



ITES

Part of the **UK-India** Net Zero
Innovation Virtual Centre

ITES: Introducing Our Innovators

Supporting startup
success in India

September 2024





"Programmes like ITES are critical in ensuring UK innovators can play a crucial role in the clean energy boom, supporting sustainable growth for both our nations."

Will Tope, LiNa Energy

"ITES fosters an interactive ecosystem of SMEs that can connect ideas and solutions across different technologies and services. That's why this programme is so important."

Rajat Rakkhit, Nexmu

"The programme has provided innovative businesses like ours with the safe springboard we need to develop overseas, opening doors in India to help us collaborate and commercialise across borders. And with our locally-procured system components, we are also supporting the development of a sustainable socio-economic ecosystem in India."

Jyoti Roy, GreenEnco

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The start of something special

It's an exciting and critical moment for innovators in the Net Zero transport and energy space.

Transport is one of the toughest challenges on the road to Net Zero; it's the fastest-growing source of emissions, accounting for over 20% of global greenhouse gas emissions, second only to the power sector. Decarbonising transport, and the energy system powering it, demands serious ambition – but it also demands ideas, action, and collaboration. The impressive innovators in the Innovating for Transport and Energy Systems (ITES) initiative are not just participants, but pioneers in driving impactful change.

In July 2023, the ITES initiative was visited by UK Science Minister George Freeman as a flagship UK-India programme representing a landmark moment for research and innovation between the two countries. Led by the UK's energy innovation experts Energy Systems Catapult, and the renowned Indian Institute of Science, ITES brings together the capabilities, tools and experience that allows it to work across private and public sectors to originate ideas, develop and validate innovations, and replicate outcomes to scale for market and Net Zero success.

Handpicked for their high-potential, our ITES innovators represent the diverse spectrum of UK innovation – from rising star startups to more experienced enterprises with UK-proven products and technologies. By supporting these innovators to test, fund, and grow in India, we aim to bring forth the brightest and best, turning UK-India innovations into world-first solutions.

Key to this is the close partnership we foster between industry and innovative businesses to take ideas and technologies further, faster – from prototype to marketplace. With its origins in the award-winning UK-India 'Innovating for Clean Air' initiative, ITES continues a rich reputation for cutting-edge pilots, real-world testbeds, and research programmes between Indian industry, academia, and innovators. Together with our pilot partners, ITES will trial new technologies in India on a bigger scale than before, exploring pathways for sustainable and clean transport – such as electric and hydrogen solutions – that are reliable, affordable and adoptable, as well as ensuring an infrastructure and energy generation system that can meet demand.

At the heart of turning this ambition into action are the innovative startups and businesses we introduce to you here. Powered by tailored incubation, acceleration support, and unique collaboration, we look forward to supporting the start-up success stories that will shape the future transport and energy landscape: in India, the UK, and beyond.

Andrew Stokes
ITES - UK Lead



UK Science Minister George Freeman MP meets with ITES leads Professor Ashish Verma (C) and Andrew Stokes (R)

About Innovating for Transport and Energy Systems (ITES)

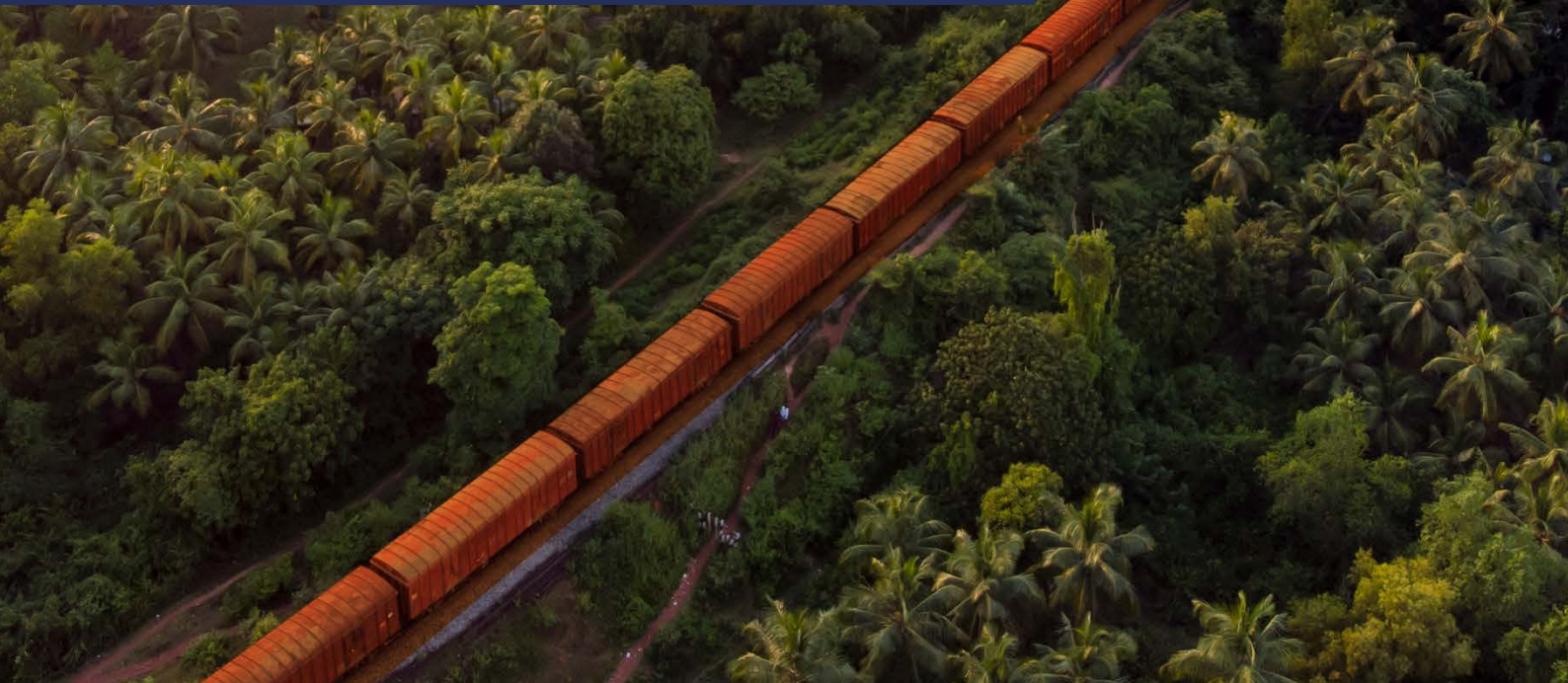
ITES is the flagship UK-India initiative driving transport decarbonisation, developing greener, quicker and more affordable ways for people and goods to move around.

Part of the UK-India Net Zero Innovation Virtual Centre, and forged from a landmark Memorandum of Understanding (MoU) between UK and Indian governments, ITES brings together the best innovation and research from both countries to test, fund and fast-track solutions to market that target transport's toughest Net Zero challenges, such as an electric vehicle-ready infrastructure.

ITES offers a 'soft-landing' for UK innovators interested in the Indian market, as well as opportunities for startups in India. The collaboration will help innovative businesses tackle scalability with go-to-market support and access to potential clients, funders, and investment.

Funded by Innovate UK and the UK Department for Science, Innovation and Technology, and backed by a powerful network of industry, innovators, investors, academia and government, ITES is market led, adopting a unique perspective across the whole transport and energy system that considers the multiple and highest priority solutions needed to deliver cleaner roads, railways, seas and cities. By combining international resources, ITES will make it quicker, easier and more cost effective for the UK and India to pioneer the solutions that Net Zero needs.

