deployment of new energy efficient technologies (and processes) to UK industry
- **Key focus:** Innovations with large cross-sector energy and carbon reduction impact, either from novel technologies or known technologies in new sectors
- **Target sectors:** All industrial and manufacturing sectors (UK demonstration sites only) – both primary and pilot production lines
- **Applicants:** The programme is open to **private sector companies and universities**; public sector bodies are not eligible.
- **Funding:** Funding will be awarded on a competitive basis, with awards typically up to £1m for 10-15 projects (40-60% capital support of eligible costs)



IEEA – Why is it needed?

Innovation is valued for UK industry competitiveness but barriers exist:

Market Risk	› First mover risk & advantage
Operational Risk	› Management focus is often on best practice instead of innovation › Innovations are often deployed only in new build plants due to concerns around product risk
Capital Constraints	› Raising funding for innovation deployment can be a challenge, particularly for first movers › Growth / operational projects tend to be prioritised over energy savings opportunities
Knowledge & Deployment	› Lack of awareness can result in viable technologies in one sector not being deployed in another › Small companies may have viable technologies but are unable to find demonstration sites

Why take part?

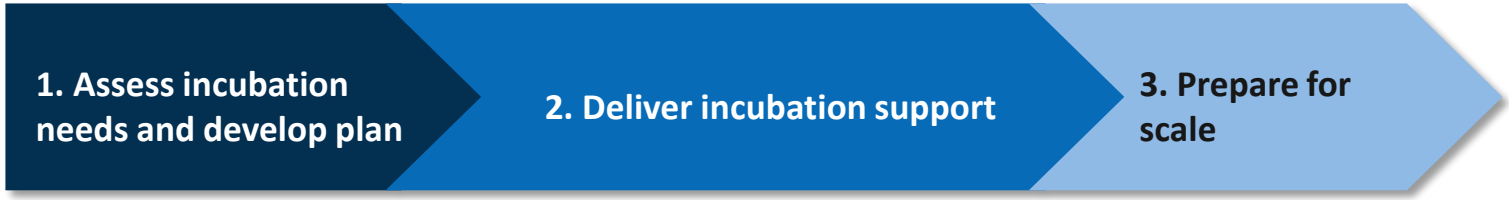
Industrial Company	
1.	**Awareness** of promising technologies
2.	Understand **innovator needs**
3.	**Capital** contribution
4.	**Project support** for a demonstration
5.	**Reduce energy use**, costs & emissions
6.	Enhance **competitiveness**
7.	Gain **first mover** advantage
8.	**Reputational** benefits

Technology Developer	
1.	Understand **industry needs**
2.	**Capital** contribution
3.	Receive **incubation support** for commercialisation
4.	Access **investor** networks
5.	Benefit from **positive press**
6.	Increased **market confidence**
7.	Potentially secure **new IP**

	Project Support	Incubation Support
Industrial Company	✓	✗
Technology Developer	✓	✓

Incubation support is also available

The technology developers in successful project applicants will have access to the Carbon Trust's bespoke incubation offering:



- **Assess project incubation needs**
- Prioritise and develop a **bespoke incubation** plan to address key adoption, commercialisation and deployment gaps

Prioritised support across 8 core areas:

- Market
- Sales & business development
- Strategy & business planning
- Technology & intellectual property
- Product
- Supply chain and operations
- Team
- Funding

Support for up to **6 months after the project**:

- Skills strengthening
- Business model refining
- Marketing literature
- Awareness raising
- Building sales pipeline
- Assess to financing

