



Department for  
Business, Energy  
& Industrial Strategy

# Technological Scope for Energy Efficiency Studies and Deployment Projects

Industrial Energy Transformation Fund  
Application Guidance

Phase 1: Spring 2021



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# Contents

1. General principles	4
2. Technology scope overview	4
3. Technology scope detail	4
3.1 Energy use optimisation and recovery	4
3.2 Heating and cooling equipment	5
3.3 Fuel switching	5
4. Technologies that are out of scope	7
4.1 Combined Heat and Power upgrades (without fuel switching)	7
4.2 Other energy supply	7
4.3 Production of fuels	7
4.4 Repair and maintenance	8
4.5 Plant closure projects	8
4.6 Energy efficiency measures in transportation	8
4.7 Building improvements	8
4.8 New builds and expansions	9
5. Technology Readiness Levels (TRLs)	9

# 1. General principles

The Industrial Energy Transformation Fund (IETF) was established with the aim of supporting industry on the path to net zero. Through the studies and deployment strands of the competition, the IETF will award grant funding towards the cost of energy efficiency studies and deployment projects that improve industrial process energy efficiency.

To qualify as an eligible energy efficiency deployment project or study, the applicant will need to describe the energy saving potential of the technology or technologies considered. Energy savings (MWh) must be measured and take place at site level and can be demonstrated by a total fall in the energy consumed in the industrial process or (if there is a resulting change in production) the energy saving per unit produced.

The intention is to support the commercial roll out and permanent installation of technologies at industrial sites, rather than general research, development, and testing of a technology solution. In the energy efficiency deployment strand of the competition businesses can apply for grant funding towards the costs of installing or retrofitting equipment on site. Businesses can apply to the studies strand of the competition for grant funding towards the costs of feasibility and engineering studies to facilitate an investment decision in on-site energy efficiency solutions.

## 2. Technology scope overview

The IETF is technology neutral to allow applicants to explore the most suitable technology for their site and industrial process. Applications should demonstrate why the chosen technology solution is appropriate, the savings it will achieve, and check that it meets the standards and eligibility criteria specified in this guidance.

## 3. Technology scope detail

The list below provides examples, but not a comprehensive list, of the solutions and technology types that are in scope.

### 3.1 Energy use optimisation and recovery

- Industrial process control systems (for example: discrete controllers, distributed control systems, SCADA systems and programmable logic controllers) that measure, monitor and control equipment within an industrial process to improve energy efficiency.
- Individual controllable equipment within an industrial process that also improve energy efficiency (for example asynchronous drive motors).

- More efficient heat exchange, where the transferred heat is used within an industrial process on site.
- More efficient driers, ovens, kilns (including the use of microwave and infra-red heating where this is more efficient).
- Energy recovery from waste heat produced in an industrial process where the energy is utilised in an industrial process on site.
- Energy recovery from waste pressure produced in an industrial process where the energy is utilised in an industrial process on site.
- Onsite resource efficiency measures to reduce wastage and optimise use of raw materials. For example, the IETF could provide support towards the costs of adapting processes to new input materials that require less energy to process.

### 3.2 Heating and cooling equipment

The IETF will support the installation of more efficient heating and cooling technologies within industrial processes and sites where the heating or cooling is directly related to the industrial equipment being used. These installations must create energy efficiency improvements and cannot increase the GHG emissions of the process.

- As an example, increased use of waste heat to pre-heat a feed stream would be eligible under the IETF, while space heating of warehouses or site buildings would not be eligible.
- Included within this scope are cooling technologies for **data centres** that refrigerate the space between the equipment components and internal surface of the immediate insulating structure.
- **Refrigeration technologies** for the cold storage of products on site are in scope.

### 3.3 Fuel switching

The IETF will support fuel switching in the energy efficiency deployment strand of the competition, where it can be demonstrated that the outcome of the switch delivers energy efficiency improvements. Fuel switching is only permitted in instances where the switch delivering energy efficiency improvements is also to a less carbon intensive fuel that is also not a higher carbon intensity than the gas grid. Further guidance is provided in table 1.