Contact us:
info@ites.org



Alternative fuels



[Learn more](#)

The technology

Carbonbit's Direct Air Capture (DAC) technology captures CO₂ from ambient air with the aim of converting it to e-methanol, e-ammonia, and other e-fuels.

How will India benefit?

Direct Air Capture technology offers a low-cost method of CO₂ capture and e-methanol production. This has huge potential to accelerate decarbonisation across India's heavy goods vehicle (HGV) and maritime sectors (accounting for 4.5% of all emissions in India), both of which could incorporate e-methanol as an alternative fuel.

What makes Carbonbit Technologies unique?

Carbonbit aims to provide the lowest-cost capture of CO₂ globally with its patent-pending DAC process.



Batteries and battery management systems

Advik Technologies Limited

The technology

Advik Technologies Limited (ATL) uses a novel technique to provide sustainable lithium-ion (Li-ion) batteries for light mobility and other applications in emerging markets.

How will India benefit?

Batteries, regardless of their chemistry, inevitably fail over time. However, by designing batteries for reuse, repair, and upgrade, the technology becomes more suitable for emerging economies like India, where local repair instead of disposal is needed to manage costs and reduce waste.

What makes ATL unique?

ATL's patented battery technology is uniquely designed for easy repair and upgrade. This simple serviceability reduces waste and improves the total cost of ownership for this technology in emerging markets.



Brill Power

[Learn more](#)

The technology

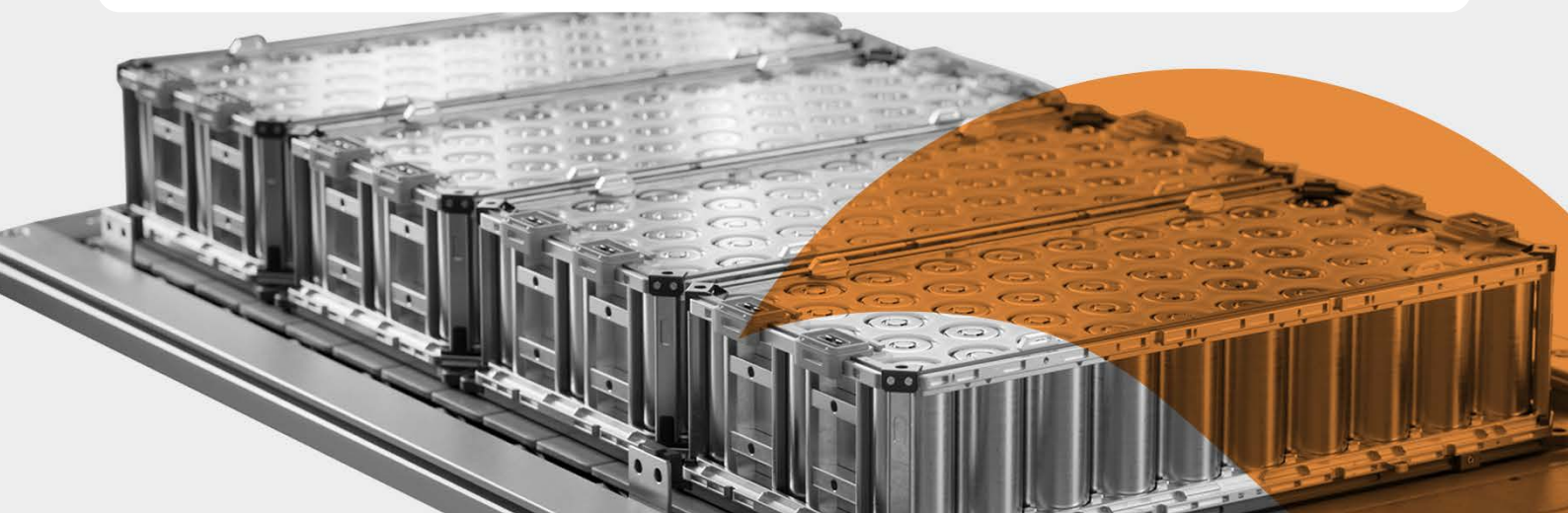
Brill Power's advanced BMS (Battery Management System) reduces the Levelised Cost of Storage (LCOS) and improves Battery Energy Storage System (BESS) performance for stationary storage.

How will India benefit?

By integrating active loading technology and power conversion, Brill Power's technology can extend the lifetime of Control and Instrumentation (C&I) and utility systems by up to 25%. It works with both existing chemistries (e.g. Lithium iron phosphate (LFP)) and novel chemistries (e.g. sodium-ion).

What makes Brill Power unique?

Brill Power's hardware, firmware and cloud-based analytics solution improves lifetime, uptime, efficiency and safety of BESS systems by mitigating the impact of cell & module degradation, helping improve the return on investment and reduce Total Cost of Ownership by up to 30%.



Batteries and battery management systems



[Learn more](#)

The technology

Faraday Battery is developing a new type of battery aimed primarily at bus fleets. Faraday's innovative solution incorporates a Battery Control Unit (BCU) with a modular platform.

How will India benefit?

Indian's vast bus market has the desire to 'go electric', but currently lacks the scale of in-country manufactured reliable and efficient technology that can handle smart charging of multiple vehicles.

What makes Faraday Battery unique?

With battery costs comprising almost 50% of the total cost of a large electric commercial vehicle, the BCU doubles battery lifespan, halves replacement costs, and costs less than 10% of the battery component price.



[Learn more](#)

The technology

LiNa Energy has developed a new generation sodium-metal-chloride battery for solar energy storage applications.

How will India benefit?

India's Net Zero and transport electrification ambitions will require major large-scale battery storage.

While lithium-ion batteries excel for short-term use, affordable long-duration energy storage like LiNa's technology can prevent solar power waste and reduce coal firing by saving excess solar energy for high-demand periods.

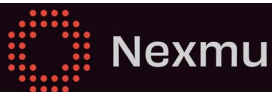
What makes LiNa Energy unique?

LiNa's solution is substantially cheaper than the existing lithium-ion alternative (less than 50% at cell and system level), enabled by abundant and domestic raw materials combined with a simplified balance of plant.

With the capability to operate efficiently and safely at high ambient temperatures, the battery is particularly useful in hot climates.



Batteries and battery management systems



[Learn more](#)

The technology

Nexmu has developed a Battery Management System (BMS) for electric mobility and energy storage. The integrated BMS solution includes hardware, firmware, software and a scalable and secure cloud-based data platform.

How will India benefit?

Focused on powered light vehicles and light energy storage systems, Nexmu is ideally placed to support India's Net Zero transport transition, optimising battery performance and lifespan.

By collaborating with Indian original equipment manufacturers (OEM), Nexmu is looking to adapt its technology to meet the needs of 2-wheeler and 3-wheeler electric vehicles (EVs).

What makes Nexmu unique?

Nexmu's BMS is scalable, re-configurable and interoperable – delivering enhanced battery performance, longevity, and significant cost savings.



[Learn more](#)

The technology

Recyclus provides the vital end-to-end recycling technology needed to address growing volumes of electrical battery waste, including industrial-scale lithium-ion battery recycling facilities, and sustainable recycling for lead-acid batteries.

How will India benefit?

Recyclus's technology will support India's clean transport transition by ensuring a circular economy and supply chain continuity for EV battery metals. This includes much-needed solutions to domestic lithium-ion battery recycling in India, powered by ever-increasing usage of handheld devices across urban and rural areas.

What makes Recyclus unique?