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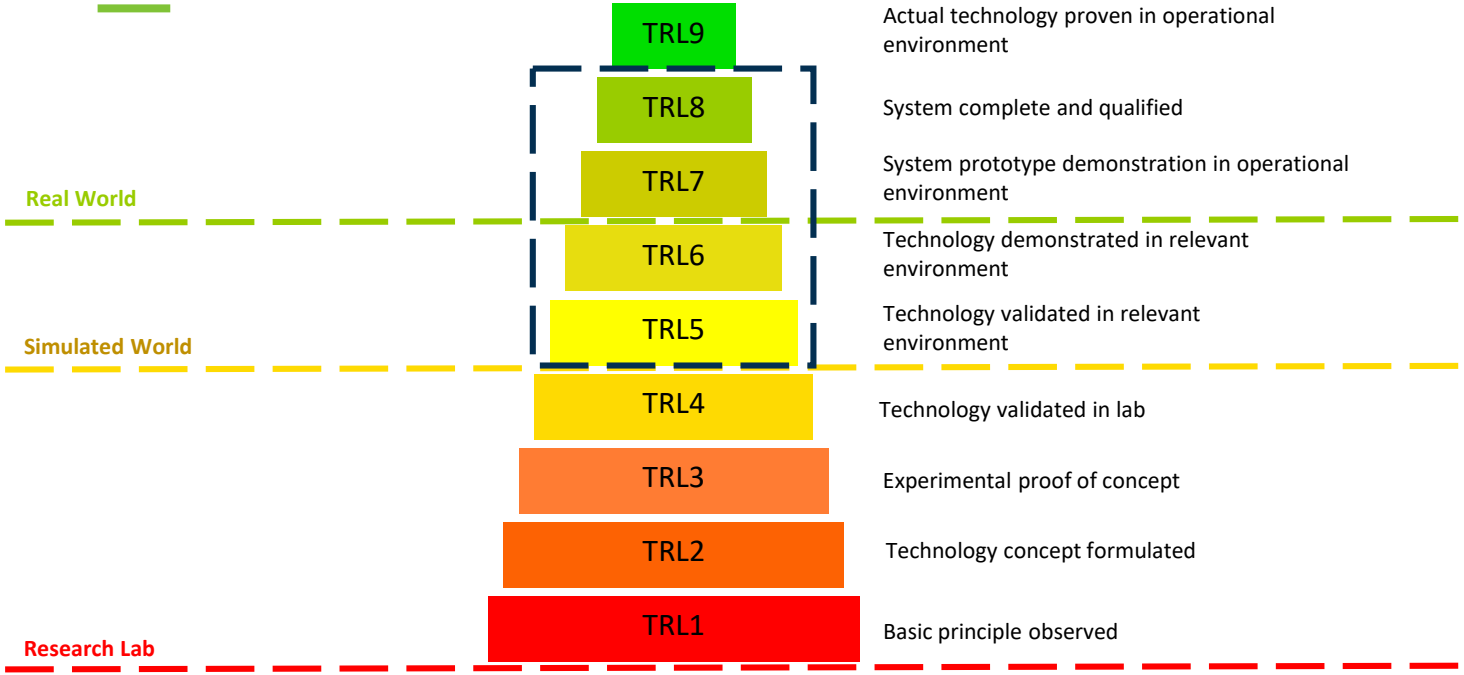
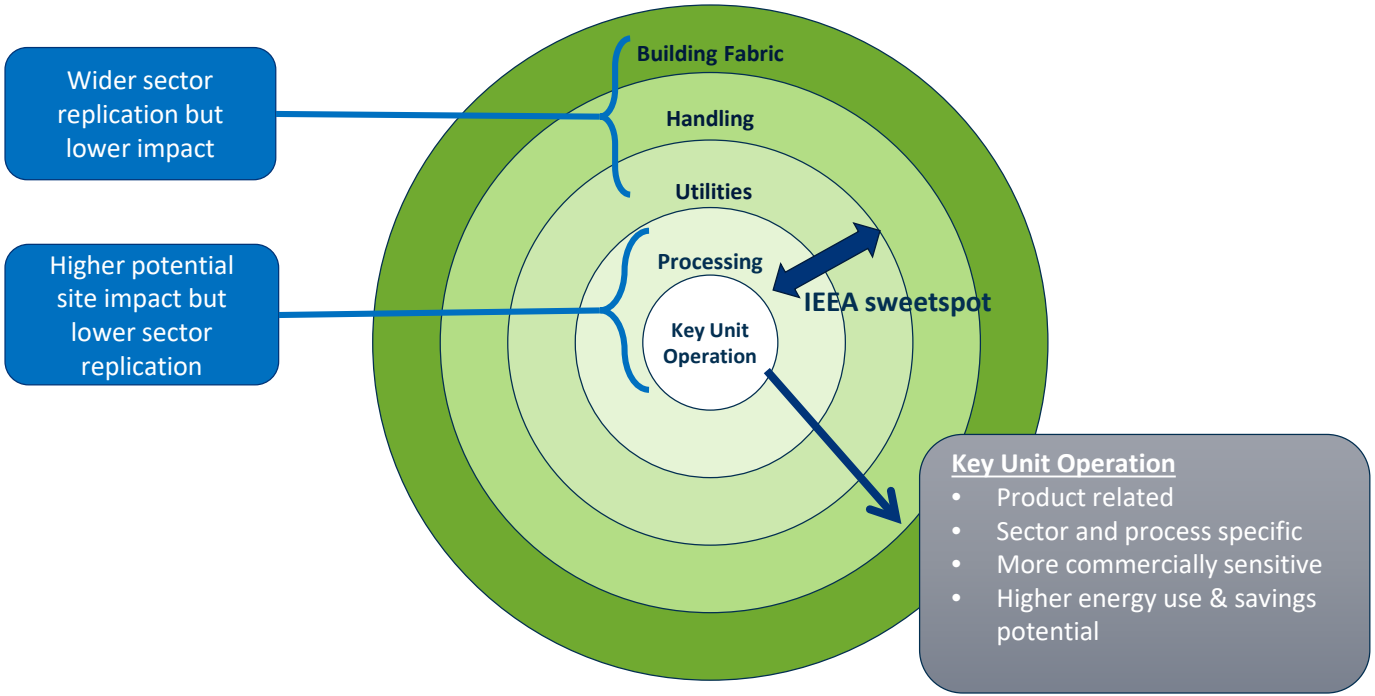
TRL focus between 5 - 8



