PHASE 3 COMPETITION PARTNER Q&A

Competition partners were asked to submit up to 700-word summaries of their projects, aligned with the following headings, suitable for wider stakeholder dissemination:

- What are the objectives of your project/solution?
- What types (in terms of both size and activity) of organisations is your solution intended for?
- What key functionality(ies) will your solution offer to end users?
- What key benefits will your solution bring to end users?
- How will the solution be made available / promoted to potential users (route to market)?
- When do you expect his to happen?

The following document sets out responses for each competition partner progressing to Phase 3, listed alphabetically.

ANDTR/ AEMS

Product Name : AEMS
Lead Partner : AND Technology Research Ltd
Other Partners : Open University, Counting Lab

What are the objectives of your project/solution?

The vision for this project is the creation of an energy management solution that will enable every business to access energy information and use it wisely to:

- Create value for the business
- Contribute to a low carbon society

To achieve this vision three objectives have been defined:

- The first objective is to engage businesses with energy management so that they are able to consider how and why they are using the energy they do.
- The second objective is to provide businesses with a solution that will capture and process energy data and produce outputs that they can easily understand and act upon.
- The third objective is to provide businesses with a solution that will help them instigate and sustain operational and behaviour changes, thus enabling them to maximise value from the energy they consume.

What types (in terms of both size and activity) of organisations is your solution intended for?

The phase 2 trials have been focused on SMEs in the retail and hospitality sectors. However AEMS is user configurable meaning that the solution is not limited to those sectors as highlighted below:

- AEMS is targeted at independent SMEs that are responsible for their own electricity costs.
- AEMS is scalable and therefore can be used be used in businesses ranging from small micro companies to larger organisations and those operating at multiple sites.

What key functionality(ies) will your solution offer to end users?

AEMS is a dashboard and mobile app that allow SMEs to track and monitor energy usage and business operations. It does this by collecting energy data from smart meters or where relevant energy monitoring equipment.

User friendly displays are offered through an easy to understand multi-screened user interface that:

- Visualises and monitors energy usage.
- Displays simple results based on energy consumption data.

Users are:

- Able to set energy budgets and performance targets for their business.
- Alerted to unusual or changing energy activity.
- Provided meaningful insights.

The aim is to engage SMEs with their energy usage.

Machine learning, using intelligent software algorithms, is undertaken on energy data to:

- Create energy profiles that reflect energy usage in the business.
- Analyse the usage and split it by business operating modes (Background, Usual, Unusual Activity).
- Identify different zones of operational activity.
- Compare monitored usage with the energy profiles.
- Perform data analytics and thus provide meaningful insights to users.

The aim is to give SMEs a deeper understanding of energy usage within the business.

What key benefits will your solution bring to end users?

- Gain an understanding of where and how energy is used in the business.
- Highlight the role energy plays within the business operations.
- Uncover carbon saving opportunities within the business.

- Provide tailored energy saving hints and tips and personalised business insights.
- Support increased efficiency through identification of potential areas for operational and behavioural change.
- Reinforce changes through timely alerts and easy to use dashboard and app.
- Help users set carbon reducing strategies.
- Evidence energy saving and ‘green’ values within the business and the brand.

How will the solution be made available / promoted to potential users (route to market)?

A dedicated website www.myaems.com has been created in order to allow easy access to the AEMS solution. The website provides information on the solution and enables potential users to register and download the software.

The solution will be marketed both directly through events, webinars and digital channels, and indirectly through trade and business organisations.

Support for marketing and joint promotional activity is also planned with Local Authorities, and other organisations with a mandate to deliver low carbon strategies. Additional routes to market, through Energy suppliers and DNOs as part of Smart Energy and Smart Grid initiatives, are being explored.

When do you expect this to happen?

The solution is now being made available for trialling and potential users can register at www.myaems.com. It is anticipated that commercial systems will be available from 1st quarter 2020.

CONSIDERATE

Product Name: A mobile app for energy management for SME hospitality businesses

Lead partner: Considerate Hoteliers Ltd

Other partners: Imby Ltd., The University of Surrey (UoS)

What are the objectives of your project/solution?

Considerate specialises in the hospitality industry and our mission is to drive responsible business practices at every level of an organisation. As part of the Non-Domestic Smart Energy Management Innovation Competition, we are bringing to the market a new energy management tool that is specifically designed to drive responsible business practices in SME hospitality businesses.

