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UPSIDE ENERGY, LEGAL & GENERAL'S LATEST CLEAN ENERGY INVESTMENT SECURES GOVERNMENT FUNDING FOR THREE PROJECTS

Upside, the British start-up, backed by Legal & General and SYSTEMIQ, announces government funding for three projects to better connect electric vehicles to the electricity grid.

The grant awarded by Innovate UK will be used to fund Upside's three projects exploring vehicle-to-grid, these projects include:

'V2Street' will earn revenue from customers by providing a service that optimises how they use power between their electric vehicle battery and the local grid. This service will enable the cost effective use of and economic investment in local and national power infrastructure which in turn will facilitate more low carbon energy and electric vehicles to be adopted.

'HAVEN' will look at the use of electric vehicle batteries within the context of other systems in the home, e.g. batteries attached to solar PV arrays, domestic heating and hot water systems to provide flexibility to the energy system. It will test different configurations of an electric vehicle battery and other storage systems to build a robust suite of models to demonstrate the value that electric vehicle batteries can bring within an integrated home energy storage system. Upside will partner with Salford University, Honda and Good Energy to conduct this study.

'V2GO' – Will develop, trial and evaluate potential business models for fleet operators to engage with vehicle to grid opportunities. Given the size and usage patterns of fleets, economies of scales could be generated by fleet operators which would encourage large scale uptake of electric vehicles. The project is led by EDF and includes; Upside Energy, University of Oxford, Oxfordshire County council, EV chargers EO, Fleet Innovation Ltd and electric vehicle manufacturer Arrival.

John Bromley, Head of Clean Energy at Legal & General Capital, comments "Upside's grant awarded by Innovate UK, an executive non-departmental public body sponsored by the Department for Business, Energy & Industrial Strategy, represents a significant step in the transition to a low carbon transportation and smart energy system. The Government support of Upside's vehicle-to-grid projects will extend the flexibility Upside can deliver to consumers and product manufacturers, and demonstrates the necessity for innovation in this sector."

Upside Founder and Chief Scientist, Dr Graham Oakes, said: '*Electric* vehicles are going to be key to reducing emissions and greenhouse gases from transport, and there's a growing trend in their favour, but barriers still remain. We need to overcome issues for on-street and home charging infrastructure, and questions about allowing many vehicles to charge whilst maintaining grid balance and stability. This funding will allow Upside and our partners to maximise the potential of electric vehicles to consumers, local authorities and the energy system, and help build a new, cleaner and more equitable, energy system for the UK.'

Upside has developed technology that will help deliver an affordable clean energy system to UK consumers complementing Legal & General's existing investments in the creation of long term clean energy generating assets in solar, onshore wind and offshore wind.

Upside's cloud platform uses advanced algorithms and artificial intelligence to co-ordinate with energy generators and storage devices connected to homes, businesses or industrial sites. As a collective, these devices form a

‘virtual energy store’ that can provide back-up power to the national grid, an increasingly important service as the national grid becomes more reliant on intermittent renewables for power.

Legal & General Capital’s investment in Upside Energy will provide the capital to innovate and secure an alternative solution for a cleaner energy system of the future. Electric vehicles, energy storage, smart grids and connected devices will optimise the use of low-cost wind and solar power, whilst improving the energy efficiency in buildings thus reducing the reliance on power stations.

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UPSIDE ENERGY

Every time you hit a switch, somewhere a power station has to work a little bit harder. That’s fine for coal or gas — they can just burn some more fuel — but it doesn’t work for renewables. The sun won’t shine more brightly just because you want to boil the kettle. To fully exploit renewable generation, the system needs flexibility from somewhere else.

Upside Energy provides that flexibility. Its cloud platform uses advanced algorithms and AI to coordinate devices that households and commercial and industrial sites own, e.g. in backup power supplies, battery systems, electric vehicles, hot water tanks, heating and cooling systems, to match demand for energy onto available supply.

This lets the energy system make better use of both conventional and renewable generation, saving both costs and emissions. System operators pay Upside to create these savings, and it shares that revenue with the manufacturers and owners of the devices it controls.

Upside was created for a challenge prize run by National Grid in 2013. It has since won numerous awards, e.g. the 2017 Shell Springboard National prize for low carbon innovation. It has raised over £2m of grant funding from Innovate UK, the Department of Business Energy and Industrial Strategy, and the EU Horizon 2020 programme, and £1.2m of seed equity from angel investors. It closed a £5.5 Series A Funding round, led by SYSTEMIQ and Legal and General Capital, on 21 December 2017. This recent funding from Innovate UK complements that funding, helping Upside to further realise its vision for a new, cleaner and more equitable, energy system.

Legal & General Capital

Legal & General Capital (LGC) is the early-stage investment arm of Legal & General Group. Investing from Legal & General's £6bn principal balance sheet, LGC's purpose is to generate long-term shareholder value by injecting new capital into key sectors where there has been a shortage of investment and innovation. Focused on Housing, Infrastructure (Urban regeneration and Clean Energy) and SME Finance, these key sectors reflect our aim to invest for the long term in economically and socially useful assets, to secure competitive returns and to create new asset classes for Legal & General's varied investment requirements, for our partners and for the wider marketplace. Investments to date have included housebuilder CALA Homes, a Build to Rent joint venture, major urban regeneration projects in Salford, Newcastle, Cardiff and Bracknell, SME finance group Pemberton and clean energy firm, NTR.

Legal & General Group

Established in 1836, Legal & General is one of the UK's leading financial services groups and a major global investor, with a number of growing businesses in the US and in other countries. At 30th June 2017, we had over £951 billion in total assets under management. Over fifteen million people worldwide rely on us to help them save for the future and to protect their families and their homes.

We work with companies and pension trustees to help people build security in retirement, being the UK's largest investment manager for UK corporate pension schemes, a major provider of auto-enrolled pensions and a market leader in pensions de-risking. We have also made a commitment to invest in direct investments, with £12 billion already invested in areas such as homes, urban regeneration, clean energy and small business finance, driving economic growth and making a positive difference to the UK's built environment.