Technologies which are TRL 9 in other geographies, or other sectors, may also be considered for support

Focusing on technologies with wide cross-sectoral impact



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Themes

Outcomes

Outcomes	Process Heating	Process Control, Automation and Optimisation	Process Equipment	Alternative Materials, Sources and Utilities
Reduce the need for energy	• Insulation • Low temperature pasteurisation	• Humidity / temperature control • Integrated electrical controls	• Pre-treatment • Pre-conditioning • Good equipment design	• Additives to raw materials • Low-energy products • Redesign of process equipment
Use energy efficiently	• Induction heating • Waste heat recovery	• Moisture profile control • Tunnel Pasteuriser Optimisation • Handling processes	• More efficient dewatering • Efficient screening • Servo drives	• Heat Pumps • CIP – Novel technologies • Utilities generation efficiency
Alternative sources / methods	• Heat pumps • CHP • Infrared heating	• Ultrasonic Cleaning • Advanced Electrolysis Techniques	• Microwave Drying • Energy saving separation • Microfiltration and Ultrafiltration	• Electrification of processes • Induction heating • Superheated Steam

Technologies can be cross-sectoral or not

IEEA – What is it Not?

Buildings related technologies

On-grid electricity generation technologies

On-site renewables

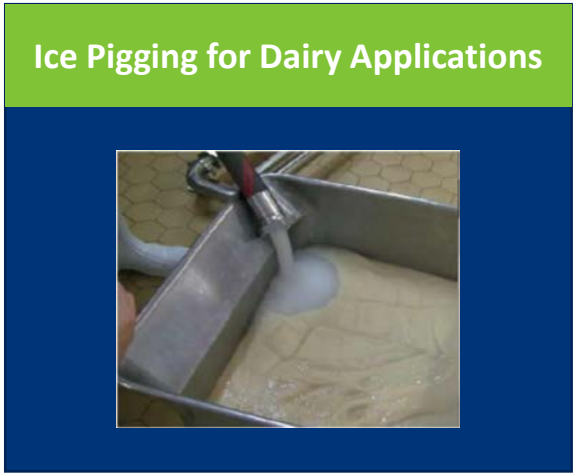
Carbon Capture & Storage (CCS)

Local authority projects (but note that local authorities can propose a UK site for technology implementation)

Recently added to programme scope: water and waste sectors; data centres; process intelligence / smart optimisation systems; pilot production lines

Case Study 1: Ice pigging for dairy applications

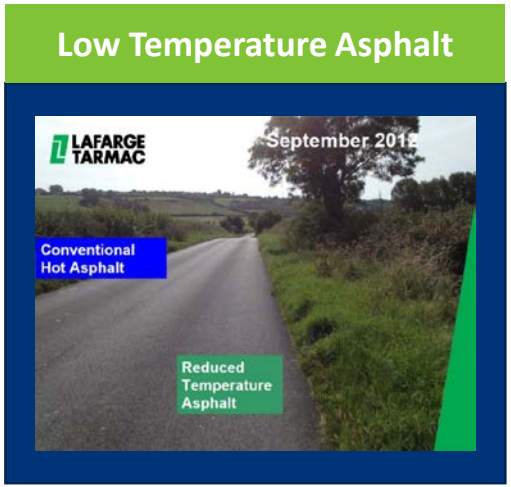
Method of cleaning pipework using an ice slurry