The mobile App's features and design take into account the unique requirements of both smaller businesses and hospitality operations, such as a restricted time, budget and the influence of a site's occupancy on consumption. The aim of the app is to:

- drive energy-saving action.
- provide better control over energy related costs.
- make it relevant to hospitality staff.
- integrate seamlessly with users' daily duties.
- leverage on smart metering technology.

What types (in terms of both size and activity) of organisations is your solution intended for?

As a team comprised of both hospitality and sustainability specialists, our objective is to develop a new intuitive mobile App designed to streamline energy management for SME hospitality businesses. This includes hotels, hostels, restaurants and pubs. The app is suited for both independent sites and chain operations.

What key functionality(ies) will your solution offer to end users?

We have developed the App prototype, integrated the App with live data and secured valuable industry, data integration and user testing

partnerships. The App is designed to help businesses, which traditionally do not have dedicated on-site energy management staff, to transform their energy data into energy saving actions.

As such, the App provides users with their latest energy and cost performance at a quick glance, correlates this to relevant industry metrics and communicates only the relevant information in a simple form. The App also provides actionable insight on how to achieve energy, emission and cost savings through energy saving tips and is designed to empower the whole team to reduce energy.

What key benefits will your solution bring to end users?

We have completed multiple rounds of testing, also in collaboration with the University of Surrey (UoS). Testing has so far confirmed that hospitality representatives deem the App and its core features valuable and useful. Key benefits of the App are:

- Provides actionable tips on how to achieve energy, emission and cost savings.
- Tailored to SME hospitality operations and customised per business type.
- Correlated to industry metrics.
- Presents latest performance at a quick glance.
- Empowers the whole team to reduce energy.

In Phase 2 of the competition we focused on further validation of the App features and its effectiveness in improving energy management of SME hospitality businesses. We conducted different strands of user testing, some in collaboration with UoS.

How will the solution be made available / promoted to potential users (route to market)?

The App will be available in IOS and Android App stores for an easy download to your smartphone. The App will be promoted through:

- Hospitality and trade partner webinars and communication channels.
- A dedicated website.

- App demonstration seminars.
- Our quarterly newsletter – subscribe here ko@considerategroup.com

When do you expect this to happen?

App will be available for download from February 2020. To register your interest or trial the App for free as part of our beta testing starting in April 2019, please go to our website: www.considerategroup.com

ELEMENT ENERGY/ E-CAT

Product Name: E-CAT: Energy Comparison & Advice Tool

Lead partner: Element Energy Ltd

Other partners: Octopus Energy

What are the objectives of your project/solution?

Our solution is a web-based tool called E-CAT (Energy Comparison & Advice Tool). It aims to use non-domestic energy consumption data (e.g. smart meter data) to provide real-time feedback and advice. It helps users to understand their energy consumption and whether it is higher or lower than average, as well as how that comparison changes across the day or across the year. The tool also gives users tailored information and feedback on actionable energy efficiency measures. As such, it aims to help users to not only understand their energy consumption better, but also to take actions to reduce their consumption, saving them money and reducing their CO2 emissions.

E-CAT is simple and easy to use, and is highly scalable, requiring only a half-hourly data feed to function. Hence, it aims to be particularly useful for the large number of smaller organisations who may not on their own have the expertise or capacity to understand their energy consumption and implement energy efficiency measures, and for whom it may not be cost-effective to use more bespoke energy management products or services.

What types (in terms of both size and activity) of organisations is your solution intended for?

Our solution is targeted towards micro-enterprises and SMEs in the retail and hospitality sectors, as well as schools of all types and sizes.

What key functionality(ies) will your solution offer to end users?

The key features of our solution are the provision of innovative real-time comparative feedback on energy consumption (i.e. relative to average and efficient organisations of the same type, size, etc.) and a range of interactive, customer-specific energy saving measures and advice. It also includes many other features such as historic comparison,

comparison within chains, analysis of background usage, and a direct demand-side response engagement facility.

What key benefits will your solution bring to end users?

Our solution is simple to use, allowing users to view their energy consumption and compare it to organisations of the same type and size, and including a range of other useful features providing feedback on their energy consumption. As such, it helps users to understand their energy consumption better. It also provides actionable energy efficiency advice to help users to reduce their energy consumption, saving money and reducing their CO2 emissions. As well as providing financial benefits, this has the potential to provide reputational benefits from being a more environmentally friendly organisation, as well as benefits to productivity and staff wellbeing.