By recycling batteries into their constituent parts, Recyclus:

- alleviates supply chain pressures for EV battery metals
- offers a scalable solution for battery recycling
- supports a circular economy for battery metals

Recyclus is also the UK's first facility equipped for industrial-scale battery recycling and the exclusive industrial-scale battery recycler in the UK. Recyclus is collaborating with the Environment Agency to establish UK Li-ion battery recycling standards.

Batteries and battery management systems



ThinkClock Battery Labs
Sensing, Modelling, Analytics

[Learn more](#)

The technology

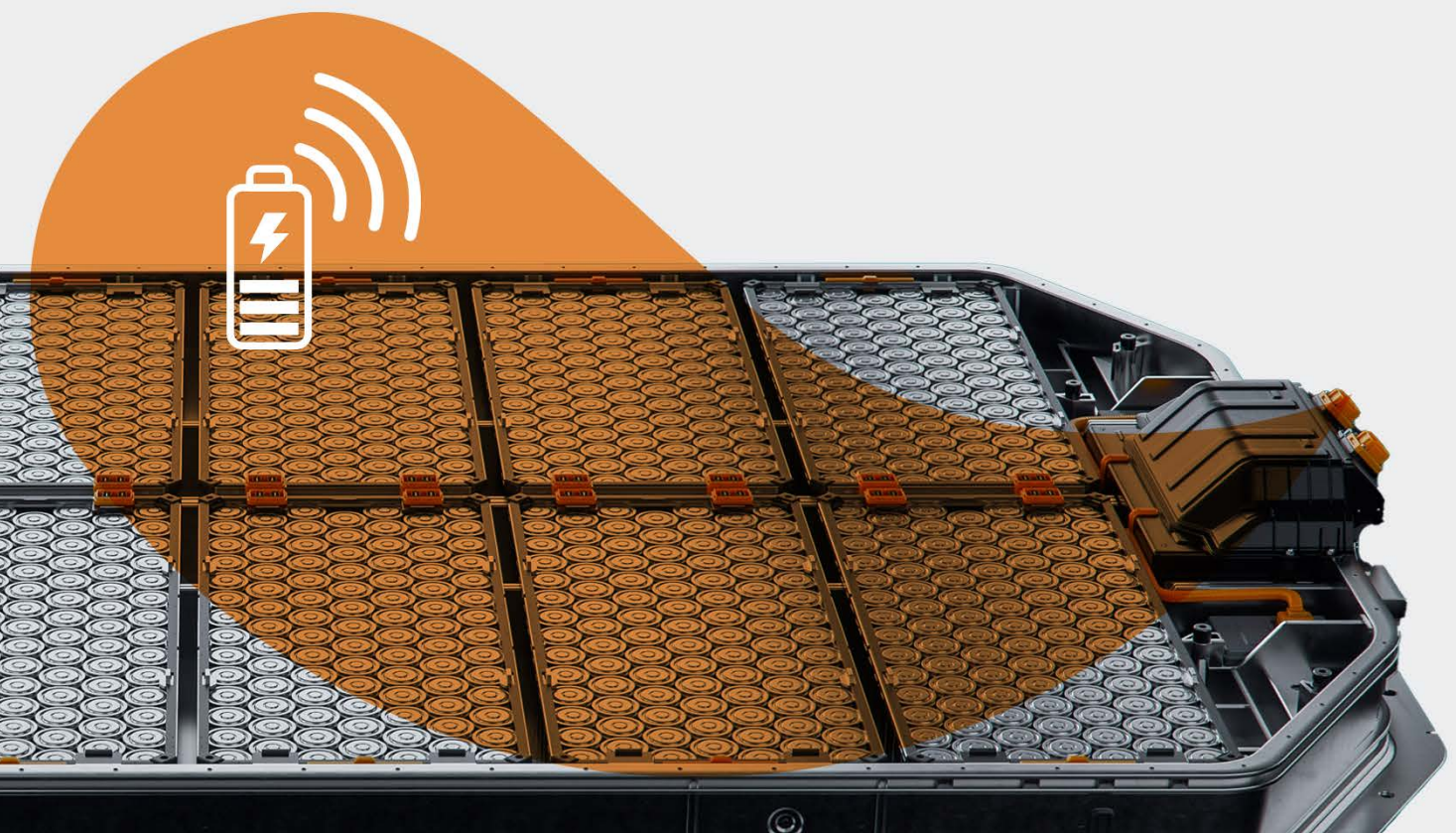
ThinkClock's BatteryScope tool generates diagnostic insights on battery health using data-driven digital Twins. The tool uses physics-based modelling, machine-learning techniques, and advanced lab characterisation methods to accomplish this.

How will India benefit?

BatteryScope supports battery asset owners by providing actionable insights about battery health and its operating trade-offs. Benefits include extended battery life, improved runtime per charge, and reduced maintenance costs, ultimately enhancing the economic viability and sustainability of battery assets.

What makes ThinkClock unique?

In addition to predictive maintenance requirements, BatteryScope's diagnostic insights can also provide an accurate valuation, helping the finance and insurance vendors better understand the asset risk into the future.



Charging systems



[Learn more](#)

The technology

char.gy has developed hardware and software to facilitate EV charging from lampposts in residential areas for customers without off-street parking.

char.gy has already installed new and retrofitted EV charging points on roadsides and street lighting in London and around the UK, and is also running trials in New York.

How will India benefit?

Major cities in India will need to provide large numbers of on-street charging points for smaller EV vehicles and cars.

By tapping into the existing lamppost infrastructure, char.gy's technology could have a major impact in decarbonising Indian cities.

What makes char.gy unique?

char.gy's street charging infrastructure offers risk-free new income streams and Net Zero progress for local governments and authorities.

Not only is installation fully funded by char.gy, but local governments also take a share of the energy revenue, so they can build income-generating charging networks to meet their decarbonisation ambitions.



Charging systems



[Learn more](#)

The technology

Entrust Microgrid specialises in smart microgrid, smart EV charging and smart energy management system technologies. Through ITES, Entrust is developing a smart direct current (DC) /DC EV charging solution for electric 2-wheeler and 3-wheeler mobility vehicles, incorporating both solar electricity capability and battery storage.

How will India benefit?

2 and 3-wheeler vehicles are probably India's most iconic (and affordable) forms of transport. As a result, the country needs a scalable and efficient charging infrastructure to support its transition to electrified solutions.

What makes Entrust unique?

Using its patented technology for hybrid AC and DC networked microgrids, Entrust Microgrid smart EV charging solutions operate at the highest efficiency and lowest grid connection cost.



Charging systems

oomph[®]

[Learn more](#)

The technology

Oomph's PowerStream mobile DC charging system can provide a rapid charge to EVs in any remote or rural location – without the need for costly groundworks.

How will India benefit?

Fixed charging installations are costly and unlikely to reach rural areas for many years. The PowerStream enables off-grid charging for EVs in any location, and the unit itself can be re-charged from a DC supply or a 63A alternating current (AC) supply.

What makes Oomph unique?

Oomph's rapid-charge hub offers multiple commercial sectors a simple, any-location 'plug and play' solution, unlocking uninterrupted operations for commercial EVs and off-road vehicles.



Charging systems



[Learn more](#)

The technology

Petalite develops new-generation EV technology for DC fast charging.

This dynamic power management efficiently distributes power over multiple charge posts, based on the charging demands of the EVs plugged in at the time.

How will India benefit?

India will require large scale DC charging for its vast electric vehicle market. And with AC charging currently more common in India, there is clear market need for effective and efficient energy management technologies, such as Petalite's solutions.

