Open ADR project allows grid to talk directly to the home, aligning with real world use cases being deployed by demand side response (DSR) service providers

- *Open standard already widely used in industrial and commercial applications, combines with Matter to deliver customer facing solution that makes mass market adoption realistic*
- *Contributions from both OpenADR and Connectivity Standards members have delivered a robust specification that allow both standards to seamlessly work together.*
- *Project builds on prior DESNZ sponsored work (DSR Ready) that evidences how multiple home appliances can be co-ordinated and controlled with Matter, reducing bills and carbon footprint for every home, bringing the interoperability vision to life*

New OpenADR & Matter Specification Bridges Grid and Smart Homes

geo (Green Energy Options), the Cambridge-based energy tech firm, has developed a groundbreaking open specification that enables OpenADR and Matter to work together, enabling mass-market, consumer-friendly grid demand response solutions. Published in March 2025, with independent input from the OpenADR Alliance and the Connectivity Standards Alliance, the specification provides a clear framework for energy flexibility.

Demand Side Response service providers (DSRSPs) and Energy Smart Appliance (ESA) manufacturers can use this bridging specification to unlock the inherent energy flexibility that's contained in household white goods appliances, EV charging, water heating, electric heating, solar and battery storage systems.

Utilities and energy flexibility service providers have been using the OpenADR protocol for 15 years to connect homes and businesses to the grid. Using OpenADR, the grid can understand how these ESAs can be flexed; it can then send incentive signals to use energy at different times and help balance the grid.

Matter, launched in 2022, is the unifying smart home standard that defines how devices communicate. It facilitates secure data sharing within the home and the translation methodology identified in this specification enables end to end flexibility services.

Matter's widespread adoption by tech giants and appliance manufacturers, along with its built-in security and intuitive setup, allows Domestic DSR to move beyond early adopters to mass market deployment.

Sponsored by the UK Department of Energy Security and Net Zero (DESNZ), the initiative builds on the Interoperable Demand Side Response (IDSR) programme and previous

successful projects including DSR Ready. By separating OpenADR (grid flexibility management) from Matter (direct appliance control), the specification allows providers to scale beyond traditional EV charging applications while reducing costs. The specification outlines how a local energy management system can respond to time of use tariffs, local solar generation, can enforce peak load limits, and optimise energy use - helping the grid manage demand surges while using excess renewable energy when available.

Rolf Bienert, Managing Director of OpenADR Alliance said: "Consumers want simplicity. This specification bridges grid control with home energy management, making energy flexibility seamless."

Tobin Richardson, President and CEO of the Connectivity Standards Alliance said: " Marking a pivotal moment in energy evolution, the OpenADR specification enables communication between utilities and consumers, allowing Matter devices to respond to those energy signals. It's an impressive step forward in enhancing grid efficiency and paves the way for a more sustainable, greener future."

Patrick Caiger-Smith, geo Chairman said: "Keeping consumers' hard-earned money in their pockets by providing meaningful carbon reduction to millions of homes, simply and cost effectively, has always been central to our mission. A series of DESNZ sponsored projects have helped to make this vision a reality and this latest OpenADR and Matter bridging specification means those benefits can now be delivered sooner, not least because the commercial value for ESA manufacturers and flexibility service providers is now clearer than ever."

The specification can be downloaded from geo's website at the following URL:

https://geotogether.com/oadr-matter-spec/

About geo:

geo (Green Energy Options) is an established smart energy specialist and a leading supplier of in-home energy displays (IHDs) – the customer-focused energy displays being delivered as part of the GB smart meter rollout.

geo's mission is to bring net zero forward by revolutionising the way households consume energy, keeping consumers' hard-earned money in their pockets and cutting carbon at the same time.

In 2020, working with industry partners, geo led the BEIS (now DESNZ) funded Core4Grid trial in which they were able to show how effective use of data generated by smart meters could deliver significant savings in both energy costs and carbon emissions. The trial, which also involved EDF Energy, saw households saving an average of 49% on their annual energy bills and cutting their carbon footprint by 14%.

Building on those results and its experience in designing and producing intuitive IHDs, the company began the development of the world's first truly mass-market home energy management system (HEMS), called SeeZero. Its aim was to make that HEMS device so accessible and cost effective that it could be deployed in place of a standard IHD as part of the GB smart meter rollout, enabling households to access the level of savings seen in Core4Grid.

SeeZero is now leading the energy revolution for every home.

About the OpenADR Alliance:

The OpenADR Alliance, a non-profit corporation created to foster the development, adoption, and compliance of OpenADR and related standards, helps utilities manage the growing pool of distributed energy resources, which includes renewable energy, energy storage, demand response and electric vehicle charging. The OpenADR standard supports communications to all DER resources to manage changes in load shape, energy inputs and power characteristics of DER assets. The recently added EcoPort standard additionally enables smart appliances to be connected. More information can be found at http://www.openadr.org/.

About the Connectivity Standards Alliance

The Connectivity Standards Alliance, formerly the Zigbee Alliance, is the foundation and future of the Internet of Things (IoT). Established in 2002, its wide-ranging global membership collaborates to create and evolve universal open standards for the products transforming the way we live, work, and play. With its Members' deep and diverse expertise, robust certification programs, and a full suite of open IoT solutions the Alliance is leading the movement toward a more intuitive, imaginative, and useful world. The Connectivity Standards Alliance Board of Directors is comprised of executives from Allegion, Amazon, Apple, ASSA ABLOY, Comcast, Espressif, Eve Systems by ABB, Fortune Brands, Google, Haier, Huawei, IKEA, Infineon Technologies AG, The Kroger Co., LEEDARSON, Legrand, LG Electronics, Lutron Electronics, Midea, Nordic

Semiconductor, NXP Semiconductors, OPPO, Resideo, Samsung Electronics, Schneider Electric, Siemens, Signify, Silicon Labs, Somfy, STMicroelectronics, Tuya, Verizon, and Wulian. Learn more about the Alliance at www.csa-iot.org or follow us on Twitter Facebook LinkedIn. Should you have additional Alliance messaging questions, reach out to Marketing@csa-iot.org.

About Matter

Matter is the foundation for connected things. This industry-unifying standard has a promise of reliable, secure connectivity — a seal of approval that devices will work seamlessly together, today, and tomorrow. Matter creates more connections between more objects, simplifying development for manufacturers, and increasing compatibility for consumers. This collaborative breakthrough is built on proven technologies and guided by the Connectivity Standards Alliance, whose Members come together from across industries to transform the future of connectivity. Learn more about Matter at www.buildwithmatter.com; or follow us on Twitter Facebook LinkedIn.

About the IDSR Programme

The Department for Energy Security and Net Zero provides dedicated leadership focused on delivering security of energy supply, ensuring properly functioning markets, greater energy efficiency and seizing the opportunities of net zero to lead the world in new green industries.

The IDSR Programme is part of the Department's £1 billion Net Zero Innovation Portfolio which provides funding for low-carbon technologies and systems and aims to decrease the costs of decarbonisation helping enable the UK to end its contribution to climate change.