How will the solution be made available / promoted to potential users (route to market)?

Our preferred route to market is a business-to-business (B-to-B) route to market licensing to energy suppliers, as this offers the fastest access to a large number of target non-domestic customers. However we are also exploring other arrangements licensing via other organisations or targeting users directly.

When do you expect this to happen?

We have a working solution which we plan to trial between February 2019 and January 2020 as part of the BEIS Non-Domestic Smart Energy Management Innovation Competition. During this time, based on feedback from the trial we will continue to enhance the tool's functionality and develop new features. We aim to roll out our tool with regular users from January 2020 after the trial has been completed.

HILDEBRAND/ GLOWPRO

Product Name: GlowPro

Lead partner: Hildebrand Technology Ltd

Other partners: Freerunner, GenGame, Love Experience, UCL, University of Salford

What are the objectives of your project / solution?

GlowPro identifies operational and energy efficiency opportunities to help businesses with smart meters take advantage of real-time energy data to reduce their costs, improve their operations and engage their staff. Our goal is to take that data and apply analytic models to identify opportunities to improve lighting, heating, cooling and refrigeration operation (through behaviour change as well as identifying repair / replacement times).

We are creating easy to use services that fit into people's working lives as a benefit, not a burden. GlowPro's functionality will shift the mindset from at best thinking about energy once a month to a regular useful service. The sustained attention results in improved customer comfort - whether that's simply improved lighting or temperature to better value through lower business operating costs and more attention on providing a better planned overall experience rather than dealing with real-time operations.

What types (in terms of both size and activity) of organisations is your solution intended for?

Our solution is intended to be used by large property managers (shopping centres) and retail and hospitality venues (chains and independents). Small businesses that would like to do a better job of managing their energy could also use GlowPro.

Big businesses may not qualify as their energy needs typically require larger meters and building management systems.

What functionalit(ies) and key benefits will your solution offer to end users? (combined two questions)

GlowPro is not a single solution, it is three different inter-connected applications designed to meet the very different needs of our customers. Behind the applications is a single ecosystem; one set of data, one set of models to produce relevant learnings, shared across the applications.

Because GlowPro captures real-time energy consumption data we are able to offer real-time alerts when we identify that something has gone wrong (like the fridge has failed), or if equipment is being turned on too early (extractor fans in the kitchen).

Other functionality includes consumption monitoring, billing, business planning, operational checklists, customer comfort management, identification of building fabric issues.

Application	Description	Likely users	Benefits
Assure – web based	Web application for the property manager to publish billing data to tenants, analyse communal energy performance and a business planning tool to help with assessing refit, development and capital improvements – and determine their efficacy thereafter.	Shopping centre general and operations managers Property manager	Offer value added services to tenants Improved service charge billing More effective business planning for energy related projects
Reflect – web based	Web dashboard and application for business managers, focusing on planning and management activities like paying the energy bill, changing energy supplier, acquiring new equipment and training and managing staff. Manage one site or many.	Area manager Business owner Energy manager	No more bill shock Identify equipment inefficiency before it fails Identify impact of behaviour patterns and respond (e.g. cooking eqpt. on hrs before service starts)
React – mobile app or display	Mobile application or display to be used by on site staff, e.g. shift managers, team leaders and frontline staff that is real-time with alerts and decision support functionality. Supports operational efficiency and customer comfort.	Staff on shop / restaurant floor and their managers Energy not priority for them but they directly affect consumption	Ensure customer comfort (temperature monitoring) Helps staff do their jobs more efficiently (daily checklists and can raise 'to do' tasks to manager)

How will the solution be made available / promoted to potential users (route to market)?

Property managers, shopping centre managers, business owners can purchase GlowPro directly from Hildebrand.

Energy suppliers and trade associations could offer white labelled versions of GlowPro to their customers.

When do you expect this to happen?

We are currently recruiting trial sites, please contact info@hildebrand.co.uk for more information.

UNTAPPED SCHOOLS

Product name: Untapped
Lead partner: Hoare Lea LLP
Other partners: City Science, SE2, Flourishing, UCL

What are the objectives of your project/ solution?