What makes Petalite unique?

Whether DC or AC, Petalite's technology dramatically improves the reliability, availability, operational lifetime and power scalability of EV fast charging.



[Learn more](#)

The technology

Urban Integrated [ui!] has designed a comprehensive digital platform for EV charging including:

- advanced charge point management
- e-Mobility Services Provider app
- car park Evaluation and investment calculation tool (EVIC)
- e-Mobility Management Platform (eMAP) for operational CPO reporting
- fully integrated into UrbanPulse smart city data platform and dashboard visualisation

How will India benefit?

With multiple implementations in the UK and Europe, [ui!] is able to bring expertise and experience to support India's carbon reduction targets.

[ui!]'s mature End to End (E2E) solution will help accelerate the use of EVs, and significantly contribute to reducing exhaust emissions. Its integration with smart city solutions also provides a holistic view of performance against emissions targets and impact of measures.

What makes [ui!] unique?

[ui!] offers EV operators a comprehensive E2E solution that brings user raw data together, unlocking actionable insights – and confident decision-making – for smart city, climate emergency and zero emissions projects.

Charging systems



[Learn more](#)

The technology

Vertical Solar has pioneered a novel approach to solar. By combining a compact, functional unit with photovoltaic (PV) power, the Vertical Solar cabinets can provide power for a variety of end users.

How will India benefit?

Vertical Solar's solar cabinets combine efficient technology with city-smart designs for urban transport charging solutions that meet India's Net Zero transport ambitions.

In addition, the cabinets have the potential to meet the off-grid need of commercial companies and domestic users alike.

What makes Vertical Solar unique?

Vertical Solar's high-quality and robust cabinets offer greater year-round power, rather than just optimisation for maximum power only at peak sun periods.

[Learn more](#)

The technology

Voltempo develops next-generation rapid EV charging infrastructure for electric vans, buses, truck, HGVs and cars.

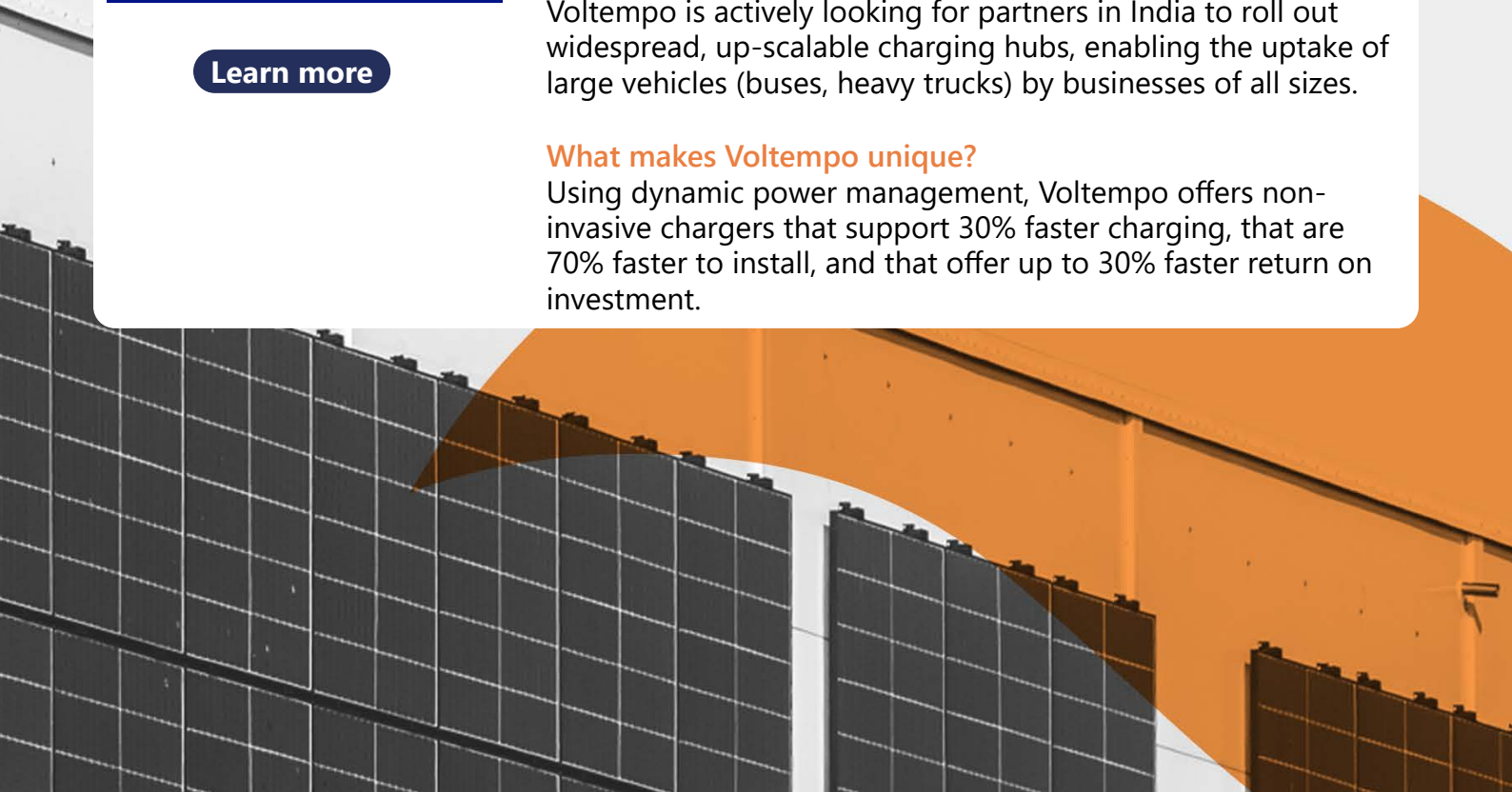
How will India benefit?

The development of ultra-high power EV charging hubs for heavy vehicle fleets and public service stations would help the commercial sector in India progress towards Net Zero transport and travel.

Voltempo is actively looking for partners in India to roll out widespread, up-scalable charging hubs, enabling the uptake of large vehicles (buses, heavy trucks) by businesses of all sizes.

What makes Voltempo unique?

Using dynamic power management, Voltempo offers non-invasive chargers that support 30% faster charging, that are 70% faster to install, and that offer up to 30% faster return on investment.



Emissions reduction technology



[Learn more](#)

The technology

Climate-i's technology addresses the issue of leaks of sulphur hexafluoride (SF6) – the world's most potent greenhouse gas – from gas-insulated equipment in electricity substations.

How will India benefit?

By partnering with Climate-i, India could rapidly become a leader in mitigating SF6 emissions with a scalable solution that combines predictive leak monitoring and gas capture.

The Climate-i solution is cost-effective, contributing to grid efficiency, reducing costs and lowering each substation's carbon footprint.

What makes Climate-i unique?

Climate-i's SF6 capture solution is currently unique and has the potential to support an innovative circular business model for SF6 use.

Climate-i is also developing brand-agnostic retrofit predictive monitoring technology regardless of the OEM, providing a scalable alternative to expensive OEM upgrades.



Energy and flexibility management systems



[Learn more](#)

The technology

Anzen's climate wall is an integrated, solid-state heating, cooling, and heat recovery ventilation system. It makes localised heating more efficient and controlled by using thermoelectric heat pumping for heating and cooling, eliminating the need for refrigerants, compressors, and central ducting/plumbing.

How will India benefit?

