

# BEIS Industrial Energy Efficiency Accelerator (IEEA)



26/07/2017

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- 1. IEEA: Introduction**
- 2. IEEA: Programme Details**
- 3. Case Studies: Previous IEEA**
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# Project team

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Funded by:



Department for  
Business, Energy  
& Industrial Strategy

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## IEEA overview

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**Funder:** Department for Business, Energy & Industrial Strategy



Department for  
Business, Energy  
& Industrial Strategy

### Key Objectives:

- Increase the global competitiveness of UK industry, while achieving decarbonisation
- Facilitate deployment of industrial EE projects by mitigating adoption risk
- Supporting the commercialisation of novel applications
- Leverage private sector investment

### Key Information:

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

# Why is the IEEA needed?

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Innovation is valued for UK industry competitiveness but barriers exist:

## Operational Risk

- › Management focus is often on best practices instead of on innovations
- › Innovations often deployed only in new build plants due to concerns around product risk

## Capital Constraints

- › Prioritization of growth/operational projects over energy savings opportunities
- › Funding is challenge for innovation deployment that can cost £100ks or more, especially for sectors with tight profit margins<sup>1</sup>

## Knowledge & Deployment

- › In some sectors, lack of awareness has meant many viable technologies have not been deployed that would increase industry competitiveness
- › Innovations in other sectors or internationally deployed are not always known

1. Research indicate that co-funding is critical to innovation deployment (64% of Trade Associations), July 2016, Carbon Trust

## The IEEA is technology and sector neutral

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High- and mid-intensity industries are eligible. Examples include but are not limited to:

- Pulp & Paper
- Refining
- Microelectronics
- Chemicals
- Food & Drinks
  - Bakeries
  - Maltings
  - Breweries
  - Dairy
- Plastics
- Iron & Steel
- Metal forming
- Laundries
- Paper & Pulp
- Glass
- Oil Refining
- Ceramics
- Cement

## How will the IEEA benefit you?

**IEEA**

**Industrial  
Companies**

Receive co-funding to demonstrate an innovative solution to improve your energy efficiency, reduce carbon emissions, enhance competitiveness and lower costs

**Technology  
Developers**

Receive co-funding and incubation support to commercialise your technology and demonstrate it with an industrial partner

# UK trade associations valued the benefit the IEEA offered to their member companies

“Energy is expensive in the UK; if we can become more efficient we can improve competitiveness”



“Energy efficiency is a key to long term competitiveness”



“Energy efficiency will help the UK keep pace with global markets”



“We are very supportive of the IEEA – its pragmatic and focussed approach adds real value”



“Co-funding is critical, especially for smaller businesses with less access to capital”



“Programmes such as this should be run continually”



“There is no current mechanism to demonstrate the success of these innovations”