The platform provides trusted, independent, industry-validated advice - as well as critical decision support - to users with limited time and budget. At the same time it offers educational content across the curriculum linked to current and relevant data.

What types of organisations is your solution intended for?

The solution is intended for schools of all sizes. We have taken two approaches to identifying schools

- a bottom-up approach, engaging with schools on an individual basis
- a top-down approach, engaging with schools through local authority or Academy Trust routes.

Our research goal was to understand the best routes to enable a sustainable business model, including grasping the barriers and how to overcome them.

We are also considering other routes to market through partnerships with organisations already engaged with the schools sector, such as Data Collectors/ Data Aggregators.

What key functionality(ies) will your solution offer to end users?

The consortium has created a web-based analysis and advice platform that uses energy data from advanced and smart meters. The platform will use this and other databases, together with sophisticated analytics, to provide energy management advice. This will enable schools to reduce their energy use and bills. The success or otherwise of that advice will be monitored and feedback provided to the school. The platform will also provide educational resources based on and stimulated by ‘live’ and relevant data. These resources are aimed at meeting needs of the National Curriculum, providing cross-curricular links, and also at

‘Eco’ and other Environmental Clubs: our market research indicates that these drive much of the behaviour change in primary schools.

What key benefits will your solution bring to end users?

The platform will be designed to provide the following:

- A trusted source of advice and information
- Easy to use, tailored interfaces for different school audiences (eg site managers, business managers, head teachers and curriculum leads)
- A comprehensive energy management product
- Benchmarking, analytics and investment/action advice
- The ability to add further disaggregated data (e.g. sub-meters) as the school advances through the programme
- Educational resources linked to the curriculum, providing a further means of exploiting energy data and increased energy awareness
- Expert energy management advice

How will the solution be made available / promoted to potential users?

The solution is web-based. Our goal is to enable users to learn about the system, sign-up and enable the analytics via the web, all as seamlessly as possible.

Our business model has identified a range of engagement levels that will provide different levels of advice to users. To enable the most scalable and impactful proposition, we plan to offer and enable the lower levels of advice in an automated way.

Our marketing strategy identifies routes to market through a word-of-mouth and referral strategy, together with an on-line marketing strategy that uses the website, search engine optimisation and other social media channels.

When do you expect this to happen?

The solution is available through the internet currently with live data connections to sites using Stark as DC/DA. Through Phase 2 of the project, we have developed a considerable understanding regarding the

on-boarding process and what is required to make this as seamless as possible.

In Phase 3 we are continuing this on-boarding process and trialling both the analytics and the educational resources. We will use feedback from these trials to refine what we offer, to ensure that it is as useful and user-friendly as possible.

The solution is now being made available free for trialling. To take advantage of this opportunity please e-mail Matthew Bellamy at info@untappedschools.com. It is anticipated that commercial solution will be available for subscription from January 2020.

SAMSUNG/ EIS

Product Name: Energy in Schools (energyinschools.co.uk)

Lead partner: Samsung Electronics

Other partners: Centre for Sustainable Energy (CSE), Lancaster University (LU), My Utility Genius Commercial (MUGC)

What are the objectives of your project/ solution?

The key objective of our project is to disrupt the non-domestic school energy sector. We aim to do this by providing a time-of-use energy tariff tailored for schools' off-peaky usage profile and software tools which help all energy users in the school to reduce their energy costs. This comprises:

An energy management platform:

- Energy management portal to help staff manage energy and heat usage in school buildings.
- Tariff switching portal for energy contract management comparing time-of-use based tariffs.
- Teacher and pupil portal and an energy display (TV) to support behaviour change and engage building users on energy issues.
- Supporting energy advice materials, energy champions training and an initial energy audit.

An Educational Platform which uses micro:bits and Samsung's SmartThings IoT platform to provide:

- Curriculum aligned STEM teaching and learning resources for KS2/KS3 supported with micro:bit kit.
- Educational environment to teach the basics of coding to solve real world problems.

What types of organisations is your solution intended for?

All sizes and types of primary and secondary schools.

What key functionality(ies) will your solution offer to end users?

- A tool to view live and historical electricity and gas data and to set alerts when usage is above a certain level.