**Table 1: Eligible energy efficiency fuel switches**

From	To
Fossil fuels more carbon intensive than the gas grid (e.g. coke, coal, oil)	Gas grid (see further details in section 4.2)
Any fuel	Electricity (see further details in section 4.2)

### 3.3.1 Scope of fuel switching support

The IETF can provide financial support towards the costs of on-site changes necessary to facilitate the fuel switch in the industrial process. This includes, for example, the costs of retrofitting equipment to use the new fuel, the cost of upgrading on-site transformers, and the cost of installing equipment to generate electricity using waste heat, waste pressure, waste process gas, or waste process liquid not suitable for transport use.

### 3.3.2 Standards for fuel switches in scope

- Fuel combustion proposals must be above 1MWth input and comply with UK air quality regulation.
- Heat pumps, where the heat is sourced from the natural environment, must achieve appropriate performance across the year to meet the proposal’s objectives. Applicants should evidence that the heat source and design of the pump meets this condition in their application.

The IETF will not provide financial support towards any adaptations required for the fuel switching that occur off-site. The costs of purchasing, installing, and maintaining renewable electricity generation equipment, such as solar panels, will also not be covered by the IETF. See ‘Other Energy Supply’ section 4.2 below for more details.

### 3.3.3 Fuel switching is not permitted where:

- It involves a switch to a fossil fuel that is more carbon intensive than the gas grid (this includes LPG). Carbon intensities are provided by the Green Book supplementary guidance, data table 2a, and used within the IETF carbon calculator estimates ([HMT Green Book](#)).
- It involves the use of compressed or liquified natural gas that must be transported to site, even if the identified source is the gas grid.
- It involves a switch to biomass or biogas. These proposals may be eligible for funding through the studies strand of the competition as a decarbonisation measure.
- The fuel switching is not part of an energy efficiency project and does not provide any energy efficiency improvements. If this is the case, consider whether the project meets

the criteria for the studies strand of the competition, in which funding for decarbonisation studies is available.

## 4. Technologies that are out of scope

The Industrial Energy Transformation Fund (IETF) aims to fund projects that will have a transformative impact on industrial energy efficiency and industrial emissions. The IETF will therefore not be funding projects where there is existing support through government schemes or where there is an established market. The IETF will also not support technologies that are not aligned with the Net Zero pathway for industry.

### 4.1 Combined Heat and Power upgrades (without fuel switching)

In the energy efficiency strand of the competition, the IETF will not provide financial support for combined heat and power (CHP) projects. CHP proposals with fuel switching are eligible to receive funding in the studies strand of the competition where it can be shown that this is a decarbonisation (rather than energy efficiency) measure, achieving on-site emissions reductions, involving an eligible fuel switch.

Alternative financial incentives and government subsidies are available for CHP projects provided the sites seek accreditation with the CHP quality assurance (CHPQA) programme, which currently provides exemptions from the Climate Change Levy and Carbon Price Floor.

### 4.2 Other energy supply

The IETF will not support the cost of purchasing, installing, and maintaining renewable electricity generation equipment such as solar panels and wind turbines, or other means of electricity generation, unless from waste heat, waste pressure, waste process gas, or waste process liquid not suitable for transport use.

The IETF will not cover the costs of linking the site to local or national gas and electricity grids or other off-site fuel supplies. Work required within the site boundaries to enable the switch may be covered however, and applicants to whom this applies are advised to speak to Innovate UK about the details of their project before submitting an application.

### 4.3 Production of fuels

The IETF will not support the costs of installation, operation or maintenance of equipment related to the production of fuels, including but not limited to:

- Hydrogen fuel

- Biogas
- Biofuel

### 4.4 Repair and maintenance

The IETF will not support projects that involve repair and maintenance that would be undertaken in the normal course of business. This includes both repairs to or replacement of components in an industrial process with an identical model or a different model with equivalent performance or capabilities. Any maintenance checks or tests required to identify such issues will also not be funded. We cannot support any costs incurred from energy efficiency measures that bring the site or equipment up to minimum legal standards.

### 4.5 Plant closure projects

The IETF will not support projects related to production capacity reductions or plant closure where it is not required in order to deploy or retrofit equipment necessary to achieve energy efficiency savings.