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**1. IEAA: Introduction**

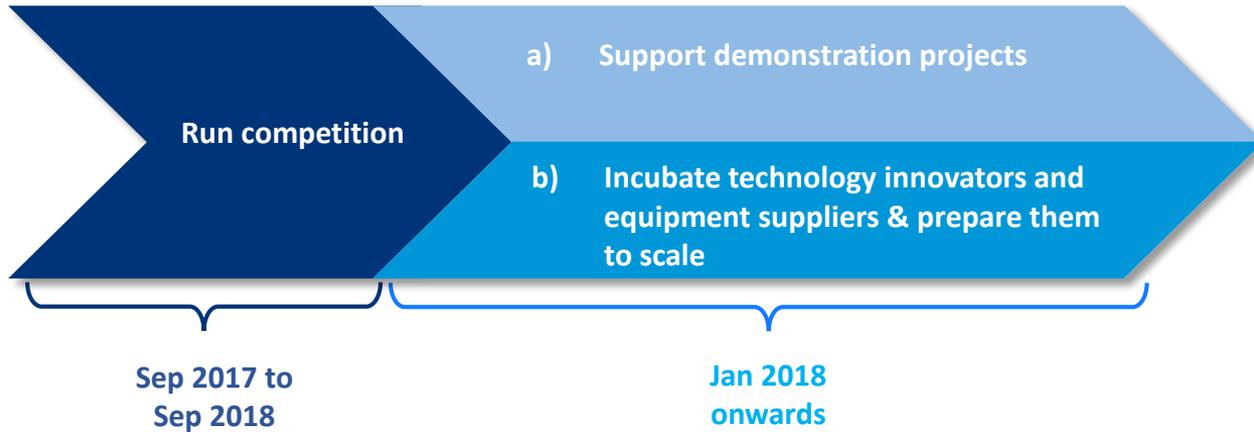
**2. IEAA: Programme Details**

**3. Case Studies: Previous IEAA**

**4. Next Steps**

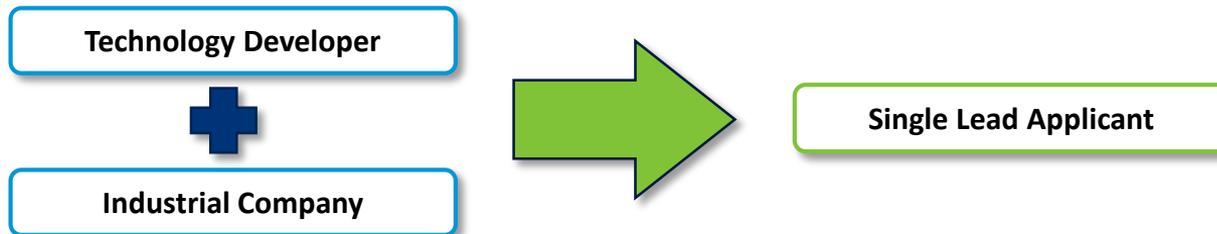
# Competition opens September 2017

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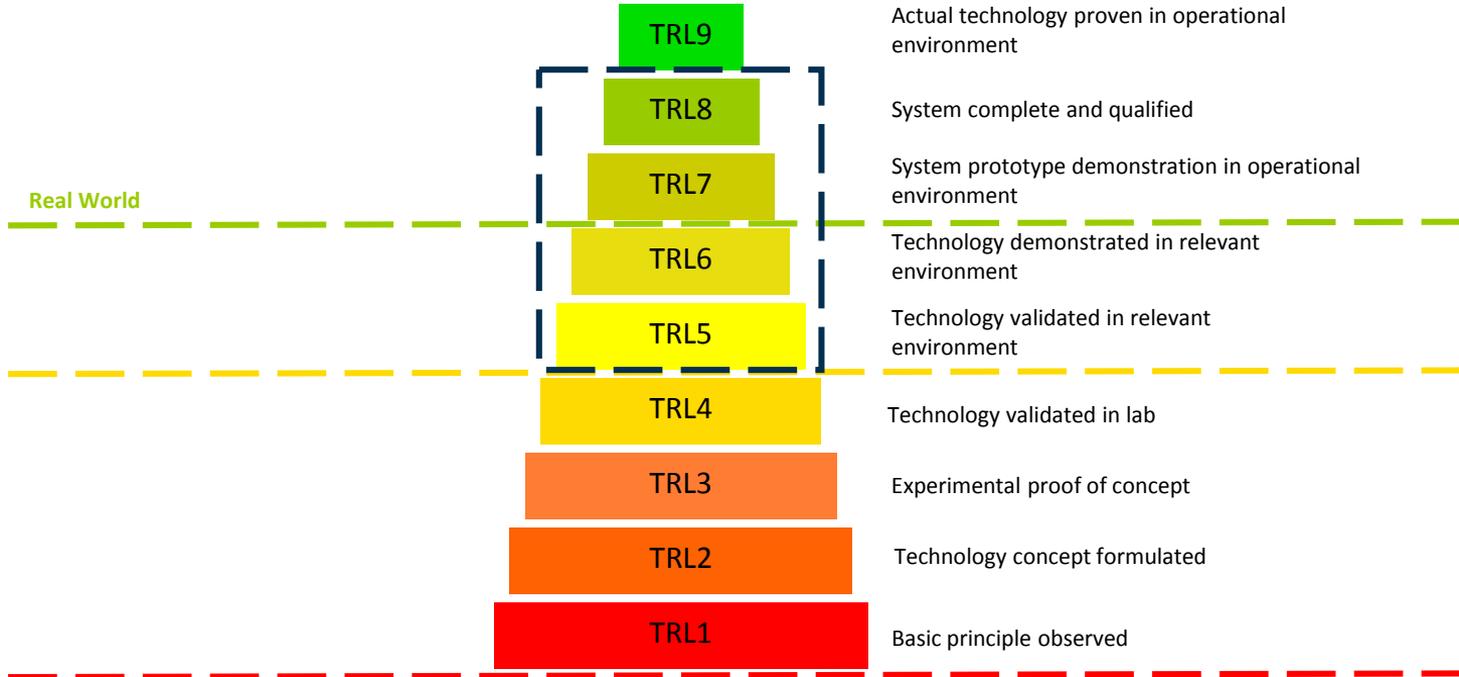