In India, Anzen's solid-state systems can support the home heating, ventilation, and air conditioning (HVAC) and EV sectors to manage their thermal demands with:

- Cost-effective indoor climate controls for northern India
- Smarter cooling systems for EV charging infrastructure
- Efficient HVAC for EV buses and public transport

What makes Anzen unique?

Anzen's climate wall is a sleek standalone system that is lightweight, easy to install, and affordable. Capable of variable power consumption, Anzen's solution is also the only zero energy waste system to redirect both heating and cooling.



[Learn more](#)

The technology

equiwatt creates virtual energy management solutions for energy providers, businesses, and consumers. Their data-driven solutions integrate with home energy assets including smart meters, batteries, solar and EVs to monitor and optimise energy usage in real-time, driving efficiency and sustainability.

How will India benefit?

Key to the system is an innovative, gamified interface that enables households to actively play their part in energy conservation, earn rewards, and lower costs.

equiwatt's smart energy solutions can help India reduce strain on their grid systems, and establish a more sustainable and resilient energy ecosystem in India.

What makes equiwatt unique?

equiwatt's customisable platform seamlessly integrates with existing infrastructure, enabling all users to make smarter energy choices, helping them reduce their bills, and be rewarded for it too.

Energy and flexibility management systems



[Learn more](#)

The technology

Flock Energy is building the digital infrastructure for the global energy transition. Its Machine Learning enables energy providers to analyse customer energy data usage in detail, all on one digital platform, to improve demand forecasting, demand-side management and energy efficiency. Meanwhile, it supports service providers to identify the best candidates for green energy technologies such as rooftop solar or household appliance upgrades.

How will India benefit?

Flock Energy already has a presence in India, inspired by the government's strategy to decarbonise residential homes and digitalise the distribution system through the mass adoption of smart meters.

Flock Energy's innovative digital platform supports the adoption of renewable energy assets by identifying where these can be best deployed for optimum benefit.

What makes Flock Energy unique?

Flock Energy offers its services to energy providers (known as 'DISCOMs' in India) for free, enabling them to integrate quickly and easily to build rapid network effects and a local data moat. By harnessing artificial intelligence (AI) to disaggregate energy data on customer energy consumption and build purchase propensity models, Flock Energy uniquely supports energy suppliers and equipment installer groups in partnering for financial and Net Zero benefits.



Energy and flexibility management systems



[Learn more](#)

The technology

Neura Energy's NeuraFlex is a cloud-connected energy management system. It harnesses behind-the-meter resources in homes and businesses, such as batteries, EVs, and heat pumps, and turns them into flexible energy assets for the benefit of owners and the wider energy system.

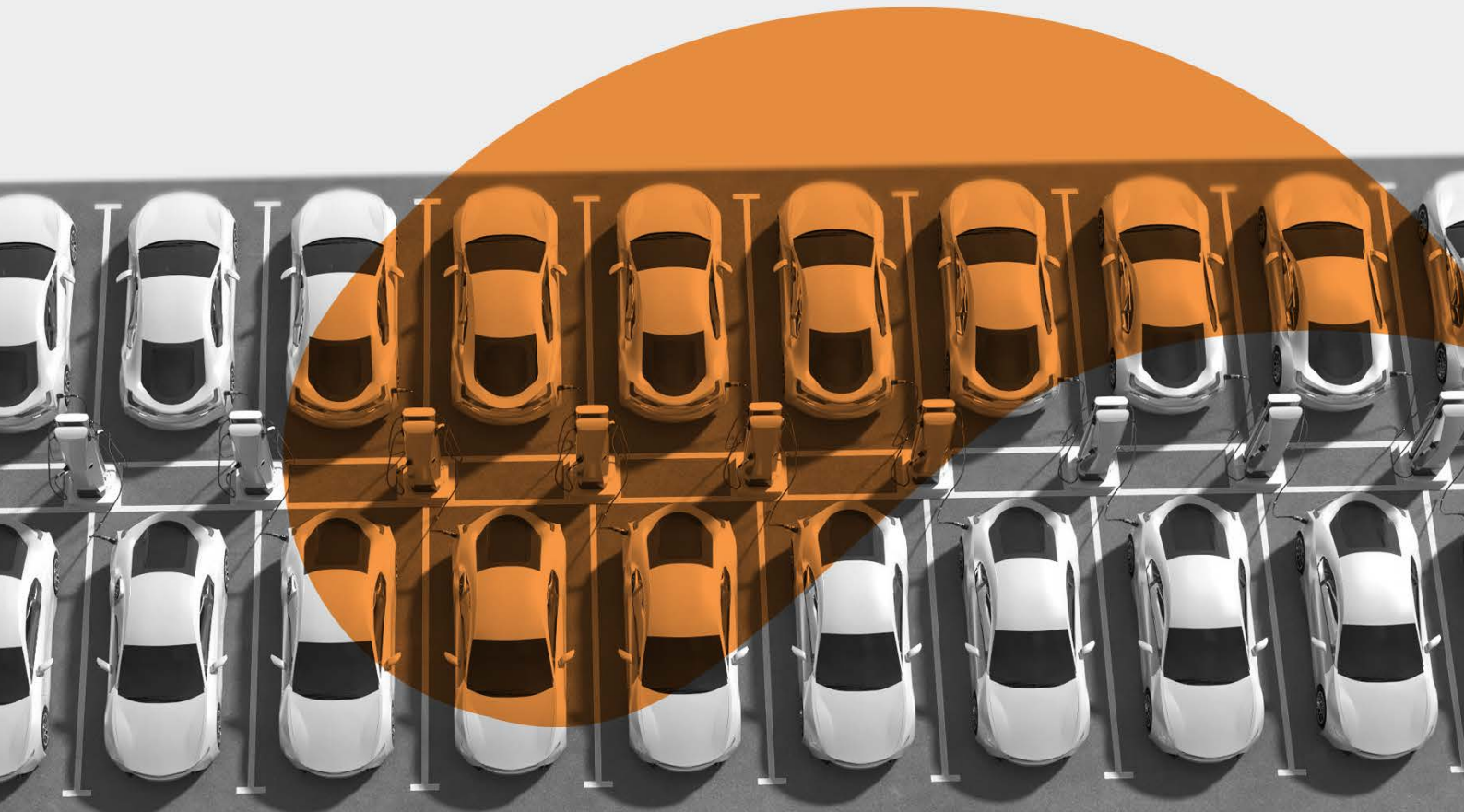
How will India benefit?

NeuraFlex uses smart meter data and dynamic tariffs to open up the energy resources in domestic and commercial properties to energy markets.

As well as the financial benefits for all, this new generation behind-the-meter technology can help India meet growing energy demand efficiently and sustainably, and ease pressure on the future grid.

What makes Neura Energy unique?

Neura Energy aims to work with solar, battery, and EV retailers to reach more consumers, maximising both market scale and coverage. This approach enables the creation of larger virtual power plants, able to generate more revenue than smaller alternatives while also lowering financial risk.



Energy storage and delivery



[Learn more](#)

The technology

Energineering specialises in low cost, high efficiency energy management solutions. The company's high temperature (200°C) heat pump combines heat production with energy storage capability.

How will India benefit?

India has large areas where power distribution is a challenge, in which microgrids can play a major role. India also has a need to provide power for EV charging in remote areas.

With flexible AC or DC power electronics, an Energineering unit can act as a storage system with both high voltage (HV) and low voltage (LV) discharge capabilities.

What makes Energineering unique?

Energineering's solution provides both AC and ultra-fast DC charging at high voltage (HV), providing crucial backup power for remote microgrids from a LV power source.