- **Main Applicant**: University of Bristol
- **Developer:** Pure Clean Ice Pigging
- **Partners**: Yeo Valley, BV Dairy
- **Technology description:**
  - Used for recovering saleable product from production lines
  - Also reduces time needed for cleaning, allowing for increased production (fully integrated)
- **Initial TRL**: 5-6
- **Final TRL:** Fully commercialised
- **Demonstration Capital Cost**: £497,000
- **Funding received**: £198,800 (40%)
- **Results:**
  - 20% reduction in effluent treatment
- **Intellectual Property**: Sold to Suez

Case Study 2: Low Temperature Asphalt (LTA)

New formulations of asphalt produced at lower temperatures



- **Main Applicant**: Lafarge Tarmac
- **Partners**: Nynas, Mineral Industry Research Organisation
- **Technology description:**
  - The project developed a new approach to LTA mixes and demonstrated their in-situ performance on public roads as being equivalent to conventional hot asphalt
- **Initial TRL**: 8
- **Final TRL:** fully commercialised
- **Demonstration Capital Cost**: £680,000
- **Funding received**: £272,000 (40%)
- **Results:**
  - The results from the project demonstrated that if LTA penetrated the UK market at an equal level to the USA (21%) over the next 10 years, this would result in CO_2 savings of 259,000 tonnes
  - 14 local authorities within the West Midlands signed up to at least 20% LTA
- **Intellectual Property**: Held with Lafarge Tarmac/Nynas

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Eligibility

Tier 1 Requisites

- ✓ **Private/Academic Sectors:** The IEEA competition is open to the private sector, universities and research organisations
- ✓ **Secured match funding:** All companies and partners must have match funding, this can be in the form of capital and/or in-kind contributions
- ✓ **Secured UK demonstration site:** The project consortium must have a demonstration site secured; technology companies who do not have a demonstration site may advertise for a partner through the IEEA website
- ✓ **Novel Technology or Application:** Application of a novel technology or a commercial technology in a novel and high impact application (between TRL 5-8)
- ✓ **Industrial Focus**: The project must demonstrate benefit to the manufacturing sector
- ✓ **Sign up to BEIS T&C's:** Projects will be required to sign up to BEIS terms and conditions (the contracting party)
- ✓ **Comply with state aid rules**

Tier 2 Project Impact

Successful projects must clearly demonstrate:

- ✓ Strong energy and CO2 savings potential
- ✓ A scalable industrial application
- ✓ Commercial potential
- ✓ Ability to deliver against project plan
- ✓ Value for money

How Much Co-funding Can You Get for Your Project?

Programme Size	~£9.2m
Number of projects	10-15 projects are anticipated
Project Co-funding Available	Typical BEIS co-funding up to £1m contribution to eligible costs (potentially more for exceptional high impact projects)
Funding Intensity	Target funding intensities will typically be 40%-60% to maximise value for money
Funding Intensity Cap	Intensity capped by state aid limits i.e. combined public support cannot exceed these.

EU State Aid Guidance	Small Enterprise	Medium Enterprise	Large Enterprise
Industrial Research (earlier TRL)	70%	60%	50%
Industrial Research with collaboration uplift	80%	75%	65%
Experimental Development (later TRL)	45%	35%	25%
Experimental Development with collaboration uplift	60%	50%	40%

1. Funding intensity cap may be applied at the discretion of BEIS
2. Actual funding intensity will be subject to perceived value of the project
3. See Section 4: Aid for research and development and innovation- Article 25: Aid for research and development project (CR EU) No 651/2014

Small, Medium and Large Enterprises

To be recognized as an SME, a business must comply with the staff thresholds and the thresholds for either the balance-sheet total or the turnover.

Micro Enterprise*	• Employees < 10 persons • Annual turnover / balance sheet < €2m (approx. £1.4m)
Small Enterprise*	• Employees < 50 persons • Annual turnover / balance sheet < €10m (approx. £7m)
Medium Enterprise*	• Employees < 250 persons • Annual turnover < €50m OR balance sheet < €43m
Large Enterprise	• Employees > 250 persons • Annual turnover > €50m OR balance sheet > €43m

For details of the types of enterprise and the corresponding restrictions, please visit http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.187.01.0001.01.ENG (Annex 1 of GBER)

What are Eligible Costs?