## Understanding the competition process

- Documentation will be released on the IEAA website at the end of August:
  - Funding application form
  - Guidance documents (incl. full eligibility and assessment criteria)
- A key success metric is *Total UK impact* (energy and carbon savings), considering the cross-sectorial potential. However, other factors will also be important.
- Applications will require detail on partners, co-financing, implementation plan, MRV, team structure, milestones, and deployment risk mitigation strategy



# Competition Scope



# Have you already got a partner?

## *Apply through the Fast Track*

- We are keen to fund some demonstrations to commence as soon as possible
- The **Fast Track** will target pre-existing partnerships between an industrial company and technology developer, but where co-funding is still required to make the business case
- The selection criteria will be the same as for the regular competition

# Are you eligible?

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Pairs of industry players and technology developers (headquarters can be outside UK)

## **Industrial company eligibility:**

- Demonstration site location in the UK
- Likely high and medium energy intensity sectors

## **Technology developer eligibility:**

- Technology Readiness Level 5 – 8
- Technology neutral
- Not already demonstrated in the sector in the UK (i.e. could already be applied internationally or in other sectors)

## What types of projects may be eligible?

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- Projects from all industrial and manufacturing sectors will be considered so long as:
- The technology is **novel**
- or
- The project aims to use commercial technology **in a novel way**
- and
- The result of the project will be a reduction in (or avoidance of) **energy use and/carbon emissions**

## Types of projects that will not be eligible

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- Buildings or data centre related technologies
- On-grid electricity generation technologies and water utilities
- On-site renewables
- Carbon Capture & Storage (CCS)
- Big data / analytics (except for process optimisation)
- Local authority projects (but note that local authorities can propose a UK site for technology implementation)

## Other key requirements for eligibility

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- Co-financing must have been secured (which can include in-kind contributions)
- There is strong energy and CO<sub>2</sub> reduction potential
- Project must have an agreed demonstration site in the UK (but the industrial company could be headquartered elsewhere)
- All parties must accept BEIS' Terms & Conditions The project demonstrates value for money
- A deliverable of the scheme will be the public release of a case study for each project – you will need to ensure that all parties agree to providing project information (e.g. performance data and deployment success / failure)

# How much co-funding can you get for your project?

- Up to 20 projects are anticipated
- No upper limit (but typical BEIS co-funding could be ~ £150k to £750k)

EU State Aid Guidance	Small Enterprise	Medium Enterprise	Large Enterprise
<b>Industrial Research</b>	70%	60%	50%
<b>Industrial Research with collaboration uplift</b>	80%	75%	65%
<b>Experimental Development</b>	45%	35%	25%
<b>Experimental Development with collaboration uplift</b>	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

# 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
  - Access to financing

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## Success Stories for the Previous IEAA