[Learn more](#)

The technology

PowerUp pioneers sustainable Energy as a Service (EaaS) solutions with AI-driven swappable batteries, leveraging machine learning to predict usage behaviours and enabling proactive just-in-time replacements, performance reporting and workflow best practices.

How will India benefit?

There's a significant opportunity for the adoption of PUOG's EaaS solutions to overcome grid constraints for mobile EV charging and also electric scooter battery swapping. PowerUp's software predicts when batteries need swapping and its technicians will arrive on a just in time basis, streamlining the process for users, and also enhancing the network capacity.

What makes PowerUp unique?

PUOG's replacement batteries in the EV charging or swap station can also act as a replacement for widely used and polluting back up power diesel generators.

Its PowerStation, comparable in size and weight to the fossil fuel generators it replaces, offers a wide scope of possibilities in reliable, flexible green energy distribution.

Energy storage and delivery



[Learn more](#)

The technology

Sherwood Power has developed energy storage technology that converts excess low-cost renewable energy into compressed air and heat, which can be released on demand to generate electricity.

The company's focus is currently on cold storage and distribution markets for food and pharmaceuticals, and data centres.

How will India benefit?

Sherwood Power offers 'grid edge' consumers and businesses in India hybrid on-site generation with integrated energy storage that reduces transmission and distribution losses, improves grid stability, and reduces the electricity supply cost.

What makes Sherwood Power unique?

Sherwood offers local electricity generation and storage at the grid edge that makes use of excess, otherwise lost, renewably generated energy. It is modular, scalable and recyclable after a 25-year operating life.



Hydrogen systems



[Learn more](#)

The technology

Anionix produces a novel electrolyser that is free from the expensive and critical metals other low carbon solutions require.

The combination of this, along with a novel membrane which provides greater strength and durability than existing solutions, provides a lower cost, long life system, ready to reduce both capital expenditure (CAPEX) and operating expense (OPEX) costs.

How will India benefit?

India has recently committed to growing its domestic hydrogen production, distribution and consumption.

The organisation's 'Anionix' solution is ideally suited to meet many of the use cases for electrolysers in both microgrid and off-grid scenarios.

What makes Anionix unique?

Anionix's electrolyser is cheaper to manufacture and run than currently available alternatives, with technology primed for a variety of challenging use cases.



[Learn more](#)

The technology

AqSorption offers an affordable and scalable membrane-less alkaline electrolysis system for green hydrogen production that is both efficient and long-lasting.

How will India benefit?

AqSorption aims to produce and distribute its electrolysers across South East Asia. Plans for a local manufacturing operation in India would create a global hub for the production, usage and export of green hydrogen and its derivatives.

There is tremendous demand (and market potential) for water purification across India. The oxygen produced by AqSorption's green hydrogen production can be used to purify safe drinking water.

What makes AqSorption unique?

Major benefits of AqSorption's solution include:

- High pressure operation
- Production on demand
- Expandable modular design
- Independent operation for remote sites

Hydrogen systems



[Learn more](#)

The technology

CAGE (Clean Air Gas Engines) has developed an emission-focused suite of gas engine control and combustion technologies for direct replacement of diesel engines and generators.

By optimising gas combustion, CAGE generators can run on any clean or Net Zero fuel including biogas, liquified petroleum gas (LPG), and hydrogen, to produce clean, green power.

How will India benefit?

Most of the gensets in India today are cheap diesel generators with short lifetimes, high fuel consumption, and high emissions. Through its existing partners and new relationships in-country, CAGE aims to provide an alternative: price-competitive, high-quality, clean fuel generators.

What makes CAGE unique?

CAGE's ultra-low emission generators offer an affordable, plug-and-play solution for off-grid sites, facilities, and farms. These generators optimise combustion of multiple gas fuels at varying levels for high efficiency and lowest possible emissions.



Hydrogen systems

Engas Global

an electrolyser and H₂ compressor company

[Learn more](#)

The technology

Engas Global specialises in electrolyser and hydrogen compressor technology to produce green hydrogen onsite at much lower costs.

Supported by Innovate UK, Engas Global has supplied green hydrogen and oxygen for:

- New and retrofitted hydrogen boats
- Biogas purification
- Powering off-grid EV chargers with bioCNG (compressed natural gas)-fuel

How will India benefit?

Subsidiary company Engas India currently seeks to create localised hydrogen supply chains in India using its electrolyser, and hydrogen compressor, H₂ storage and hydrogen refuelling products.

Engas India is looking for scaling up and volume manufacturing opportunities centred on its testing facility in Kolkata.

What makes Engas Global unique?

With no requirement to invest in costly machinery, Engas offers Indian hydrogen end-users much lower priced, affordable gas.



Hydrogen systems



[Learn more](#)

The technology

G-volution's dual fuel technology enables the co-combustion of diesel, and cleaner, less expensive, renewable fuels in diesel engines, including hydrogen, natural gas, and bioLPG.

How will India benefit?

Millions of diesel generator sets (gensets) keep India powered up when the electric supply is not available. G-volution's retrofit dual fuel solution reduces diesel consumption, lowers tailpipe emissions, and improves air quality, without the need to replace the gensets. The fuel price differential in India enables an attractive payback period followed by cost savings.

G-volution can also source major components direct from Indian suppliers, benefitting the whole country's economy too.

What makes G-volution unique?

G-volution's technology approach is unique to the market and offers enhanced performance, safety, and control. Available to the market today, the technology is scalable and delivered within an ISO9001-approved framework.



[Learn more](#)

The technology

Innervated Vehicle Engineering (IVE) produces hydrogen powertrains for light/medium goods vehicles (3.5-11 tonne gross vehicle weight (GVW)) for both the retrofit and OEM markets. The product consists of a fuel cell with a balance of plant and a supercapacitor energy store that includes controls and integration, resulting in a plug-and-play system.

How will India benefit?

IVE is now focusing on OEMs in India due to the large market sector and manufacturers' hydrogen aspirations. IVE's technology is ahead of anything currently being developed, and has the opportunity to be a crucial part of India's hydrogen future.

The Indian automotive sector's five-year planning cycle requires imminent solutions to realise Net Zero emissions in the future. IVE can help that with a ready-to-industrialise solution.

What makes IVE unique?

IVE turbocharges the production of new hydrogen LGVs with improved operational efficiency and reliability, thanks to its ability to create optimised designs for individual OEMs in line with established manufacturing timescales.

Hydrogen systems



[Learn more](#)

The technology

Logan Energy focuses on designing and implementing cost-effective hydrogen clean energy solutions using pre-existing market-leading technologies and systems, as well as supporting the equipment post installation.

Each system is designed, developed, manufactured, and installed by the in-house team.

How will India benefit?