### 4.6 Energy efficiency measures in transportation

The IETF will not support projects that improve the energy efficiency of modes of transportation used on or off site, including but not limited to:

- Forklifts
- Automotive vehicles
- Heavy goods vehicles
- Diggers, cranes, or excavators
- Rail
- Ships, boats, barges
- Conveyor belts to transport materials or goods off-site (rather than between on-site production stages which would be in scope)

### 4.7 Building improvements

The IETF will not support projects that upgrade systems in buildings that are not integral to the industrial process itself. This includes but is not limited to:

- Building lighting
- Space heating and cooling where not integral to the industrial process



## 4.8 New builds and expansions

- Energy savings must be measured and take place at site level where there is an existing, identified operational industrial process.
- Funding cannot be used to support capital delivery of new build plant.
- Funding cannot be used to repurpose a manufacturing site for a new industrial process.
- Funding cannot be used to cover the costs of a project which aims to expand the capacity at an existing plant. An exception would be where the energy efficiency measure itself directly leads to a change in production levels or productivity, in which case the IETF can support the specific elements of the project which can be identified as energy efficiency measures and where it can be shown there is a per unit saving in energy consumed.

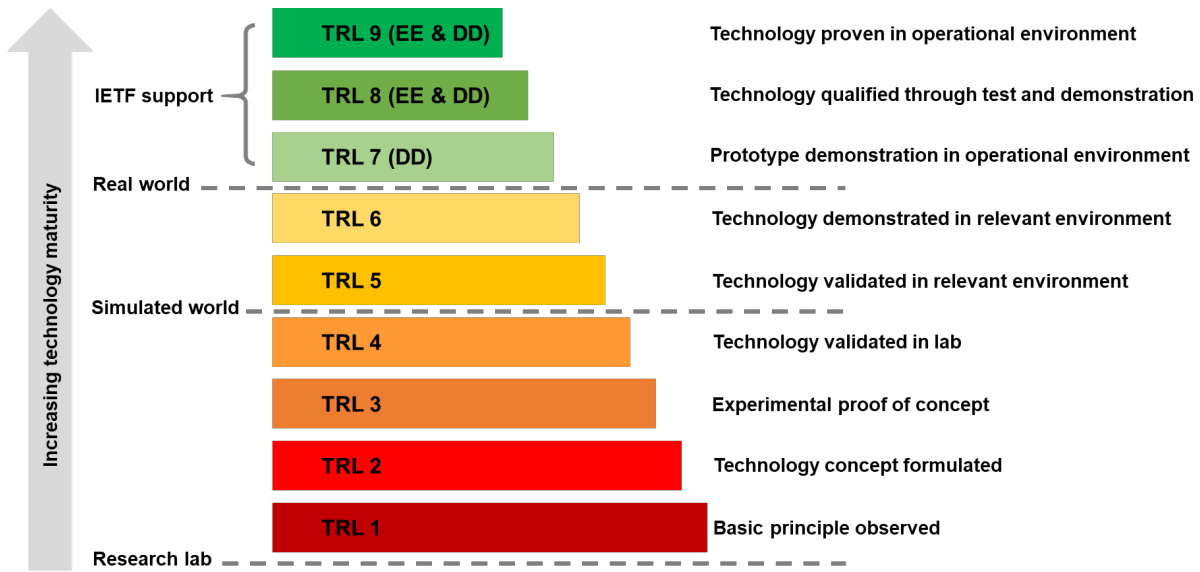
Applicants with queries about how this rule applies to their project are advised to speak to Innovate UK about the details of their project before applying.

## 5. Technology Readiness Levels (TRLs)

The intention is to support the commercial roll out and permanent installation of technologies at industrial sites, rather than general research, development, and testing of a technology solution. Figure 1 shows the stage of technological maturity, measured by Technology Readiness Levels (TRLs), that the IETF can support. This corresponds to real world demonstration of the technology. Through this competition the IETF can support pre-engineering work (studies) required to take an investment decision on whether to deploy a technology at an identified site, and further funding is available to enable this deployment.

Energy Efficiency (EE) technologies will be supported where they have been proven to work through successful operations and/or have been qualified through test and demonstration. This corresponds to TRLs of 8, 9 and above.

Figure 1: Technology Readiness Levels



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