

# CASE STUDY: ACCELERATING THERMAL ENERGY TECHNOLOGY ADOPTION



*“Helping energy innovators bring transformative, low carbon technology to market.”*

## Introduction

Energy Systems Catapult and the Birmingham Energy Institute share a commitment to promoting innovative ideas in the low carbon technology space, helping the UK achieve a clean, secure and affordable energy system.

Together, we provide broad support – from market intelligence to mechanical, chemical, electronic, electrical and commercial expertise. As a result, we’re able to help innovators with a wide range of challenges.

The Accelerating Thermal Energy Technology Adoption (ATETA) project helps energy innovators unlock new opportunities – with the ultimate goal of transforming the UK’s energy system.

This collaboration between the University of Birmingham’s Energy Institute and Energy Systems Catapult helps SMEs specialising in low carbon technologies go to market at scale.

## The challenge

**Helping SMEs overcome barriers to development:** ATETA’s goal is to help innovators solve problems that stop them from succeeding – so they can grow their businesses while helping transform the wider energy system.

To do this, the project aims to recognise the potential in products, services and processes that SMEs are developing and find ways to help them commercialise.

## The solution

Through the ATETA project, we’ve supported developments across the energy system, from solar heating devices and wind turbines to heat recovery and carbon capture. Experts assess each project’s needs and develop a roadmap for the innovator to move through technology readiness levels (TRLs). This might involve laboratory, modelling or investor research – drawing on Catapult and Birmingham Energy Institute facilities and technical capabilities as needed.



The organisations and ideas we’ve supported are confidential, but our work has included:

- Identifying products that fulfil the exacting requirements of novel processes
- Helping design services that enhance the delivery of fuel-saving technologies
- Identifying innovative processes to reduce fuel consumption
- Evaluating products and services to prove performance claims
- Characterising materials to evidence their applicability to novel uses, for example phase change properties for thermal storage
- Demonstrating how and where ideas add value to the market as commercial propositions as part of investor outreach and funding bids

Each option could be assessed for its suitability to the site and wider system ‘friendliness’, against a range of future ‘whole energy system’ evolution scenarios. The outputs from the Norfolk feasibility study included:

## The Impact

The ESIG: Distributed Energy project investigated the feasibility of utilising the public sector estate to assess the potential for stimulating the market in integrated energy efficiency solutions for campus scale sites.



## CASE STUDY: ACCELERATING THERMAL ENERGY TECHNOLOGY ADOPTION



### The Impact

**Ensuring new products and services fulfil market needs:** ATETA is having a tangible impact on innovation across the energy system, offering support for SMEs from TRL 3 to 9.

We've advised on novel trading arrangements for domestic electricity supplies and inter-trading in the energy sector. We've assisted manufacturers working to capture, store and reuse heat and power. And we've supported projects for the electrification of transport and the introduction of new transport fuels, including liquefied and compressed biogas and clean hydrogen.

With our thorough, evidence-based approach, we help companies adapt their strategies to focus on technically and commercially viable initiatives. For example, our efforts demonstrated that one product wouldn't be able to perform the intended task but could fulfil another market need – and that the new application would be cheaper to make and provide greater value to the company and the market at large. Another company was preparing for large-scale investment and saved millions after we showed it was impossible to make a commercial version of their solution.

As one SME, Solarbox, said: "ATETA's technical and commercial support has helped to focus the business and development plan. There are now two products from the original one. With their support we have much more confidence in the value proposition of the business. We also have a much clearer plan of how to proceed in getting two viable products to market."

**Enabling game-changing technology:** The project was established in 2017 to run until February 2020. It had assisted 69 innovators by January 2019, exceeding its target by 38%. Based on this success, it's been invited to extend its operations to March 2023 and is looking at broadening its geographic reach.

### Highlights

- 69 SMEs supported in the first two years
- 38% more SMES supported than the original target
- TRL 3 to 9 support available to help SMEs progress
- Additional project funding secured to 2023 based on success.

### About ATETA

Funded by the European Regional Development Fund, ATETA helps SMEs overcome obstacles and unlock business opportunities. The University of Birmingham's Energy Institute is the lead partner, with Energy Systems Catapult providing crucial support.

The initial project has focused on the Greater Birmingham and Solihull Local Enterprise Partnership area, but thanks to its success is now looking at expanding to other LEPs to reach a wider audience and boost impact.

### About Energy Systems Catapult

Energy Systems Catapult was set up to accelerate the transformation of the UK's energy system and ensure UK businesses and consumers capture the opportunities of clean growth. The Catapult is an independent, not-for-profit centre of excellence that bridges the gap between industry, government, academia and research. We take a whole systems view of the energy sector, helping us to identify and address innovation priorities and market barriers, in order to decarbonise the energy system at the lowest cost.

### Testimonial

*"ATETA's technical and commercial support has helped to focus the business and development plan. There are now two products from the original one. With their support we have much more confidence in the value proposition of the business. We also have a much clearer plan of how to proceed in getting two viable products to market."*

- Solarbox