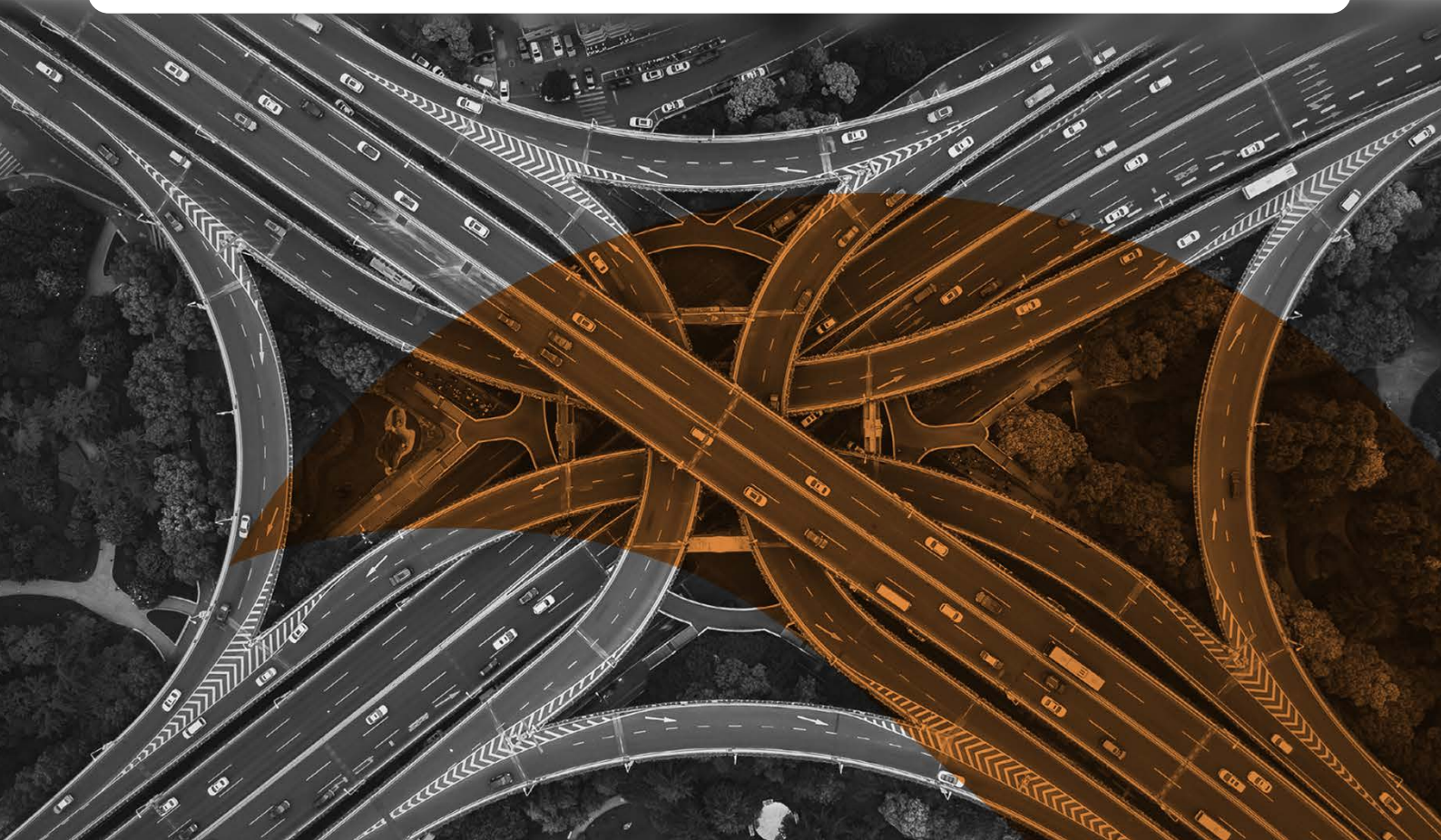
With a government focus on hydrogen-based technology to decarbonise the current Indian transportation sector, large scale requirements will include:

- Hydrogen storage and compression
- Hydrogen refuelling stations
- Sustainable, energy independent off-grid systems

Logan Energy has a proven track records of such projects in the UK, Europe and China that can be easily replicated in India.

What makes Logan Energy unique?

Logan Energy is technology- and manufacturer- independent. This offers a key advantage, being able to analyse and select any appropriate equipment for scalable hydrogen energy and technology projects.



Hydrogen systems



[Learn more](#)

The technology

Ockana delivers straightforward knowledge operations for technical professionals in the hydrogen and wider energy industry. So, they can retrieve knowledge, analyse deeply, and make sound decisions, fast.

Built specifically for technical professionals Ockana's knowledge operations software platform enables the next generation of technical knowledge work through collaboration with digital technology. Including technical standards writing, management, integrated analytics, automations. Raising the standard and pace of technical decisions on high hazard and critical energy infrastructure.

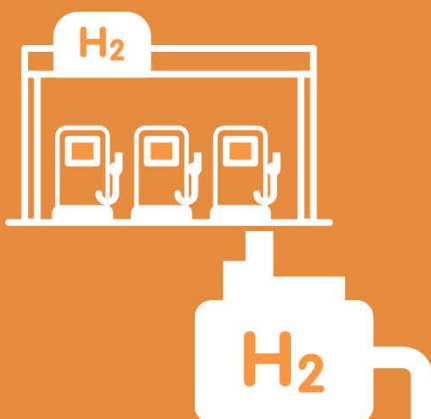
How will India benefit?

India's ambitious hydrogen implementation will require multiple physical assets to be designed, built, operated and maintained.

Ockana's accessible knowledge platform increases the pace of each stage of hydrogen asset development and implementation, reducing risk and cost without compromising integrity.

What makes Ockana unique?

Ockana views knowledge in blocks that, when combined with our approach to knowledge operations, makes it easier for humans and machines to use in deep problem-solving, decision-making and assurance roles.



Hydrogen systems



[Learn more](#)

The technology

Steamology Motion creates energy-dense zero emission steam, heat and power solutions for industrial, transport and commercial power applications.

Steamology's technology provides clean, high-energy hydrogen and oxygen fuelled steam with zero Carbon NOx, sulphur or particulate emissions, in a repeatable cycle that helps preserve water too.

How will India benefit?

Zero emissions steam turbine solutions can help fuel India's Net Zero ambitions through:

- Replacing fossil fuelled industrial boilers
- Diesel engine replacement in rail, marine, and road transport assets
- Clean heat and power for data centres
- Standby power to replace diesel generator sets.

What makes Steamology unique?

When compared to hydrogen fuel cells and battery alternatives, Steamology's scalable and modular solutions are:

- More energy dense
- More cost effective
- Have a longer life span.



Renewable generation and microgrids



[Learn more](#)