### Dairy - Ice Pigging



### Aggregates - Low Temperature Asphalt (LTA)



## Case Study 1: Ice pigging for dairy applications

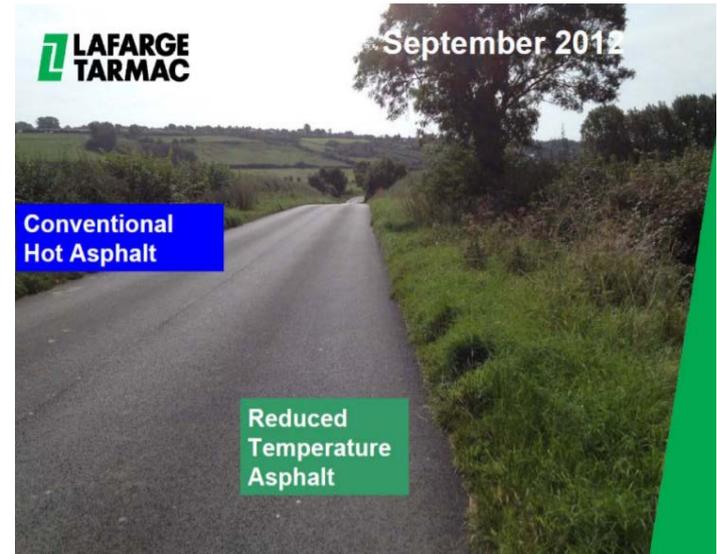
- *Ice pigging* to clean pipes using ice slurry
- Trials indicated significant potential to improve plant productivity and reduce environmental impact
- Project demonstrated savings of **£132,000 per year & 25 tonnes of water per day**
- Potential impact on dairy sector emissions reductions: **23,000 tonnes CO<sub>2</sub> per year**
- Ice pigging was deployed successfully generating large cost and energy savings

Value from	Standalone	Integrated
Product Recovery	£190,000	£190,000
Reduced downtime	N/A	£306,000
Total cost (annualised)	£58,000	£133,000
<i>Net benefit</i>	<i>£132,000</i>	<i>£364,000</i>
<i>Payback</i>	<i>1.6 years</i>	<i>2.2 years</i>

*Project undertaken by Yeo Valley, BV Dairy, Pure Clean Ice Pigging, and the University of Bristol, with support from BEIS and The Carbon Trust.*

## Case Study 2: Low Temperature Asphalt

- *Low Temperature Asphalt (LTA)* - to reduce manufacturing temperature and emissions
- Already commercial in the US (21% market penetration)
- LTA mixes demonstrated equivalent performance as hot asphalt on demonstration site in Leicestershire
- **Potential CO<sub>2</sub> savings of 259,000 tonnes** if similar market penetration as in the US in next 10 years
- **14 local authorities within the West Midlands** signed up to at least 20% LTA.



*This project was led by Lafarge Tarmac in partnership with Nynas and Atkins as part of the IEEA programme, with support from BEIS and The Carbon Trust*

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# What are some common challenges?

Common Challenge		Mitigation Actions/ Best Practice
<b>Industrial Company</b>	<ul style="list-style-type: none"> <li>• Difficulty identifying technologies suitable for demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Attend IEEA workshops and brokerage sessions</li> <li>• Utilise the list of potentially impactful and relevant technologies that will be released with the competition</li> </ul>
<b>Technology Developer</b>	<ul style="list-style-type: none"> <li>• Industrial company resistance given operational risk in integrating a technology into plant processes</li> <li>• Lack of industry visibility of near-commercial technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Provide risk, quality and HSE management strategies, as well as full documentation on previous testing and demonstrations</li> <li>• Engage early with industry on their concerns</li> <li>• Submit technologies via this <a href="#">form</a></li> </ul>

## Next steps

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The competition and fast track process will open in August/September. Application forms and supplementary materials will be provided on the IEEA [website](#)

- Technology developers can submit potential ideas via this [form](#)
- Enquiries should be sent to [info@carbontrust.com](mailto:info@carbontrust.com)



# Thank you. Any questions?

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