Eligible Costs Definition	Not Covered
• Personnel Costs • Instrument, equipment • Services • Additional overheads • Other operating expenses	• Profit • Bonuses • Interest payments of any kind • Dividend payments • Loss of salaries or consultancy income • General costs • Recoverable VAT

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Documentation & Guidance

Available at www.carbontrust.com/IEEA from 1 February 2019

Application Form

Financial Proposal

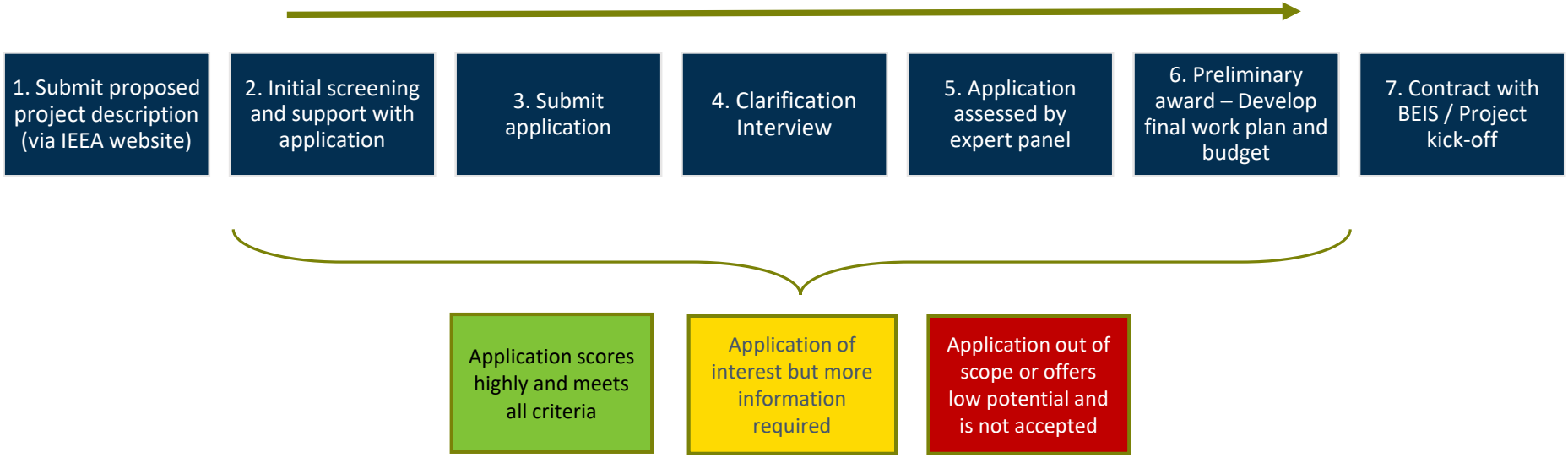
BEIS Terms & Conditions

Get in touch with us with questions!

Application Form includes:

- **Description of Technology / Process**
- **Technical credibility**
- **Impact**
- **Commercialisation Potential**
- **Proposed Method**
- **Project Plan & Risk Register**
- **Work Packages and Milestones**
- **Project Team**
- **Outputs**

IEEA Application Process (deadline April 30th, 2019)



To note:

- Initial ideas to be submitted via our website: www.carbontrust.com/ieea
- Initial screening recommendation provided to inform whether idea is within programme scope
- Application support offered by the Carbon Trust and Jacobs whilst drafting applications

Partnership support

If you do not already have a partner, the programme will support the formation of appropriate partnerships, including:

- Supporting the technology developer in ensuring the proposed project meets the scope of the programme, and how to articulate this with the potential industrial partner
- Assisting via meeting / calls communicating the purpose, value and benefit of the programme to a potential industrial partner
- Facilitating the partnership in finalising the demonstrator project application

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Next steps: get in touch with ideas!

Think about:

- Projects
- Partnerships
- The application process
- Funding

PLEASE SEND ANY ENQUIRIES TO
IEEA@CARBONTRUST.COM

Do you already have a technology to demonstrate and a site?

- We are keen to fund some demonstrations to commence as soon as possible
- Get in touch with the IEEA team to discuss your application
- Verify you are eligible – submit your initial idea
- Submit application as soon as possible
- If declined, receive feedback and re-submit if eligible
- If positive, move on to project demonstration as soon as possible

Other Programmes of Relevance

- Industrial Heat Recovery Programme – commercialised only
- Industrial Fuel Switching Programme – hydrogen, electrification, etc.
- Carbon Capture, Utilisation and Storage (CCUS) Programme Energy Entrepreneurs Fund (EEF)
- Low Carbon Heating Technology Innovation Fund
- Thermal Efficiency Innovation Fund – buildings only
- Smart Systems and Heat Programme (Energy Systems Catapult)

Further information:

https://www.gov.uk/guidance/funding-for-low-carbon-industry

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