The technology

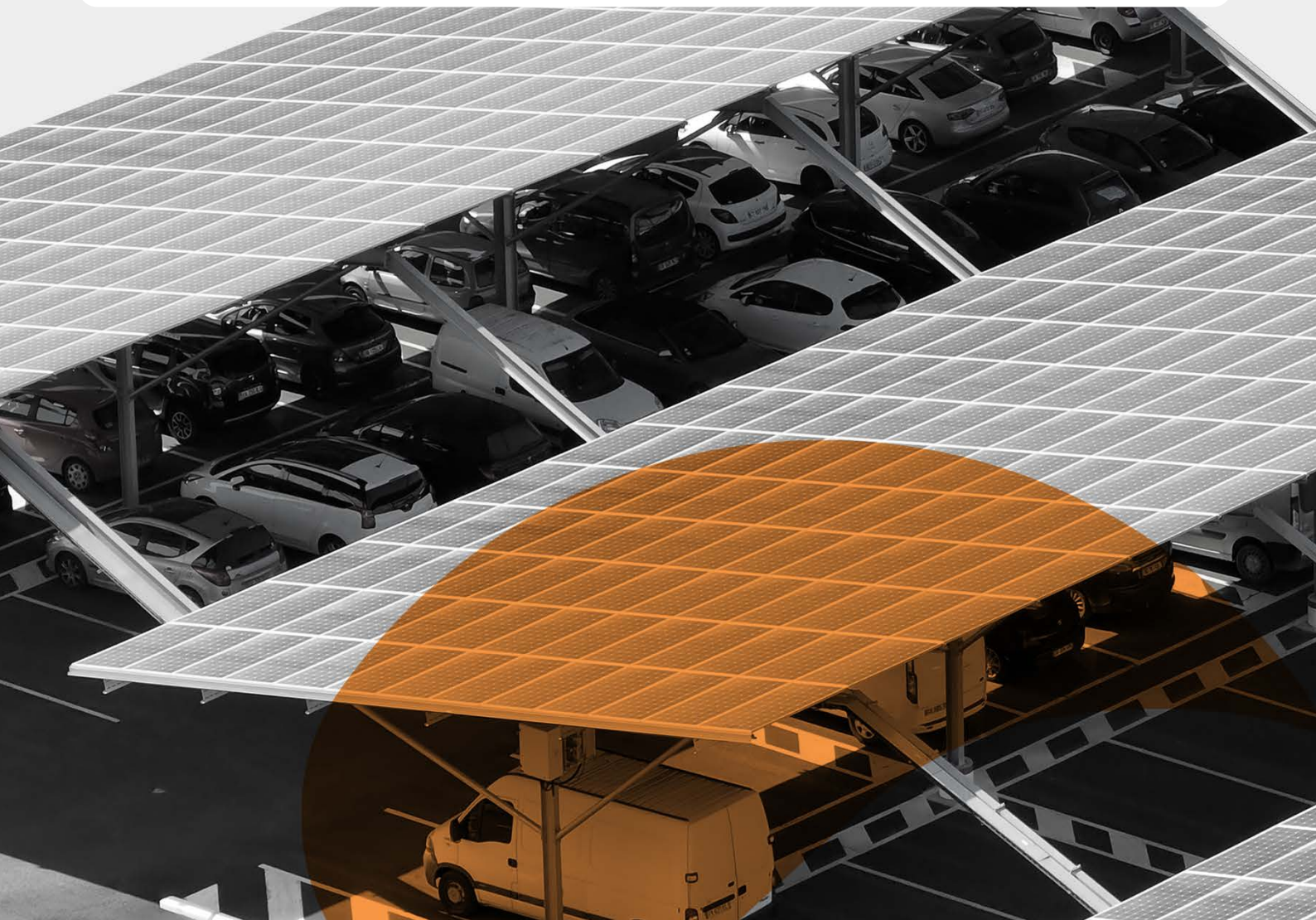
CrowdHouse Energy Ltd (CHE) designs and manufactures Helios Volt®, a bifacial solar parking canopy that is fully factory-assembled, tested, and delivered to site as a plug-and-play system. Helios Volt® enables businesses to generate 100% onsite green electricity using their existing assets, like rooftops and parking facilities.

How will India benefit?

India's climate optimises Helios Volt® energy generation by up to 47% per square meter, making it ideal for addressing the country's growing electricity demand. The bifacial canopy utilises sunlight from both sides of the panels to generate megawatt-scale energy. It also reduces grid reliance by up to 90%, providing businesses and communities with a sustainable alternative to traditional power sources.

What makes CrowdHouse Energy unique?

Helios Volt® delivers 100% on-site green energy using existing assets and includes a 30-year linear power warranty. It improves business resilience, local air quality, whilst saving on energy costs.



Renewable generation and microgrids



[Learn more](#)

The technology

Riding Sunbeams has developed cutting-edge direct wire connection of solar and renewable power solutions to rail traction systems. DC trials on UK railways prove it can be deployed safely, efficiently, and without disruption to train services.

How will India benefit?

Rail electrification is now complete in India. Riding Sunbeams can decrease the reliance on grid electricity to further decarbonise existing rail networks through the development and connection of solar, wind and energy storage assets.

What makes Riding Sunbeams unique?

Riding Sunbeam's solution has additional potential benefits to track-side communities through shares offered in the clean energy sources.

Equally, Riding Sunbeam's first mover advantage could be applied as knowledge transfer, or deployment, or both.



Renewable generation and microgrids



[Learn more](#)

The technology

The SolarBotanic™ Tree is a visually-appealing alternative to conventional solar panels. The attractive structure generates clean energy for charging EV vehicles and powering homes with an eye on design, harmoniously blending into any landscape.

How will India benefit?

For India, the SolarBotanic™ Tree offers modern and attractive clean energy generation solutions for India's major towns and cities, providing cost-effective EV charging under shady tree canopies.

The biomimicry design also blends into rural, off-grid landscapes where efficient and low maintenance solar power generation is required for farming and water filtration system.

What makes SolarBotanic™ unique?

With its unique visual appeal and application, the SolarBotanic™ Tree aims to encourage wider adoption and installation of renewable generation. It offers a natural-looking tree that combines solar photovoltaic technology in its leaves, with wind power generation technology from the movement of the branches.



[Learn more](#)

The technology

Sostratus Energy's VIAGEN system captures the kinetic energy of braking vehicles as they pass over a device on a road surface, and converts it into electricity. When used on routes with high density, power can be systematically generated, overcoming grid constraints and the intermittency of wind and solar.

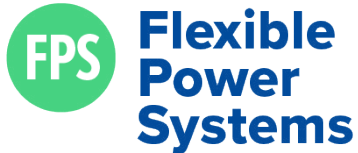
How will India benefit?

India's road network moves around 3 billion metric tonnes of every year. VIAGEN units can generate power in any area with a high density of slow-moving traffic, and be installed on the road surface with minimal impact.

What makes Sostratus Energy unique?

VIAGEN is currently the only system available to generate power from the movement of HGVs. VIAGEN recovers energy that would have otherwise been lost through vehicle braking, creating a sustainable and efficient energy solution.

ZEV fleet management



[Learn more](#)

The technology

Flexible Power Systems (FPS) has helped simplify fleet electrification for some of the UK's largest vehicle fleets in distribution and logistic businesses.

How will India benefit?

As part of its goal towards Net Zero transportation, India faces three challenges that Flexible Power Systems aims to address:

- EV fleet transition planning
- Balanced charger uptime
- EV fleet management and maintenance for fleets of mixed vehicles

What makes FPS unique?

FPS can provide planning and implementation of efficient solutions for the major players in the delivery and logistics market.

Solutions cover medium and heavy-duty commercial vehicles and the expanding sector of light commercial vehicles such as mini trucks, tiny trucks, cargo 3-wheelers, and light-duty trucks.



Glossary

AC	Alternating current
AI	Artificial intelligence
BCU	Battery control unit
BESS	Battery energy storage system
BMS	Battery management system
C&I	Control and instrumentation
CAPEX	Capital expenditure
CNG	Compressed natural gas
CO₂	Carbon dioxide
CPO	Charge point operators
DAC	Direct air capture
DC	Direct current
DISCOM	Electricity distribution company in India
E2E	End to end
EaaS	Energy as a Service
EMAP	E-mobility Management Platform
EV	Electric vehicles
EVIC	Evaluation and investment calculation tool
Genset	Generator set
GVW	Gross vehicle weight
H₂	Hydrogen
HGV	Heavy goods vehicle
HV	High voltage
HVAC	Heating, ventilation, and air conditioning
LCOS	Levelised Cost of Storage
LFP	Lithium iron phosphate
Li-ion	Lithium ion
LPG	Liquified petroleum gas
LV	Low voltage
NO_x	Nitrogen oxides
OEM	Original equipment manufacturer
OPEX	Operating expense
PV	Photovoltaic
SF₆	Sulphur hexafluoride



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Part of the **UK-India** Net Zero
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