- Temperature, motion and open/closed sensors to allow school users to see how activity matches with energy usage in different parts of a school.
- A floor plan with mapped sensors to allow users to view temperature and energy data over time in different parts of the school.
- Lesson plans and a micro:bit coding environment to allow students to fetch data from sensors in the school and data from national grid to learn to solve real world problems across the curriculum (e.g. geography, maths, science and computing).
- An energy and monitoring feature allowing pupils to use micro:bits as IoT sensors to report back data on the electricity usage of a device or appliance and on the temperature in a given classroom; the ability to create new micro:bit sensors on the school's floor plan.
- An energy cashback feature which provided an ongoing cashback total calculated based on the savings to the school from a TOU tariff compared to a flat rate or day/night tariff.

What key benefits will your solution bring to end users?

- Our platform gives students the chance to use cutting-edge IoT coding tools to learn how to address one of the key issues for their generation (climate change).
- A dedicated Samsung energy display TV for your reception or other area.
- Tips and advice on how to minimise bills and how to maximise cashback.
- Curriculum aligned teaching resources which solve real world energy problems.
- Training package for energy champions.
- Easy to use contract management for automatic price comparison at the end of your current energy contract.
- Energy cash back payments of up to £1,000 per year (if a school decides to switch energy supplier via our platform).

How will the solution be made available / promoted to potential users?

During the trial phase any school can register their interest via energyinschools.co.uk ; From next year we will offer the platform to a wider group of schools who will be able to use our platform as a complete energy contracting and management solution.

When do you expect this to happen?

Phase 3 school recruitment will start immediately (February 2019); recruitment of schools from 2020 will continue once the project ends in January 2020.

TRANSITION BATH/ ENERGY SPARKS

Product Name: Energy Sparks

Lead partner: Transition Bath

Other partners: Dr Ian Walker [Environmental Behavioural Psychologist], School Energy Efficiency, Paper [user research studio]

What are the objectives of your project/ solution?

Energy Sparks teaches primary and secondary school pupils about energy, and empowers pupils, teachers, school management and the wider school community to take action to make their schools more energy efficient. Energy Sparks aims to increase energy literacy, motivation and agency to make schools more energy efficient, with resulting cost and environmental benefits.

What types (in terms of both size and activity) of organisations is your solution intended for?

Energy Sparks is designed to meet the needs of all schools from primary to secondary.

What key functionality(ies) will your solution offer to end users?

Energy Sparks will provide:

- Separate adult and pupil school-specific home pages highlighting:
  - recent energy use.
  - alerts to problems with energy consumption or efficiency.
  - individual school-specific energy saving action prompts.
  - recommended activities tailored to the age range of pupils with supporting online resources and lesson plans that guide pupils and adults through an energy saving programme.

- A comprehensive package of accessible charts, contextual advice and automatic analysis that present gas and electricity usage data in ways that are easy for pupils, teachers, site managers and school management to explore.

- A means of recording interventions to help build up a permanent record of the schools' energy saving activities, and the functionality to tag a school's energy data with relevant interventions to assess their impact.

- An email and text alert system to alert appropriate school stakeholders to problems with their energy consumption or efficiency, with additional advance warning of school holidays and weather changes and accompanying tips to switch heating systems off or on.

- A competition element with points awarded for completed activities. This is designed as an incentive to maintain energy saving interventions.

What key benefits will your solution bring to end users?

Energy Sparks allows schools to:

- reduce consumption out of school hours.
- compare their energy consumption with regional and national benchmarks, as well as changing internal consumption patterns.
- compare their gas consumption with temperature data to assess the thermostatic control of their buildings.
- support pupils in designing and carrying out investigations to monitor energy related data and behaviour patterns at school.
- embed the energy usage charts, data and energy saving activities with curriculum teaching.
- design and implement an energy saving campaign.
- review energy related school policies with the school management team.

How will the solution be made available / promoted to potential users (route to market)?

Energy Sparks is exploring a range of routes to market:

- individual schools supported by self-funding, PTA support, or grant funding.
- multi-academy trusts supporting their portfolio of schools.

- local authority provision.
- energy broker partnerships.
- energy company partnerships, particularly community energy companies.

When do you expect this to happen?

The current version of Energy Sparks is already freely available to schools in Bath and NE Somerset, Somerset and Sheffield local authority areas through funding from BEIS and previous grant funding.

We will extend the programme to other local authorities, multi-academy trusts and individual schools over the next 6 months, with the expected introduction of a paid-for service in February 2020.