

## Results of Competition: SBRI: Modernising Energy Data Access and Information, Phase 1

Competition Code: 1910\_SBRI\_CGI\_MEDA

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Icebreaker One Ltd	Open Energy	£148,464	£148,464

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

## Project description - provided by applicants

Open Energy has the potential to both transform the energy industry and address the climate crisis via economic innovation, accelerating decarbonisation. Our project will develop an open standard for data sharing in the energy sector. On implementation it will enable energy network and market stakeholders to share data robustly, legally and securely, driving the use and adoption of innovation across the energy sector.

Following the UK's world-first work on Open Banking (which was co-chaired by Gavin Starks, Icebreaker One's founder), we will develop a standard for sharing data that will enable UK energy network stakeholders to optimize the use of network assets, better price existing energy products and create new offerings, driving both private and public good. Open Energy is convening the relevant stakeholders across the energy industry, policy, science and asset owners to define an open standard for catalysing data access across the energy sector.

A transparent, open marketplace built around the needs of both the market and our climate reality will enable energy companies to invest in measurably low-carbon products and services.

The primary challenges are culture and business models. Organisations are based on legacy models that hold data 'closed' (negotiating access and uses on a case-by-case basis) instead of taking 'shared' or 'open' approaches (using pre-emptive licensing and web-based systems). High transaction costs (in time, process and money) are stopping the energy sector from working with data at scale. Lack of information transparency provokes an overly cautious approach in stakeholders, constraining creativity in finding new models, products and market solutions.

Data is not discoverable, clearly licensed for use, nor in formats that people or machines can easily manipulate. Open Energy will create the conditions to allow the energy sector and wider ecosystem to use data at scale, creating the standard to address the foundational 'data plumbing' to enable businesses to innovate and the UK to plan policies and regulation to protect its citizens, their environment and economy, and accelerate the path to decarbonisation.

Open Energy will repurpose the approaches used in Open Banking to the energy sector and demonstrate the concept viability in practice, with an initial use case implementing the approaches on solar electricity generation and asset meta-data. The Open Energy team has experience in collecting solar data and working with the physical assets, which we will bring to bear on this growing distributed energy resource data set.

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Chaddenwysh Services Limited (T/A Electron)	ContainER	£136,604	£136,604

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## Project description - provided by applicants

Project ContainER will deliver a data-coordination platform that enables industry participants to discover and access data that is mastered by the most suitable data owner. The project is based on the principle of integrating and coordinating existing datasets that already exist across the industry and using modern distributed system architectures to facilitate this. The proposed system architecture design and prototype roadmap will have the aim of creating scalable authentication and access protocols to increase data mobility across the industry.

This approach will:

- facilitate the creation and adoption of modern data exchange standards and APIs
- improve data quality by ensuring parties access data mastered by the most suitable owners
- increase data visibility and provide secure access mechanisms for data owners to share and distribute data in accordance with EDTF principles.

Energy data is currently held in multiple silos across industry bodies, often as part of a code or regulatory requirement. Given the specialist roles being undertaken by such bodies in providing and mastering data within the industry, it makes sense to build a system around the principle of these bodies maintaining ownership and mastering rights for these datasets based on different standards, formats and technologies.

Use cases are then implemented via a 'Data Service Protocol' (DSP), which define the data structures and sharing permissions for that use case. The DSPs are a fundamental element of the platform and can be used to implement and enforce elements of the use case governance. User identity and authority are managed through a KYC system that DSPs then utilise to ensure appropriate secure authorisation is provided for each interaction.

To enable data owners to provide secure access to hosted data, a suitable governance model must provide certainty that regulatory and legal requirements are adhered to. We will implement a two-tier model where the platform governance (maintenance and direction of the decentralised protocol) is separated from each individual Data Service Protocol or use case. Their requirements are then enforced via the platform as part of the data access processes.

The proposed approach allows data owners to control and view access to and use of their data. Each use case where data is linked to the system is independently defined and governed; combined with transactional data it is possible to create a clear audit trail and record of access for authorised parties.

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Siemens PLC	Establishing a digitally integrated modern energy system	£159,997	£159,997

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## Project description - provided by applicants

At Siemens our goal is clear – our production facilities and buildings worldwide are to achieve a net zero-carbon footprint by 2030. It is evident, from our experiences, that the path to a zero-carbon future is exciting, challenging and realising this ambition will call for innovative and disruptive ideas, alongside maximising proven sustainable and low carbon solutions.

To ensure the UK achieves our carbon neutral commitments, it is critical that the UK energy sector maximises the value of existing (and future) national infrastructure, resources and the significant levels of existing and emerging data.

Realising this value however will call upon the energy sector to undertake a data-enabled cultural evolution. An evolution which actively enables open-data exchange, utilising data fed from multiple energy vectors, encompassing the breadth of the energy system and the plethora of stakeholders within. A true ‘whole systems’ approach which will give rise to a secure and managed service, a service affording access to the central data exchange for stakeholders wishing to illicit positive, innovative and lasting change within the energy sector.

Siemens will deliver a ‘digitally integrated energy system’ that supports a Common Data Architecture concept. Underpinning the vision is an implementation of the open-data platform, constructed upon the requirements of the users and employing a sector specific metadata standard to drive commonality, enabling data-exchange. To do this Siemens will create ‘Your Online Digital Architecture’.

The platform will be constructed upon the three relevant building blocks identified within the report ‘Energy Data Taskforce: A Strategy for a Modern Digitalised Energy System’ – incorporating asset registration strategy, data catalogue and digital system mapping.

Siemens promotes an inclusive approach to successful deployment, one which will be employed from beginning to end, facilitating user requirement capture workshops alongside show and tell events to provide insight toward the project outcomes and providing best practice guidelines. These events will support organisations who wish to utilise and embed the insight and outcomes, covering topics such as data transparency, data licensing and liability wavers, and data obfuscation / data protection techniques. Each of which are reflective of the metadata standard and Common Data Architecture underpinning ‘Your Online Digital Architecture’.

The challenge is clear – the true value in data, in support of the transition to a low carbon economy, is in enabling visibility, access and insight throughout the energy value-chain – the industry must embrace this opportunity as a true catalyst for change, creating an open, yet secure, data marketplace which will create a modern, digitalized, energy system – one which drives system cost reduction, increases levels of asset visibility, improves system stability, provides capability for informed system management approaches and enables impactful innovation at scale. All critical factors in a decarbonized, digitalized and decentralized energy system.

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